

THE FUTURE OF TRADE

SPECIAL CRYPTO EDITION

PERSPECTIVES ON
DECENTRALISED FINANCE



It is virtually impossible have a meaningful and informed discussion on the future of trade without reference to the pervasive force of cryptographic and distributed ledger technology.

Proponents of this innovative and rapidly evolving technology contend that it benefits businesses, people, and the economy but there are others who remain unconvinced – especially given the renowned market volatility.

Our 2021 report outlined that global trade defied expectations; showing surprising resilience in 2020 despite the economic challenges posed by the pandemic. The research also uncovered that the most transformative element of the global trade outlook is technology.

Blockchain, decentralised finance (DeFi) and other new and disruptive technologies were found to accelerate trade growth, with DeFi protocols witnessing considerable investment.

Bank of America officially acknowledged in October 2021 that cryptocurrencies – now worth USD 2tn – had become too big to ignore; a view that is hard to disagree with.

Thus, investigating, understanding and predicting the impact on global trade of DeFi and all associated cryptographic technologies is front of mind for academic and captains of industry. It is also the focus of DMCC's latest 'Special Edition' of the Future of Trade report.

The information shared in this special edition report represents the views of an international panel of technology experts combined with conclusions drawn from extensive academic research, and the DMCC Crypto Centre in Dubai.

Whilst the research is deliberately designed to offer an objective perspective, it is clear that the subject of DeFi and its transformative impact on traditional trade finance models is something that merits our attention.

Regulation, education, infrastructure, sustainability and are all discussed in this balanced assessment, and it is our hope that report is both informative and offer a glimpse into the Future of Trade.

INTRODUCTION

Perhaps one of the most prevailing misconceptions amongst the general public is that blockchain = Bitcoin. While Bitcoin certainly has cemented its place as the world's most famous cryptocurrency, at least for the time being, remains perhaps the most publicly recognisable use of distributed ledger technology, blockchain is far more than its most prominent digital currency.

At its core, a public blockchain is a digital ledger which records transactions and shares this immutable record across all participants within the network. The underlying cryptographic concepts of blockchain technology were first explored as early as the 1980s and came to full fruition in 2008 with the now famous Bitcoin Whitepaper and the subsequent arrival of Ethereum in 2013. While Bitcoin signaled the radical arrival of new currencies in the form of digital money that operates outside the control of any central government, Ethereum sought to utilise blockchain technology for not just the maintenance of a decentralised payment network, but also laid the foundation for second-layer applications and contracts, thus dramatically broadening its applicability.

In the years since its inception, blockchain has become a base layer for technological innovations that carry the potential to touch a myriad of industries and update business processes from supply chain management to secure data exchange systems. Indeed, both banks and corporations have started to explore blockchain's potential value add for their businesses (some publicly, some in the privacy of their own research divisions).

As the blockchain industry continues to grow, certain areas and topics have emerged that garner particular interest. While non-fungible tokens (NFTs) have caused quite the stir in the recent period with record-setting sales for digital art pieces, decentralised finance (DeFi) has captured the attention of the financial world.

TABLE OF CONTENTS

EXECUTIVE SUMMARY	8
SCOPE & PURPOSE OF THIS REPORT	9
What is DeFi	10
Incompatibility as Opportunity	13
Substitute Vs. Supplement	15
DeFi and the Dawn of Personal Financial Services	18
Is DeFi an alternative to traditional finance or will it ultimately be integrated into classic financial institutions?	20
Decentralised KYC Solutions Will Reconfigure The Finance Sector and Prove That DeFi Is Here To Stay	24
A Look into the Future	
- Insights from Three Defi Startups Building on Tezos	26

A Tool for All	30
The Infrastructure Question	32
DeFi and Global Trade	36
Blockchain Powered Trade Finance	37
Regulating a New Frontier	39
Conclusion	46

EXECUTIVE SUMMARY

This publication serves as the first in-depth DMCC thought leadership report on both the global and local blockchain ecosystem, with a particular focus on the decentralised finance (DeFi) space. The report gathers contributions from a number of key opinion leaders and voices from within the growing DeFi space in order to share their views on where decentralised finance is headed in the near and far future. It places a particular emphasis on three key questions:

1. Is DeFi an alternative to traditional financial infrastructures or will it ultimately be integrated into and coexist alongside classic financial institutions?
2. What are the opportunities and risks of this technology for both the developing and developed world?
3. How can regulators develop and introduce appropriate measures for emerging DeFi solutions without stymying innovation?

This report ultimately poses that while it may still be too early to predict what exactly the intersection of centralised financial institutions and DeFi will look like further on down the road, it is becoming increasingly clear that DeFi has the potential to replace large swaths of traditional finance with easier and borderless digital payment methods and other optimised financial services – providing huge benefits across the supply chain and to trade. Governments and banks will have no choice but to innovate or risk being replaced. These innovations will have obvious knock-on reform effects for countless industries, including global trade, as DeFi-based trade finance solutions will empower SMEs and other often sidelined parties to become part of the global value chain. As such, DeFi truly serves as a ‘tool for all’ by evening the playing field and making financial tools and services accessible to anyone with an internet connection. And yet, in order to usher in the aforementioned changes, regulators must strike a balance between risk mitigation and innovation through responsible regulation that takes swift action against bad actors while offering confidence to innovators and market participants alike.

SCOPE & PURPOSE OF THIS REPORT

In light of DeFi’s dramatic rise over the past 18 months, this report takes a closer look at some of the key discussions and challenges around DeFi, posing three key questions:

1. Substitute vs. Supplement: Is DeFi a viable alternative to traditional financial infrastructures or will it ultimately be integrated into and coexist alongside classic financial institutions?
2. A Tool for All: What are the opportunities and risks of this technology for both the developing and developed world?
3. Regulating a New Frontier: How can regulators develop and introduce appropriate measures for emerging DeFi solutions without stymying innovation?

In order to explore these key questions, this report’s analysis also features a number of insights from experts at the forefront of the blockchain and DeFi space.

WHAT IS DEFI?

Decentralised finance refers to blockchain based platforms and products that offer users financial services – such as trading, securing insurance, and sending, lending and borrowing money etc. – without the need for a centralised authority or a third party.



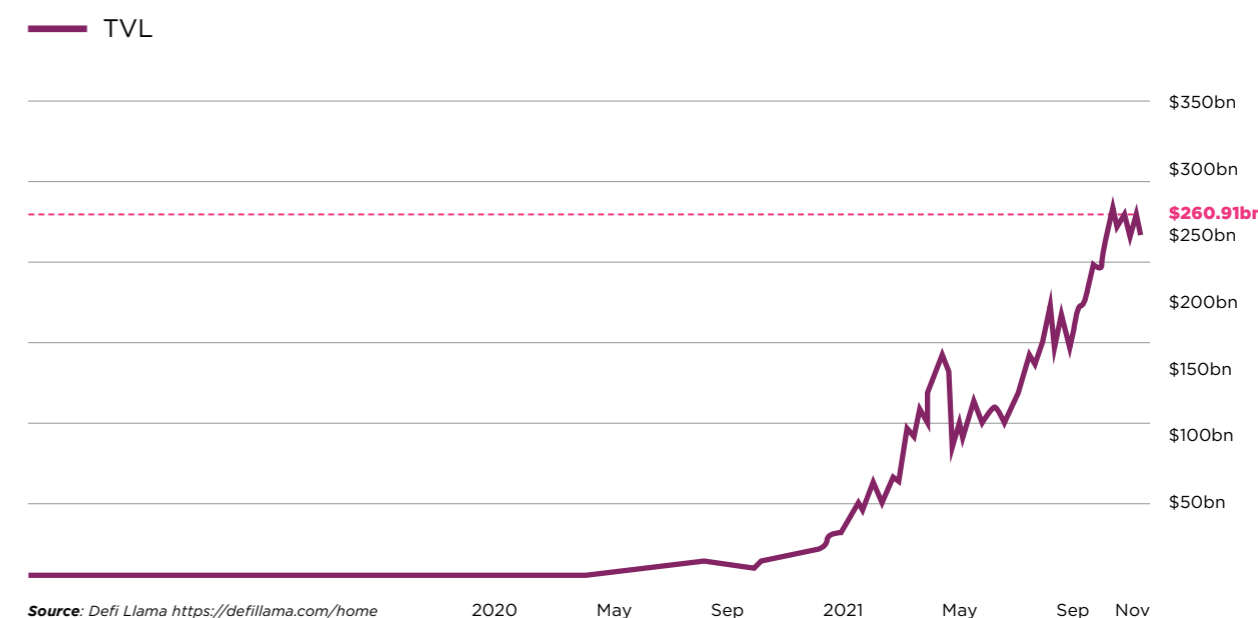
\$260.91bn

the total number of assets/underlying supply currently being staked across all DeFi protocols and platforms

As such, DeFi hails the vision of a financial system that functions without intermediaries (banks, insurances, clearinghouses). Most DeFi platforms/products fall into the dapp (decentralised applications) category. These applications are built on top of smart contract-enriched blockchains that allow for the governance and execution of a variety of transaction types, including loans, trades, etc. without the need for centralised infrastructure. It is this decentralised governance mechanism that allows users to execute transactions at far lower fees than both traditional financial institutions as well as other fintech applications.

At this point in time, the most common types of DeFi platforms include lending platforms and decentralised exchanges. DeFi initially started getting serious traction in 2020, and has continued its steady incline ever since. Back in 2020, the total value locked (that is, the total number of assets/underlying supply currently being staked) across all DeFi protocols and platforms had reached a peak of \$20 billion USD. As of November 2021, that number has now reached a staggering \$260.91 billion USD.

Total value locked across all DeFi protocols and platforms

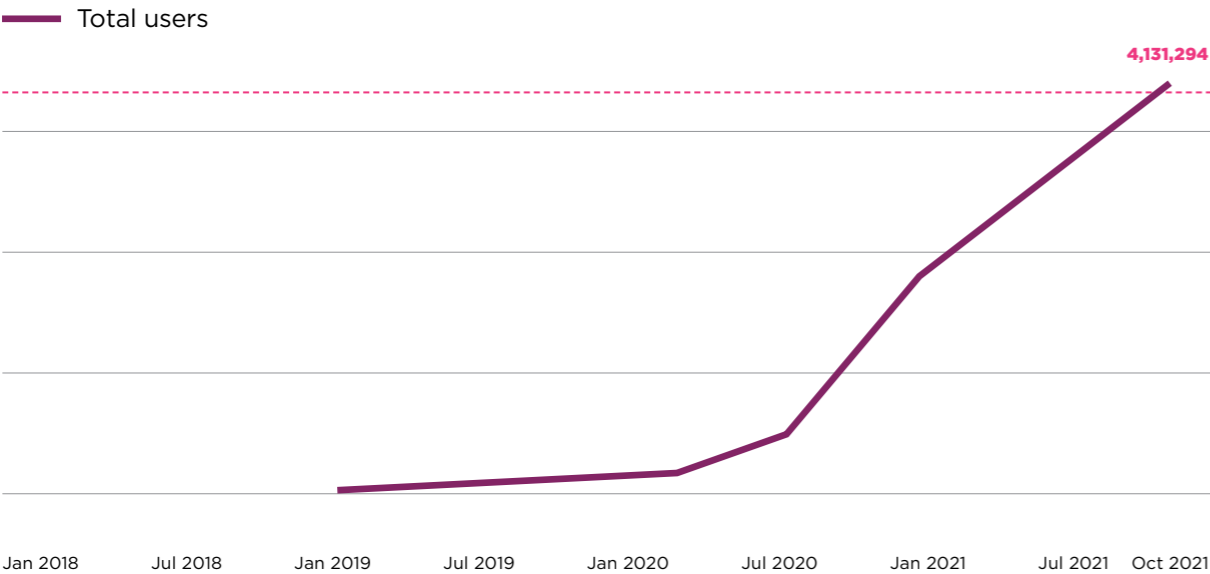


249%

increase in active user addresses that have interacted with the top DeFi projects since the beginning of this year.

This sizeable space has grown into an intricate system of platforms and projects that look to solve many of the problems and break through the barriers posed by traditional financial institutions. Throughout the past 18 months, new users have flocked to decentralised exchanges in droves: the DeFi space currently boasts some 4.1 million active user addresses that have interacted with the top DeFi projects, a 249% increase since the beginning of this year.

Total DeFi users over time



Source: Dune Analytics <https://dune.xyz/queries/2972/5739>



VCs are banking on DeFi’s continuous growth trajectory

In light of this dramatic growth, it is no surprise that venture capital companies are eagerly and actively investing in this booming space. Cointelegraph’s 2020 Blockchain Venture Capital Report found that of the 676 registered blockchain VC Investment deals that were made that year, over 100 projects – roughly 15% – had a DeFi link. The underlying signal is clear: VCs are banking on DeFi’s continuous growth trajectory.

From equity investments to broader product offerings tailored to the desires of investors, VCs are actively crafting their responses to this booming sector. The following two expert contributions offers insights from two such VC that currently place a particular focus on DeFi



Josef Holm
Founding Partner
at Draper Goren
Holm

EXPERT CONTRIBUTION

Incompatibility as Opportunity

The commercial banking system reminds me of the band aboard the sinking Titanic, playing on like nothing’s happening while the “unsinkable” ship is headed straight for the bottom of the ocean. Similar to the music industry in the early 2000s, banks have failed to innovate. They have not taken advantage of technological innovation, continued to provide slow and expensive services, and, most importantly, they have failed to put their customers first.

It comes as no surprise that banks like Wells Fargo, Bank of America, and JP Morgan Chase frequently lead the top lists of most hated companies in the United States. People understandably perceive banks as greedy, dishonest, and unethical.

Modern banks are opaque by design; they are predatory systems and their business models depend on people not understanding how money works but instead just trusting them.

“It is well enough that people of the nation do not understand our banking and monetary system, for if they did, I believe there would be a revolution before tomorrow morning.” Henry Ford

Decentralised Finance is the exact opposite; it is transparent and trustless by design. Code and smart contracts are open-source and auditable by anyone. DeFi incentivises people to learn about money, wallets, blockchains, and the different financial products available to them. This boosts financial literacy and social mobility.

Instead of giving their inflationary Fiat money to a bank for a fee or at zero or negative interest rates, DeFi users invest, stake, loan, or borrow against their crypto and make their money work for them. For the first time in history, powerful tools are available to the masses that have the potential to liberate the world from the shackles of the financial system. Very soon people won’t need banks anymore - and as it turns out neither will governments.

Historians will look back at this time and note that it was the governments with their move into CBDCs rather than DeFi that has marked the end of the commercial banking system.

“There will be no future for DeFi without compliance”

The only reason banks were able to do what they did was because of their de facto monopoly on money and their importance to the governments they were serving; an unsavory alliance that is now coming to an end.

On a macro level, governments are sometimes smarter than they get credit for, and sacrificing the banking system in lieu of a central bank currency is proof of that. Albeit the public fear-mongering, behind closed doors, governments don't oppose DeFi from a philosophical point of view, they are mostly concerned by their inability to collect taxes and to a much lesser degree, they also have unfounded worries about crimes and the funding of terrorism.

Many DeFi platforms and users are facing the tough decision of whether to become KYC/AML compliant in an effort to appease the regulators and avoid heavy-handed government crackdowns. There is likely going to be a period of division between those who value anonymity, a core principle of DeFi, and those who see that regulatory compliance is a huge opportunity to reach not just retail but deep-pocketed institutional investors alike.

While the libertarian in me wants the government to stay out of DeFi and let a free market establish itself without regulation. The realist in me accepts that there will be no future for DeFi without compliance, and speaking for the Draper Goren Holm venture fund, we would not invest in DeFi platforms that are not on board with becoming compliant.

SUBSTITUTE VS. SUPPLEMENT

DeFi has repeatedly been hailed as a revolutionary tool that is poised to reshape the financial sector at its very core.

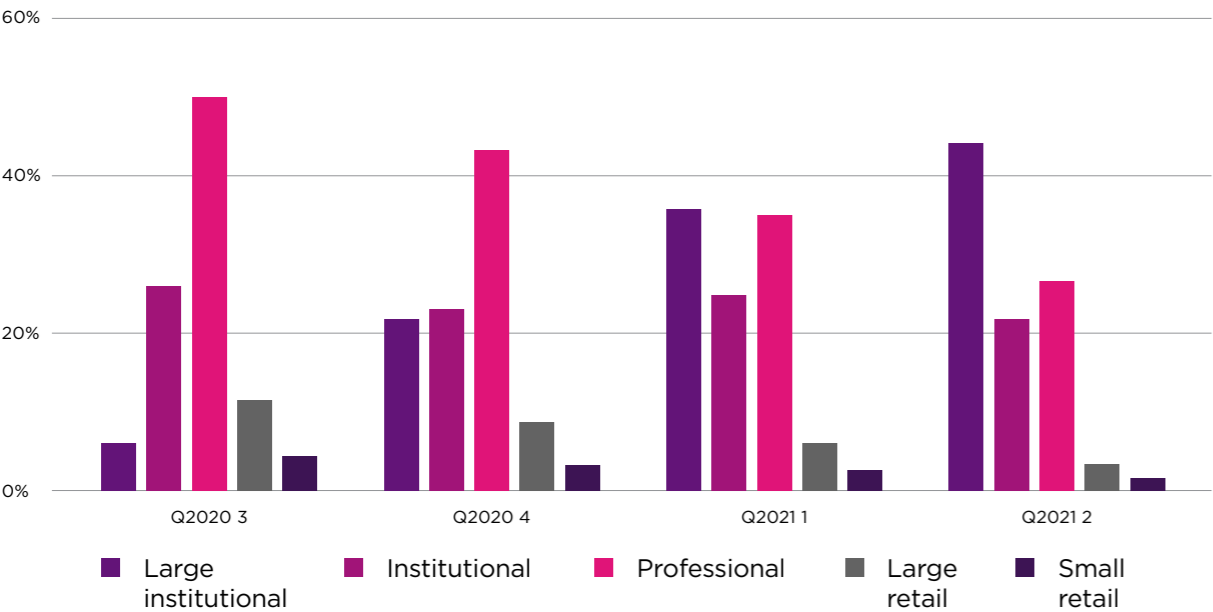


60%
of DeFi
transactions
were large
institutional
transactions by
Q2 2021

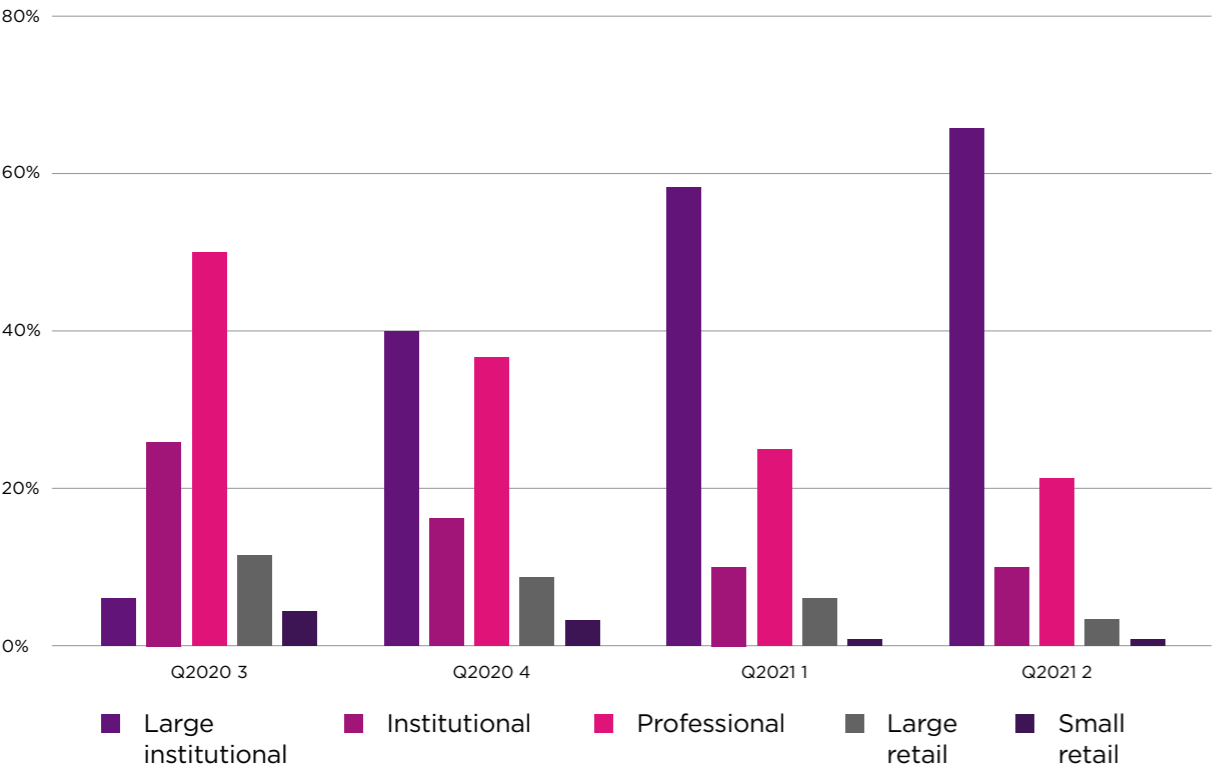
Its innovative dapps (decentralised apps) empower both individuals and companies to access many of the basic services offered by banks, such as lending & borrowing, securing insurance, trading derivatives, and more. Are the hopes for a DeFi revolution realistic? And if so, what does this mean for the traditional financial institutions that would face steep competition from the solutions offered by DeFi platforms?

DeFi's boom in over the past 18 months was made particularly significant by the types of players that entered the space. What was initially dismissed by traditional financial players as a niche community (DeFi) within another niche community (blockchain) of tech enthusiasts has attracted a significant number of large institutional players, and along with them, large transaction volumes. By Q2 2021, large institutional transactions (above \$10 million USD) accounted for over 60% of DeFi transactions, compared to less than 50% of all cryptocurrency transactions. Thus, it seems as though DeFi is disproportionately more popular amongst larger investors than the cryptocurrency space as a whole. This is further supported by the fact that countries with the largest professional and institutional markets consistently contribute the biggest share of DeFi activity.

Share of total transaction volume by transaction size for all cryptocurrency activity



Share of total transaction volume by transaction size for DeFi cryptocurrency activity



Source: Chain Analysis <https://blog.chainanalysis.com/reports/2021-global-defi-adoption-index>



Institutional interest in DeFi could signal a paradigm shift, with traditional financial players facing significant competition

These numbers reveal a reality, and point to a potential future, that may be far more troublesome for traditional financial players than they themselves anticipated should they choose to remain on the sidelines. The growing number of institutional players that actively participate in DeFi represents a key shift in the recognition of the space as a legitimate alternative to existing systems and processes that are outdated and riddled with intermediaries, and thus goes far beyond the presupposed limits of the enthusiastic tech-crowd. It implies that traditional financial players stand to lose not just retail and commercial business from individual users that opt for DeFi solutions in lieu of traditional services, but also hints at an impending competition for large institutional clientele.

The following three expert contributions offer a closer look at both why DeFi solutions are so attractive to individuals and institutional clients alike, and why traditional players should be eager to get some skin in the game or risk losing out entirely. The expert contributions are followed by three insights from startups building DeFi solutions, wherein they share their vision of a DeFi enabled future.



Mauro Casellini
CEO
of Bitcoin Suisse
Liechtenstein



Ian Simpson
Senior
Marketing &
Communications
Manager at
Bitcoin Suisse

EXPERT CONTRIBUTION

DeFi and the Dawn of Personal Financial Services

The overwhelming trend in financial services today is a strong digital push – and a push towards personalisation. From global players like UBS and Goldman Sachs down to boutique asset managers and investment advisers, there is no doubt that giving clients what they want, when they want it is the best way to meet their needs. In the words of the long-running Burger King advert – it is nice to “have it your way.”

Decentralised finance (DeFi) fits into this trend perfectly. After Satoshi Nakamoto helped introduce Bitcoin to the world as a way to put self-sovereign money into the hands of individuals, the pioneering builders of DeFi protocols – MakerDAO, Aave, Compound and Curve to name but a few – have taken the vision a step further by allowing people to borrow, lend, create insurance and earn with crypto assets – when they want, where they want. The open and trustless nature of blockchain technology has given individuals – whether in the City of London or in the backwaters of the Congo – the possibility to participate in potentially lucrative financial systems with few, if any, large barriers to entry.

Of course, traditional financial actors are not ignorant of this potentially disruptive development. Their focus on digital and personalisation has so far been mostly on offering a smooth mobile experience for e-banking or presenting clients with a tailored investment offering.

But DeFi offers more than that. With a truly global base-layer technology in the form of a public blockchain like Ethereum, Tezos or Cardano, DeFi protocols and applications make it possible to create markets and connect market participants around the world – in a fraction of a second – and without the many, sometimes needless, encumbrances that can prevent the free flow of capital based on the desires of those who hold it.

The paradigm shift which is playing out in this space is a significant one. Now “financial services” are centred around the actors that wish to interact with each other, not around one single institution or one single national market. The principle of composability allows the connection of multiple decentralised applications which share the same base layer. This gives DeFi users the possibility to

“DeFi protocols and applications make it possible to create markets and connect market participants”

move their funds from one place to another to take advantage of market opportunities – when they want, where they want. Soon interoperability protocols such as Polkadot and Cosmos will broaden the spectrum of possibilities even more.

Personalisation does not come without its price, however, as many will notice. Complete and utter control over money, especially in digital form, may not be easy to handle, especially in a first stage. Decentralised finance still has a steep learning curve – even as opportunities in the space change and evolve and new protocols emerge.

But as the world of DeFi continues to grow, it will remain a driving force in support of individual financial freedom and personalisation – the kind of personalisation that goes well beyond simply being able to choose what you want on your burger.



Katie Richards
CEO at Cyber
Capital

EXPERT CONTRIBUTION

Is DeFi an alternative to traditional finance or will it ultimately be integrated into classic financial institutions?

Let’s first look at the value proposition of classical financial institutions before the 2008 financial crises. We went to banks for two main reasons; it was a safe place to keep our money and we could borrow money to repay it at a later date. Up until that time, there were no other mainstream alternatives.

Loss of trust in centralised institutions

The collapse of the centralised institutions and capital markets system in 2008, sent shock waves around the world. Institutions we believed in as trustworthy, with supposedly solid governance, risk frameworks and layers of regulatory bodies, failed us to the cost to the American people alone of “at least \$20 trillion.” Millennials learned to distrust banks because of the home foreclosures and lost savings their parents lived through. Scepticism towards banks crept in.

A new form of trust

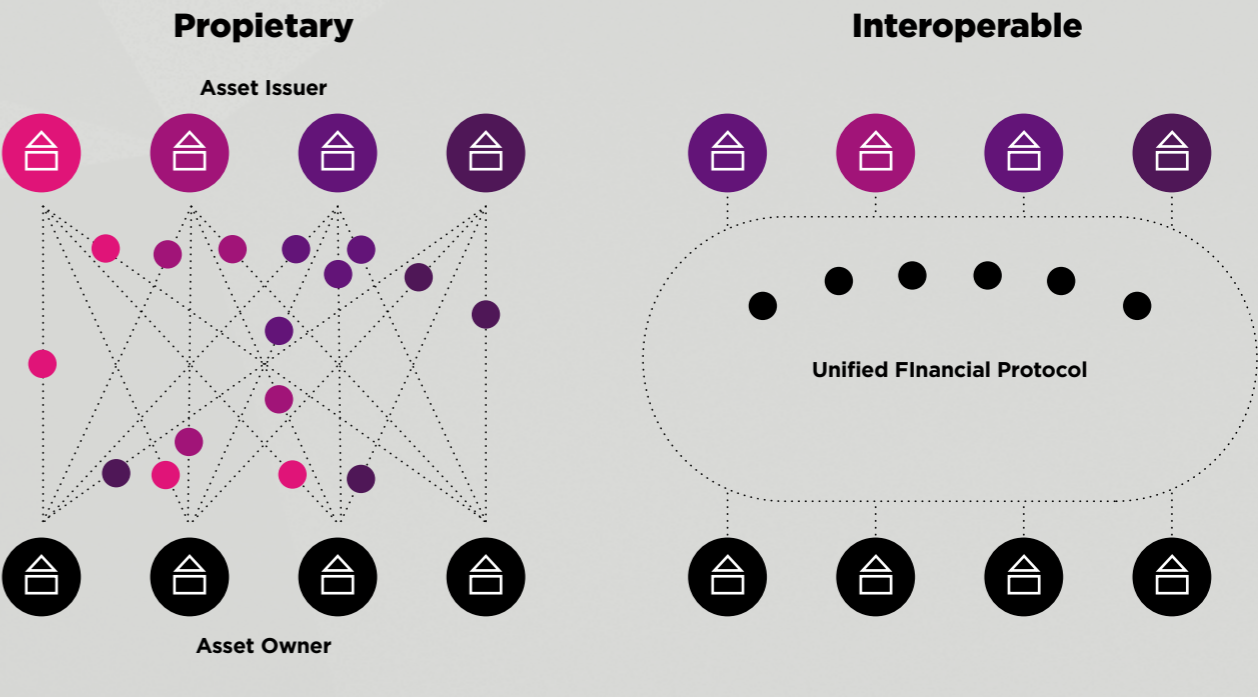
At the height of the financial crisis, a viable alternative arrived. The ground-breaking and disruptive technology of blockchain and the peer-to-peer (P2P) electronic «trust-less» cash system of Bitcoin emerged. Cryptography and consensus mechanisms across a decentralised network of computer could disintermediate intermediaries such as banks, brokers or exchanges to optimise the payment transaction process using bitcoin without a single entity in control. This new digital trust model built on a new tech stack working across the internet is a global, instant, safer, 24/7 alternative to classic payments, at a fraction of the cost.

A new paradigm – beyond Fintech

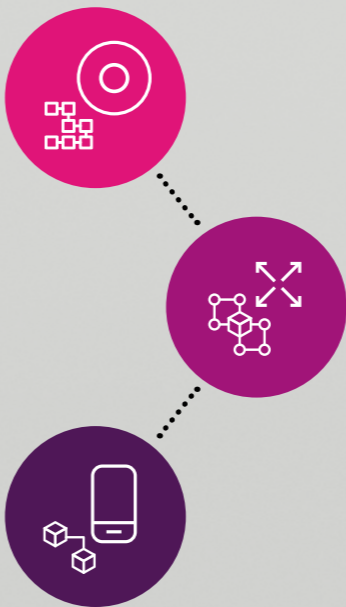
DeFi’s value proposition promises a full-fledged capital market using public distributed ledger technology built to change how financials products are manufactured and accessed. It is challenging and rebuilding the ‘how’ we do things in finance. It is not reinventing the underlying economic needs and activities to pay for something, save for the future, trade or exchange in a market place or invest money to grow.

Although the massive investments made in Fintech over the last 10-20 years are bringing results through our phones with robo-advisors,

online banking and payment services with names like Google Pay and Revolut, or trading apps like Robinhood, the changes are not sufficient to the masses who do not trust in banks or cannot access a bank or capital markets. The improvements are made on old tech of banks running on systems built before the internet on proprietary architecture versus an interoperable tech stack.



The interoperability of a decentralized financial system can be substantially improved by issues digital assets with a unified language

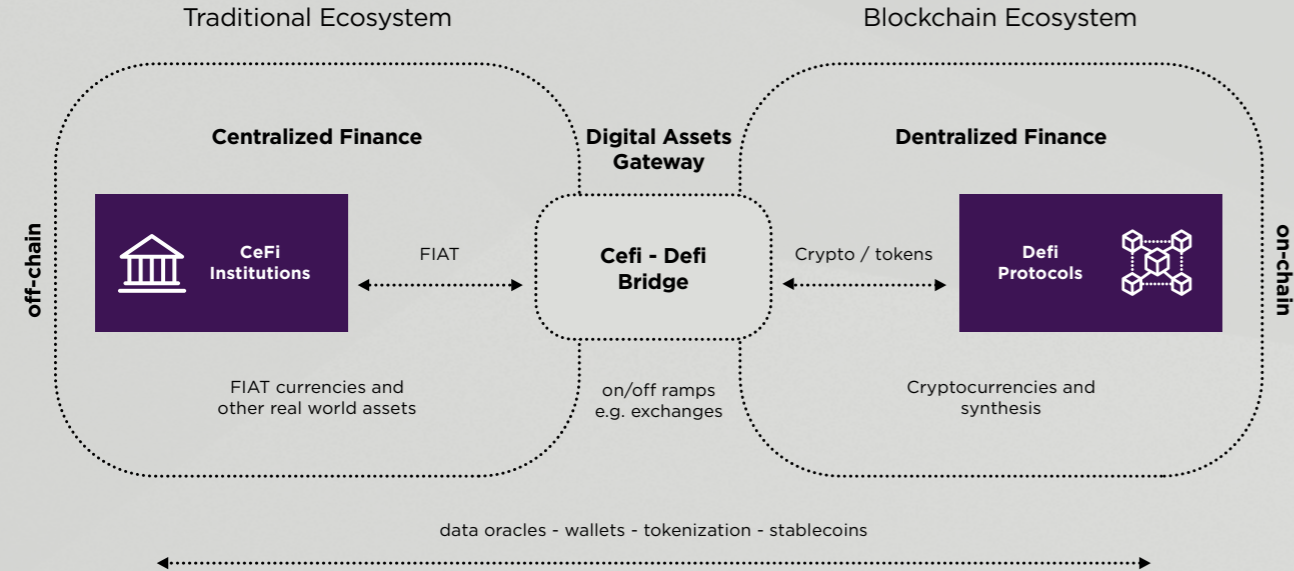


- DeFi’s interoperable architecture allows it to go three steps beyond the reach of classic financial institutions to:
- Focus on the underlying architecture at the core of financial services and the way financial products and services are manufactured
 - Expand the definition of financial instruments to include crypto- or digital-assets that can represent anything of value or a legal right like intellectual property. The DeFi instrument universe considers both tradeable and non- or less-tradeable assets like art (NFTs), real estate, cars or wine.
 - Solve the problem of social inclusion: where everyone in the world can have access to financial services in the blockchain ecosystem through the internet and a smart phone. Individuals can be their own bank - in the driver’s seat.

The CeFi-DeFi Bridge

Substitute or Supplement? DeFi will become a complement to traditional finance. A different form of ‘Open Banking’ will emerge with a strong co-existence and reliance between traditional and blockchain ecosystems. Digital value will flow through regulated digital asset gateways designed in a balanced way to respect users’ rights to privacy, developers’ need to innovate and regulators’ role and responsibility to establish and monitor compliance for technical, safety and quality standards.

The CeFi-DeFi bridge will play an important role as a digital assets gateway between the traditional and blockchain ecosystems. DeFi stands to benefit from CeFi’s massive liquidity potential through the tokenisation of its volume of real-world assets. And CeFi stands to greatly benefit from product development by tokenising assets from its customer base and lower processing costs with greater use of on-chain smart contract automation.



“The CeFi-DeFi bridge will play an important role as a digital assets gateway between the traditional and blockchain ecosystems.”

Conclusion

DeFi offers immense promise to allow us to reimagine how to build things, not only in banking and insurance but with any use-case across industries where contractual arrangements are involved. Built mainly on the Ethereum blockchain, DeFi’s decentralisation serves an alternative for members of the global society who distrust centralised institutions for the many who are unbanked or non-banked.

DeFi is transparent, non-custodial, permissionless, cheaper and available 24/7. It builds robust flexible systems for users to choose financial options that give them the most financial freedom and with ease through a phone and internet connection.

Millennials and the tech-savvy are more likely to adopt DeFi, however, many Gen Xers are actually the driving force behind mainstream adoption by bridging the new and old worlds of finance. And yet, not everyone has the time to do their own crypto research nor wants to fiddle with self-custody and potential loss of their private keys. Classic financial institutions will play an important role in the evolution of digital finance and clients are happy to continue their relationships with their broker or asset manager to help them navigate through the expanding world of digital assets.

DeFi moves on at speed with open plug & play building blocks and protocol standards for the interoperability of financial assets to achieve one goal: that finance speaks one language, not only for solutions for developers and one-click UX solutions for users, but for also for regulatory bodies.

From lending and borrowing platforms to stablecoins and tokenised BTC, the DeFi ecosystem has launched an expansive network of integrated protocols and financial instruments that traditional finance tech stack cannot reproduce. However, the opportunity to learn, collaborate, leverage and integrate cryptocurrencies and DeFi into traditional product and service offerings for clients is massive.

“DeFi is transparent, non-custodial, permissionless, cheaper and available 24/7.”



Rachid Ajaja
Co-founder
& CEO at
AllianceBlock

EXPERT CONTRIBUTION

Decentralised KYC Solutions Will Reconfigure The Finance Sector and Prove That DeFi Is Here To Stay

Traditional financial institutions commit massive resources to KYC and AML checks every year because they know the legitimacy of their industry rests on the findings. These practices are essential for reducing financial crimes such as money laundering and identity fraud. The rise in online services and value exchange, which has been accelerated by the Covid-19 pandemic, has increased cross-border financial activity. Now more than ever it is essential that the right checks are in place to regulate the exchange of value between different jurisdictions.

Recent figures show that 10% of the world's financial institutions spend at least \$100 million on KYC and customer due diligence every year, with some major institutions spending five times this amount. Not only are these checks expensive, they are also increasingly time and resource intensive. Findings show that banks are taking an average of 24 days to complete customer onboarding processes, while another study estimates that risk and compliance costs account for up to 20% of the total running costs of major banks. The issue with KYC and AML checks as they stand is that they are not scalable. Data must be constantly revised and reviewed. Any small change or update has to be reported and, more importantly, checks cannot be used twice. Every time a verification is required, the bank or institution has to conduct the same due diligence.

Despite causing significant logistical issues for traditional financial institutions, these checks are far more advanced there than they are in decentralised finance (DeFi). The burgeoning DeFi market is still a relatively new space, meaning that regulators and operators are not subject to the same scrutiny and standards as within traditional finance. Decentralised exchanges enable users to buy tokens with fiat currency, withdraw money, and trade and transfer different coins. Yet they are not forced to follow the same customer verification requirements as traditional banks. Indeed, a global study found that 56% of virtual assets service providers had weak KYC procedures.

DeFi will struggle to be embraced as a viable financial resource unless it embraces the checks that will ensure legitimacy. From

a regulatory standpoint the Financial Action Task Force found that 58 out of 128 jurisdictions signed up to the task force have implemented revised FATF Standards, 52 of which are now regulating Virtual Asset Service Providers. Combining these standards with trustless KYC and AML processes will greatly enhance trust in the space, increasing interactions between DeFi and traditional finance.

One of the key draws of decentralised finance is the reduction in the need for the intermediaries traditional finance relies on to verify user identities. Blockchain-based trustless KYC solutions allow users to prove their identity in a protected manner while still retaining control of their data. Through anonymous identity verification modules, a user's identity needs to be verified just once on any given platform. Across DeFi and traditional finance this solution could save institutions millions of dollars and hundreds of hours.

DeFi and traditional finance can complement each other by facilitating innovation and reducing compliance and regulatory costs across borders. In order for DeFi to be accepted as a viable and complementary component of finance, it must embrace industry standards and increase transparency across the board through solutions such as these.



10%
of the world's financial institutions spend at least \$100 million on KYC and customer due diligence every year

A LOOK INTO THE FUTURE – INSIGHTS FROM THREE DEFI STARTUPS BUILDING ON TEZOS



Klykov Vladimir
CMO at
Madfish.solutions

EXPERT CONTRIBUTION

Decentralised finance (DeFi) applications have become increasingly popular since 2017 and are considered by many as the next evolutionary step that will completely replace traditional centralised finances (CeFi).

Some of the advantages of DeFi are:

- **Borderlessness** - financial services are not tied to geographic locations or fiat currencies. These financial services are accessible by anyone across the globe.
- **Transparency** - anyone may review the smart contracts' codes and check the financial data. Replacing financial intermediaries with code results in a significant increase in trust in DeFi services and decreases operational costs.
- **Innovativeness** - most DeFi services are open source and allow developers to re-use their technologies and build new solutions. This significantly speeds up innovation and helps companies to quickly create new cost-effective products for their customers.
- **Instant liquidity access** - permissionless DeFi architecture allows companies to get instant access to the high liquidity volume in decentralised services.

However, the DeFi industry is still young and faces some issues that have already been solved by CeFi.

Let us briefly consider them:

Legal uncertainty

DeFi solutions are decentralised, censorship-resistant, and transparent. This means that anyone may work with these services without having to reveal their identity. Its paradigm is quite different from that of CeFi. The current level of legal regulation does not provide clear guidelines for users and organisations on how to work within the DeFi field.

Getting valid data from the real world

DeFi works very well if we conduct operations only on the blockchain. The difficulties start when we try to receive data from other sources, especially when this information is impossible to verify mathematically. Examples include personal identity validation, the tokenisation of physical assets, and the checking of the current state of the collateral. In many cases, we need a trusted source to conduct a physical verification that can be safely submitted to the blockchain.

Technical literacy

Users of DeFi need to understand what blockchain is, how their wallets work, how to evaluate projects, how to protect a seed phrase, etc. For many, this is an insurmountable barrier to getting started. This is how crypto currently works and, sometimes, the learning curve is too expensive for people.

Can DeFi be a substitute for CeFi?

Although DeFi is currently very different from CeFi, banks and other financial institutions may benefit from collaboration with the DeFi industry. CeFi can act as a bridge that connects ordinary users with various DeFi tools. In this case, financial institutions would not need to come up with new services, collect liquidity, or create a complex technical infrastructure. They could simply provide interfaces for interacting with DeFi, verify user identities, and tokenise assets. DeFi can also offer many hedging tools, such as options and derivatives, which can be used to secure bank transactions.



**Werner
Brönnimann**
Co-Founder
at Ubinetic

EXPERT CONTRIBUTION

For the most part, we live in a world that has become digitised way more than people would have imagined 20 or even 30 years ago. We carry supercomputers in our pockets almost 24/7 with access to even more powerful computers at the stroke of a touchscreen. However, traditional finance has not been truly disrupted. Processes are inefficient, salaries and cost structures are still high, and internal innovation carries the stigma of self-cannibalisation. Many players in traditional finance talk about digital transformation and innovation but mainly do patchwork.

Too many intermediaries make a living off the sector without adding any actual value for the final customer. It is typically hard for smaller players to free up the resources to work on projects that will not affect their bottom line for a while. Larger players often fund costly innovation hubs which mimic startups, but their products usually directly compete with the companies' core businesses. So, they tend to be deployed with less than 100% effort or not at all. Also, the proprietary solutions that some players offer often contain conflicts of interest.

In many ways, traditional finance acts as if the profound changes of the internet never really happened. The situation in finance could be compared to the one of daily staples retail in the post-war period before big supermarket chains started appearing or the situation of book retail in the 90s before Amazon began to outcompete the space with a supreme user experience at low costs.

Fintech was looking to solve this problem, but there are still only a few well established and purely digital players in the space. Many fintech providers suffer because they offer solutions that many clients perceive as nice but not as necessary. Also, when offering traditionally centralised solutions, the trust required to deal with people's savings does not always chime well with the start-up credo of "move fast and break things".

Blockchain effectively provides the missing link to finally having an internet of money, an internet of decentralised solutions and the ability to create trust through code. There are several platforms offering solutions that are currently available. But we feel that many of them suffer from one or several of the following issues: get rich quick schemes, counter-intuitive payoff designs, thinly veiled wealth transfer schemes, disregard for financial economics and lack of industry knowledge.



Bernd Oostrum
Co-Founder
at Plenty DeFi

EXPERT CONTRIBUTION

We believe in a fully automated issuance of financial products without the need for intermediaries. Automation, APIs, and cost efficiency should offer the potential for currently underserved markets.

Solutions should be peer-to-peer where feasible and open to traditional financial intermediaries to provide liquidity where necessary. The cost and revenue model should be transparent and without conflicts of interest. There needs to be an efficient way to deal with counterparty credit risk.

We believe that the Youves platform is on an excellent track to match these goals. It is a decentralised, self-governing, and non-custodial platform for the creation and management of synthetic assets.

Decentralised finance (DeFi) provides universal access to financial services by transferring the trust layer from financial intermediaries to software and code on the blockchain. Different DeFi protocols offer services, including borrowing, yield farming, crypto lending, asset storage and more.

Today, the majority of DeFi protocols run on Ethereum. The rising gas fees, waiting time, and congestion in the network have resulted in developers and users alike yearning for blockchains like Tezos, that can perform better than Ethereum, if not replace it.

Tezos consumes over two million times less energy than Proof of Work blockchains like Bitcoin or Ethereum and is the only blockchain with a robust and efficient on-chain governance system for forkless upgrades. The minimal carbon footprint of Tezos means developers and users can prioritise innovation, without compromising sustainability. Smart contract activity has been growing exponentially on the Tezos network thanks to popular NFT platforms like Hic et Nunc and DeFi applications like Plenty DeFi. In the past 4 months, smart contract calls have grown 363%.

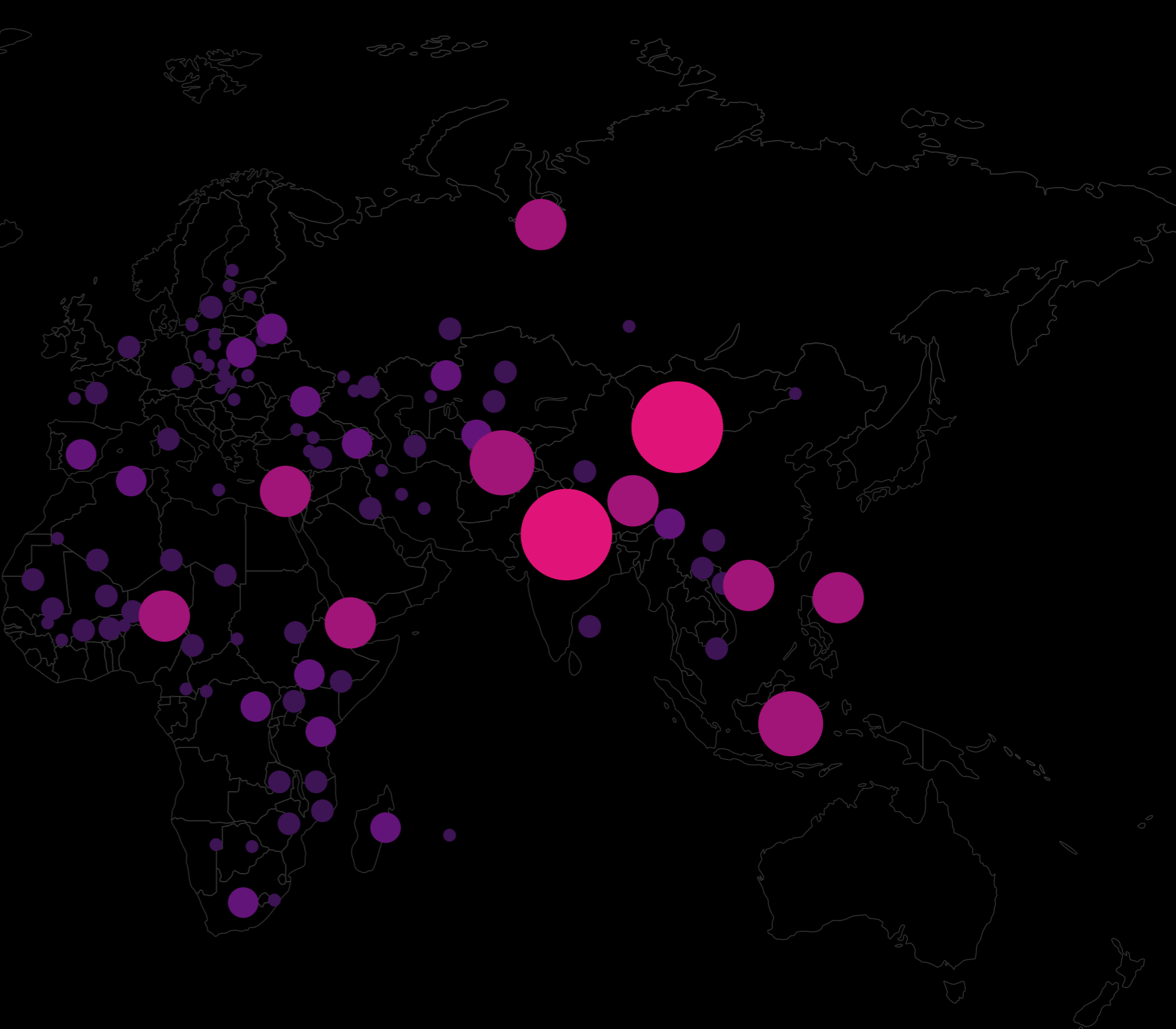
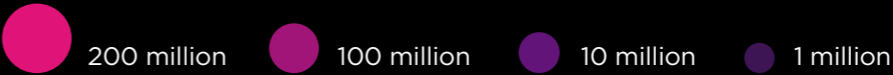
The potential of DeFi products and solutions is unparalleled. The massive influx of users and capital into the DeFi space is a testament to its potential. Keeping in mind the brief past, it is a no-brainer to envision DeFi going to the moon.

A TOOL FOR ALL

According to the World Bank, ca. 1.7 billion adults currently do not have access to banking services. A large number of these individuals reside in developing nations that may lack the infrastructure as well as the political and economic stability to provide them with access to trusted banking services. DeFi circumvents many of these issues, with comparably low barriers to entry (one simply requires electricity, a smart phone and a working internet connection).

As such, DeFi has often been heralded as the ideal harbinger of financial inclusion within developing markets. And yet, what will it take to successfully reach unbanked adult users in these markets? And how does this differ from strategies that can achieve mass adoption in developed markets?

1.7bn
adults globally do not have access to banking services.



Source: Global Findex Database <https://globalfindex.worldbank.org/>

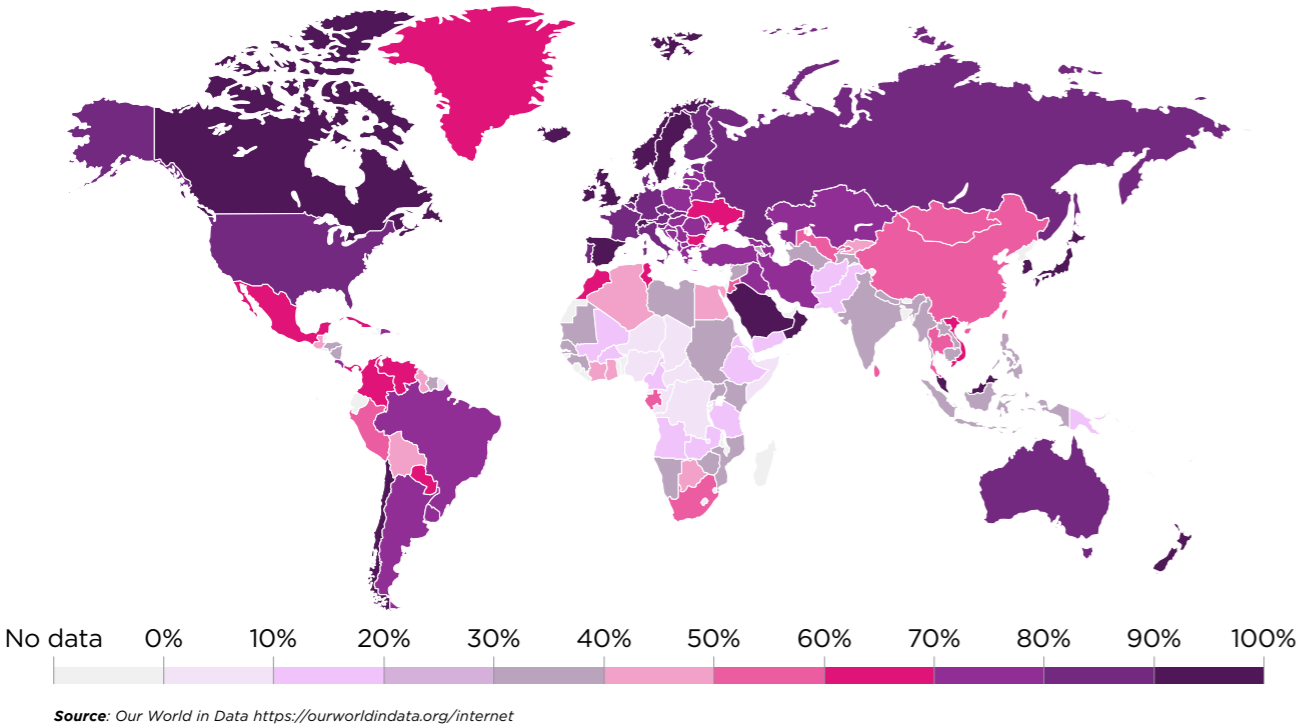
THE INFRASTRUCTURE QUESTION

When it comes to DeFi’s potential in the developing world, the lack of existing infrastructure (in the form of both trusted financial institutions and physical technical infrastructure) is both a blessing and a curse. DeFi need not fight many of the same battles

that are currently being waged between disruptive new DeFi platforms and the traditional financial industry in the developed world. Rather than displacing existing services, DeFi opens the door to a flood of new potential users that have no or limited alternatives at their disposal.

Share of the population using the Internet, 2019

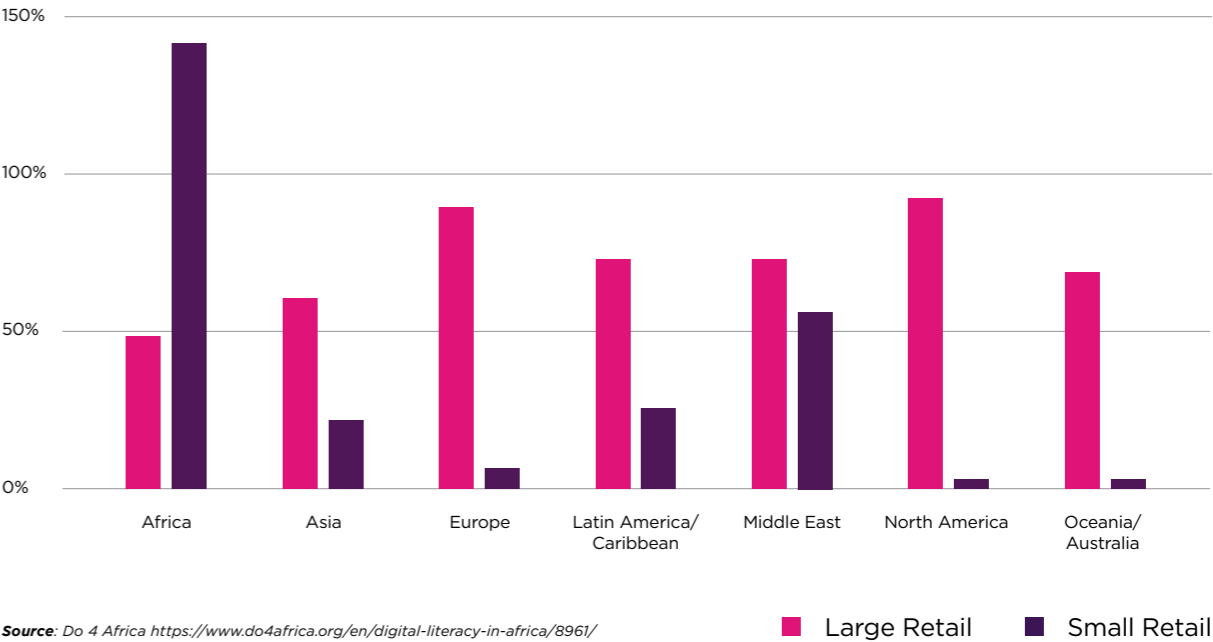
All individuals who have used the internet in the last 3 months are counted as Internet users. The Internet can be used via a computer, mobile phone, personal digital assistant, games machine, digital TV etc.



However, the lack of infrastructure also means that certain key elements, most notably a stable internet connection, may be lacking. Africa serves as a prime example for a huge potential market of unbanked users in dire need of access to financial services.

And yet, limited internet access makes the actual implementation of DeFi alternatives challenging. One such example is Sub Saharan Africa, where, according to the World Bank, less than 30% of the population has access to electricity (let alone internet).

World Internet usage and population statistics Q3 2020 estimates



In emerging markets with billions of users on smart phones, and already adopters of FinTech, the leap to DeFi is smaller than in developed markets

So, what does this mean for DeFi’s overall potential in the developing world? Crossing the digital divide is paramount if DeFi is going to achieve mass adoption amongst the general population. The good news seems to be that while the overall internet penetration rate in the developing world may be low at the moment, it is growing steadily, and in the case of Africa, by leaps and bounds. The result: an immense opportunity for emerging technology to partner its solutions with emerging economies.

The following expert contribution explores how DeFi projects are gearing up to seize this opportunity.



**Frederik
Gregaard**
CEO of the
Cardano
Foundation

EXPERT CONTRIBUTION

DeFi represents the next generation of financial services with applications outside financial products. Think of integrated solutions for digital identity, reporting, compliance, and asset management. Ambitions and realities align better and better, firms are complying more with regulations, entities request and receive licenses from governing bodies. Yes, some DeFi platforms still lack proper KYC standards or worse: operate in a grey area, but the trend is clear: it's an industry growing more mature by the day.

We see this trend in the financial markets, too: of the top 100 banks measured by assets under management, 55 have invested in cryptocurrency and/or blockchain-related companies. It is but a given DeFi will integrate into traditional institutions rather than DeFi becoming a one-on-one alternative to it as some conceive. It's really an impressive evolution, as developed countries with established financial infrastructures tend to be more resistant to innovation.

But implementation there is not nearly as impressive as what is happening in the developing world. In countries with a broken or nonexistent financial infrastructure, blockchain's open source nature and scalability are more easily adopted and thus quickly more impactful. You see this in the peer-to-peer trading volume in Nigeria or in a country like Ethiopia, where Cardano partnered with the government to implement a blockchain-based identification tool that also verifies students' grades, tracks school performance, and boosts employment. It's not a coincidence many in the developing world collaborate with Cardano with the goal of seizing the potential to leapfrog their national (financial) infrastructure.

Therefore, shaping the policies and industry standards in managing crypto assets on the African continent has become a key part of our strategy at the Cardano Foundation. It's a challenge. Regulators need to develop appropriate measures that don't stifle innovation. Some succeed. We see countries like Malta, Switzerland, or US states like Wyoming and Texas provide environments fostering blockchain-based companies to innovate. Reliable, regulatory frameworks are crucial there. But we also saw a heated and complex debate take place in the US Senate in early August over if and how to tax a variety of crypto-related businesses. And then there's China, where the government is suddenly cracking down on Proof of Work mining. Both examples

show that the entire ecosystem would really benefit from more governmental transparency, reliable frameworks and knowledge about blockchain innovations. A lack thereof really does restrict innovation.

We fully acknowledge the subject matter is complex but are here to deliver insights and jointly form solutions and help shape regulation. Our role in The Proof of Stake Alliance is perhaps a useful example. It was formed to bring legal and regulatory clarity around Proof of Stake protocols. One example of our work there has been sending the US Securities and Exchange Commission (SEC) a whitepaper outlining how proof-of-stake networks provide infrastructure services rather than financial products. Following this, a group of Congressmen has now formally requested the US Internal Revenue Service (IRS) to issue better guidance for taxpayers participating in staking.

Countries that can provide clarity and careful consideration on taxes can become a major innovation hub for blockchain companies. It's probably not much of a surprise that we look out into the future with confidence, as we work hard on making sure the fruits of this amazing innovation are distributed sensibly and evenly.



55 of top 100
banks have
invested in
cryptocurrency or
blockchain related
companies

DEFI AND GLOBAL TRADE

While the challenges for DeFi vary amongst developed and developing economies, its potential for global trade and specifically trade finance transcends economic development status.

The underlying catalyst? Globalisation. Indeed, the dawn of an increasingly interconnected world, where products flow across continents and oceans to serve a global consumer base has created ideal conditions for decentralised trade finance. According to the Trade Finance Market Outlook 2027, approximately 80-90% of world trade depends on trade finance, an industry valued at a staggering 8,942.27 billion USD in 2019.

And yet, despite the ever-expanding size of the global market and the general standardisation of administrative standards, goods, and infrastructure, certain processes remain painstaking and laborious, particularly with regards to payment transactions along supply chains. Further, exporters/importers from less-developed nations as well as smaller businesses in both developing and developed nations continue to pay higher fees and face barriers to entry, as the intricate web of buyers, sellers, banks and insurances responsible for maintaining liquidity in the international trade landscape favors large enterprises. Small and Medium Sized Enterprises (SMEs) continue to struggle in their attempts to secure loans and lines of credit from banks, as they often lack the necessary collateral assets and thus serve as a riskier investment.

DeFi comes to the aid of these disadvantaged groups by opening alternative channels through

which they may secure financing, such as access to liquidity and funding by converting the value of physical assets into digital tokens that may serve as collateral. Beyond that, DeFi smart contracts could drastically reduce the amount of paperwork involved in trade finance processes (e.g. smart contracts that serve as letters of credit) and reducing, if not eliminating, the need for intermediaries.

The following expert contribution takes a closer look at DeFi's role in trade finance.



80-90%
of world trade
depends on trade
finance



Saeed Hareb Al Darmaki
Founder at
Sheesha Finance
& Managing
Director MENA at
CasperLabs

EXPERT CONTRIBUTION

Blockchain Powered Trade Finance

Anybody in the world that says trade finance systems would not benefit from being powered by blockchain technology would be laughed at today by industry professionals who understand fintech. Perhaps a few years ago the technology was not developed enough to efficiently support trade finance however that is no longer the case especially with third generation blockchains such as Casper, Tezos and Solana amongst many others coming out and being developed with institutional users as their target. Rapid development of existing blockchains such as Hyperledger Fabric and R3 Corda has also strengthened the confidence in the technology in general.

In the MENA region at the federal level, the central banks of the UAE (CBUAE) and Saudi Arabia (SAMA) clearly see the potential of blockchain technology by working together on project Aber, focusing on payments between them, domestic payments between local banks and cross border payments between retail banks. Internationally, commercial banks such as HSBC, ING, OCBC, United Overseas Bank, ANZ, BNP Paribas, Industrial and Commercial Bank of China, MUFG and Standard Chartered Bank have all completed successful trade finance transactions using blockchain technology albeit at a relatively small scale. Examples of banks in the UAE that are embracing blockchain technology for trade finance activities are: ADCB, FAB, NBF, CBI, Emirates NBD, Rakbank, Mashreq and CBD. The most common use case of blockchain technology in trade finance is letters of credit where trade documents are digitised, electronically signed and shared on a real time basis between international parties involved in the transaction.

Some of the clear benefits that come with using blockchain in trade finance include transparency between international parties involved in transactions, reduced costs in cross border transactions, significant reduction in errors in documents related to those transactions as well as greater speeds in transfer of those documents. Whilst there are numerous benefits of using blockchain technology one cannot deny that there are also challenges with using it as would be the case with most emerging technologies. Those challenges include lack of interoperability and standardisation between blockchain protocols to a level where widespread adoption is possible. Regulatory standards and legal systems are yet to catch up with the technology and remain

unclear in many jurisdictions globally; MENA region countries have been proactive and exceptional with examples being the UAE and Bahrain. Integrating blockchain with existing legacy systems and maintaining the architecture is also complex and requires significant resources.

Trade Finance is clearly ripe for disruption by blockchain technology similar to other major financial service markets such as money remittance, banking and supply chain. Those entities that put in the substantial money, time and effort that is required to implement and maintain blockchain systems will in the long run be clear winners and take up significant market share. Organisations that fail to see the technological tide coming in will be overtaken and lament the lost opportunity. There is still some time left before that tide comes in so my advice to players in these markets would be to at least be educated to a level where making the required investment and necessary changes will be fast enough to avoid that scenario!



Confidence in Blockchain powered trade finance is high, but standardisation and interoperability are key to mass adoption

REGULATING A NEW FRONTIER

For regulators, new technology is always a challenge, one that often requires a fresh approach.



Many jurisdictions struggle to develop appropriate measures for DeFi without hindering innovation, while blockchain friendly nations such as UAE and Switzerland are working towards smart regulation and enforcement.

DeFi is no exception in this regard. While DeFi itself promises significant benefits from democratised access to financial products, improved market efficiency, easier access to liquidity, enhanced financial privacy, and faster innovation, it also comes with potential risks: networks are decentralised and global, and do not require interaction with the regulated financial system or other national legal regimes, such as taxation and national identity systems. Thus, issues such as fraud, money laundering and illicit activity, which are often linked to the world of cryptocurrencies, are also cause for concern within the DeFi space.

It is therefore no surprise that DeFi has proven to be the subject of ongoing debate as regulators struggle to ensure that projects operating in the space offer the necessary protections to their clients. In August 2021, Gary Gensler, Chair of the US Securities and Exchange Commission, called on Congress to grant the SEC more authority to police cryptocurrency platforms. Gensler compared crypto markets to the “Wild West,” stating that this asset class is “rife with fraud, scams and abuse in certain applications.” This sentiment seems to have tangible consequences: Coinbase, the crypto exchange which successfully debuted with a direct listing on Nasdaq back in Spring of 2021, announced the delay of its “Lend” product (which allows users to earn interest by lending digital assets via the platform) following a direct threat from the SEC. In 2021, consumer financing

services provider BlockFi received a cease and desist order from the New Jersey Bureau of Securities which demanded that the startup stop offering their interest bearing accounts, which had raised a total of \$14.7 billion USD from investors.

Indeed, the US is not the only jurisdiction grappling with crypto markets and platforms, and the industry is working hard to engage with and educate regulatory authorities both individually and collectively through bodies such as the International Organisation of Securities Commissions (IOSCO).

Thus, the key question remains, how can regulators develop and introduce appropriate measures for emerging DeFi solutions without stymying innovation? A number of jurisdictions have forged ahead with new legislation that aims to bring a certain degree of regulatory clarity to this new technological frontier (Switzerland, home of the so-called Crypto Valley, and the UAE serve as a prime examples, as do other jurisdictions such as Singapore and Portugal). These havens serve as a stark contrast to other jurisdictions (such as the afore mentioned United States), where regulatory bodies continue to grapple with DeFi after being caught off guard by the industry's sudden, exponential growth.

The UAE is making significant strides and fast becoming one of the most blockchain-friendly nations while also working to ensure that proper regulations are in place in order to protect users. The launch of the DMCC Crypto Centre, launched as a partnership between DMCC and CV Labs (a Swiss Venture Capital and Ecosystem firm focused on blockchain), helped usher in an ever-growing number of blockchain/DeFi projects that are flocking to Dubai. This move was made possible by the signing of a groundbreaking memorandum of understanding (MoU) with the Securities and Commodities Authority (SCA) which established a regulatory framework that

grants bespoke licenses for blockchain-related businesses. The close collaboration between SCA, DMCC and other industry experts demonstrates a clear commitment to developing an integrated blockchain ecosystem. While these moves make it easier for blockchain companies to set up and operate in Dubai, authorities are equally keen to ensure that a number of protections are in place to meet the flood of projects these regulatory changes has attracted. In October 2021, the Dubai Police announced that it will be collaborating with a local exchange and other industry experts in order to fight crime within the crypto space via its Virtual Asset Crime Section. It is both notable and exemplary that once again, UAE authorities chose to work closely with the industry in order to ensure smart regulation and enforcement.

The following expert contribution tackles this topic in further detail.



The UAE
Is fast becoming one of the most blockchain friendly nations

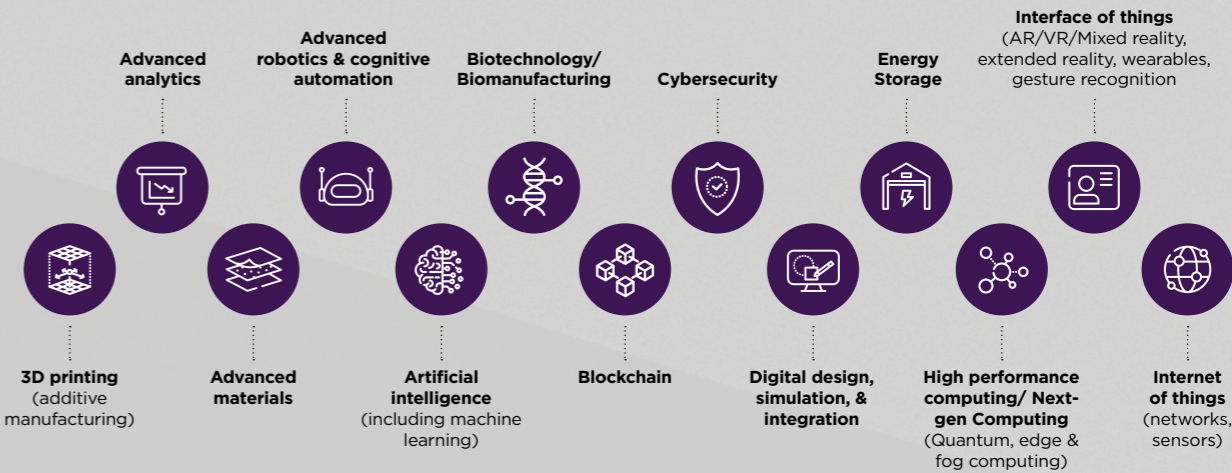


Dr. Guenther Dobrauz
Partner and
Leader PwC Legal
Switzerland/Holm

EXPERT CONTRIBUTION

Despite the global pandemic and other major events which weigh heavily upon us as a global humankind I believe it is still fair to say that we live in one of the most exciting and fascinating of times. If we look at what is going on beyond the surface, one of the most interesting aspects is the amount of change that occurs in such a short time and which is driven by the adoption of so-called exponential technologies. Truly there has been a remarkable amount of activity—founding, funding, acquisitions, and record valuations—from organisations being built on foundations of exponential technologies including AI, blockchain, IoT, 3D printing and most certainly also blockchain.

Exponential Technologies by Singularity University/PwC



But is it really disruption we will see or evolution? The starting point is to distinguish «invention» - the generation of ideas or concepts for new products or processes - from «innovation» - the translation of such new ideas into marketable products or processes - and indeed from «diffusion» - the widespread adoption of these products or processes in the market as Austrian economist Joseph Schumpeter explained. It is also essential to remember his seminal concept of «creative destruction» which describes the process of industrial transformation through radical innovation. What it essentially means is that the introduction of revolutionary products and services by successful entrepreneurs is the fundamental force driving sustained long-term economic growth but destroys the power of established institutions and organisations in the short term.

When it comes to innovation, it is by now well established that this usually arises and follows a certain lifecycle, which has been expertly summarised by James Utterback in his excellent book *Mastering the Dynamics of Innovation*. He points out that the rate of innovation in a product class or an industry is usually highest during its initial, formative phase. During this «fluid phase», as he calls it, a great deal of experimentation with product design and operational characteristics takes place amongst competitors, and much less attention is given to the processes by which products are made.

As a consequence, the rate of process innovation is significantly less rapid at this stage. During this formative period of a new product, the processes used to produce it are usually crude, inefficient, and based on a mixture of skilled labour and general-purpose machinery and tools. At first, an innovation may be almost entirely a combination of design elements tried out in earlier uses or prototypes. Even disruptive innovations, although typically originating from outside of the incumbent industry, usually arise in the context of resembling the technology, products, or processes they will ultimately replace and hence, at first, are not easily distinguishable. According to Utterback, it is fairly common in new industries of particular assembled products that a pioneering firm gets the ball rolling with its initial product, a growing market begins to take shape around it, and new competitors are inspired to enter and either grow the market further or take a chunk of it with their own product versions. No firm has a lock on the market at this early stage and no firm's product is really perfected. No single firm has yet mastered the process of manufacturing or achieved unassailable control of the distribution channels.

At this stage of the product's evolution, both producers and customers are experimenting. Within this rich mixture of experimentation and competition during the fluid phase and as the market grows, greater emphasis is usually placed on the development of components tailored especially for the product itself. Ultimately, these may be synthesised into a model that includes most features and meets most user requirements. Eventually, some center of gravity forms in the shape of a dominant design—yet another term coined by Utterback together with Abernathy. A dominant design has the effect of enforcing or encouraging standardisation so that production or other complementary economies can be sought.

Also, once the dominant design emerges, the basis of competition changes radically as the industry enters a «transitional phase» in which the major product innovation slows down, and the rate of major process innovations speeds up. A dominant design radically

reduces the number of performance requirements to be met by a product by making many of those requirements implicit in the design itself. Hence, as the form of the product rapidly becomes settled, the pace of innovation in the way it is produced quickens. Competition begins to take place on the basis of cost and scale as well as of product performance.

A firm in possession of collateral assets such as market channels, brand image, and customers switching costs will have some advantage over its competitors in terms of enforcing its product as the dominant design. In the ensuing new era of competition, the linkage of product technologies with manufacturing process, corporate organisation and strategy, and the structure and dynamics of an industry is essential. Interestingly, at least with respect to consumer products, narrowing the difference between the outward appearances of a new technology and those of the old and familiar can help in creating market success.

Before long, the competitive landscape changes from one characterised by many firms and many unique designs, to one of upwards consolidation with only a few firms with similar product designs surviving. At this point, product variety begins to give way to standard designs that have either proven themselves in the marketplace as the best form for satisfying user needs, or indeed designs that have been dictated by accepted standards, by legal or regulatory constraints.

For blockchain applications other than cryptocurrencies we believe that the point of an introduction of a dominant design has not been reached yet and the current market seems to prove our point. When we look at the other dimension – regulation – it would indeed also appear that the placement of Switzerland as one of the key markets was to some significant degree indeed prepared and driven by its regulation. Other than for example most of EU-inspired Europe what we brought to the table was more principles-based regulation which allowed our regulator to sit down with each applicant and discuss each project in detail and in its specifics to eventually come up with a positive or negative ruling a clear way forward. Also, the more recent pieces of regulation follow that idea to some degree and give hope that the classic Swiss way can be continued.

It is also important to remember that today the focus of innovation is increasingly abstract as it transcends its previous areas such as purely technical capability, markets, brand, and processes as boards become more and more abstract and the talent globally connected. Hence, what we increasingly face in today's blockchain world is so-called «Big-Bang Disruption» which has the potential to

collapse the product life cycle we know (including Everett Rogers' classic bell curve of five distinct customer segments—innovators, early adopters, early majority, late majority, and laggards) into only two segments: trial users, who often participate in product development, and everyone else. What this means is that where Moore (against the background of the industry dynamics of his time) focused on making the big leap from targeting early adopters to marketing to the early majority, nowadays big-bang disruptions can be marketed to every segment simultaneously, right from the start. As such, the adoption curve where these dynamics can apply has become something closer to a straight line that heads up and then falls rapidly when saturation is reached, or a new disruption appears.

In sum: Blockchain as one of the central exponential technologies, and indeed as a future background technology very much like electricity or the internet, is clearly driving change at a new speed. That being said, it is still a tad too early to determine dominant designs which will allow for a big bang disruption uptake, maybe also because there are no legal and regulatory rules of both sufficient determination and reach fully in place. But isn't this what makes it all so exciting? The future is decentralised!

Big Bang Market Disruption by Downes & Nunes (2014) in Harvard Business Review



Global blockchain and Defi adoption is inevitable but design and regulation will determine when the big bang disruption occurs

CONCLUSION

So, what does it all mean? The question of whether DeFi's growing stream will merge with the existing river of traditional finance or carve out its own canyon altogether remains to be seen. What is becoming increasingly clear, however, is that DeFi is a force of impending change that traditional players may choose to ignore at their own peril. The growing number of commercial and institutional players that are opting for DeFi platforms as both alternatives and complements to existing infrastructure hint that the demand for more efficient and flexible financial offerings is real. Traditional players can either choose to meet hop on board and meet this demand or stand by and watch as their market share springs a serious leak.

And yet, DeFi's promises of a decentralised, democratised financial future continues to face two major hurdles. In the developed world, gaping regulatory questions must be addressed in order for projects to forge ahead in an environment that offers the necessary protections to their growing user base. For developing nations, the bigger challenge here rests in the need for further expansion of the necessary internet infrastructure, and the subsequent education/onboarding of its new user base.

These goals are attainable: regulators may walk a fine line between regulation and innovative freedom, but a number of jurisdictions have proven that it is possible. Pioneers such as Switzerland and UAE are prime examples of regulatory authorities that work alongside industry experts in order to gain a deeper understanding for the technology they aim to regulate, and thus ensure that they can do so responsibly, without sacrificing the innovative spirit that seeks to drive the space forward. Similarly, internet adoption and education initiatives, often supported by government and/or industry players such as Cardano, in the developing world are opening the doors to these markets and thus may soon place DeFi on the cusp of offering financial tools to swaths of previously unbanked individuals.

Ultimately, DeFi's success is an endeavor that involves numerous cogs, and its future has monumental implications for personal and corporate finance, global trade, human interconnectivity, and beyond.

GLOSSARY OF TERMS

Bitcoin: The first ever cryptocurrency based on the proof of work blockchain. It is the most widely held cryptocurrency.

Blockchain: A digital ledger comprised of unchangeable, digitally recorded data. The data is held in groups referred to as “blocks” which are chained to each other chronologically using a cryptographic signature. This resulting ledger can be shared with and accessed by anyone with the appropriate permissions.

Cryptocurrency: Digital currency that is based on mathematics and uses encryption techniques to regulate the creation of units of currency as well as verifying the transfer of funds.

Decentralised Application (dapp): An open-source software application with back-end code that runs on a decentralised peer-to-peer network instead of a centralised server.

Decentralised Finance (DeFi): Decentralised finance encompasses a wide array of blockchain-powered platforms and products that provide financial services – such as trading, securing insurance, and sending, lending and borrowing money etc. – without the need for a centralised authority or third party.

Ethereum: A public blockchain network and decentralised software platform upon which many developers build and run applications. Its currency, Ether (ETH) is the second most widely held cryptocurrency.

Proof of Stake (PoS): An alternative protocol for establishing consensus, in which a so -called “validator” uses their own cryptocurrency to validate transactions. Validators “stake” their cryptocurrency on the specific transactions they choose to validate and earn rewards for correctly validating a group of transactions (block). Verification of an incorrect transaction generally results in the loss of the amount staked.

Proof of Work (PoW): A protocol for establishing consensus that links mining capability to computational power wherein the hashing (conversion of the input function into an encrypted, fixed output) of a block requires each miner to solve for a pre-determined variable. The resulting competition between miners raises the difficulty of successfully hashing each block. Miners usually earn rewards for their work (generally measured by the computational capacity they had to provide in order to hash a block).

Smart Contract: Programmes whose terms/conditions are recorded in a computer language instead of legal language, meaning automated actions that can be coded and executed once a set of conditions is met.

Staking: The process of verifying the correctness of transactions in a PoS blockchain where validators lock up a certain amount of cryptocurrency in the corresponding, and the locked assets are then used to achieve consensus/ensure the validity of transactions. Participating validators are subsequently rewarded.

Total Value Locked (TVL): A number which represents the number of assets that are currently being staked in a specific protocol.

¹Better Markets, (2012 September 15) “The cost of the Wall Street caused Financial Collapse”. Retrieved from https://bettermarkets.org/sites/default/files/Cost%20Of%20The%20Crisis_2.pdf

²Svoboda, Michael. (2019 July 7) “The ACTUS Financial Protocol.” Medium. Retrieved from: <https://medium.com/at-par/the-actus-financial-protocol-839a3d8f52dc>



About DMCC

Headquartered in Dubai, DMCC is the world's most interconnected Free Zone, and the leading trade and enterprise hub for commodities. Whether developing vibrant neighbourhoods with world-class property like Jumeirah Lakes Towers and the much-anticipated Uptown Dubai, or delivering high performance business services, DMCC provides everything its dynamic community needs to live, work and thrive. Made for Trade, DMCC is proud to sustain and grow Dubai's position as the place to be for global trade today and long into the future. www.dmcc.ae



About DMCC Crypto Centre

The DMCC Crypto Centre is an ecosystem for companies focused on the development and application of cryptographic and blockchain technologies. Guided by progressive regulatory framework, the DMCC Crypto Centre offers a home to all types and sizes of crypto businesses. The DMCC Crypto Centre also houses a leading crypto advisory practice and accelerator programme led by CV Labs, whose Switzerland-based Crypto Valley supported the launch of industry leaders including Cardano and Ethereum.



About CV Labs

- CV Labs is the heartbeat of Crypto Valley, Switzerland's Blockchain hub. We help global start-ups, corporates, and investors to leverage Blockchain technology and to transform their industries. As the international ecosystem builder of CV VC, we are an intrinsic driver of the fourth industrial revolution.

- CV Labs drives CV VCs international ecosystem by executing incubation & acceleration programs, developing events & summits, delivering advisory & reports, and providing co-working spaces to the community.



DMCC

futureoftrade.com

© DMCC 2021