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The ultimate Web3 CFO guide

2023 EDITION

A PRACTICAL GUIDE
Actionable insights from finance and operations professionals at leading Web3 companies, DAOs, and Foundations.

Key Insights

We spoke to 250 finance and operations leaders at Web3 companies. We wanted to find out what their biggest challenges were when they started their new role, and what they learned.

1. Education is needed to help finance professionals understand Web3. Most CFOs at Web3 organizations come with prior experience in financial operations, accounting, or similar roles, but struggle with learning about Web3.

- 66% of Web3 CFOs indicated that they had more than 3 years of experience in a finance or accounting role before joining a Web3 organization.
- Over 99% of CFOs at Web3 organizations said they did not have formal on-boarding processes when they started in their roles.
- 63.6% said that knowledge of Web3 was one of the biggest gaps in their professional knowledge when they first started as a Web3 CFO.

2. Financial Operations (FinOps) tooling in Web3 represents a tremendously underserved SaaS category. Existing payments, accounting, or enterprise resource planning (ERP) tools are ill-suited to the needs of Web3 CFOs.

- When asked about the availability of FinOps tooling in Web3, over 85% of CFOs polled said that it was "insufficient" compared to Web2.

3. Web3 CFOs are re-emphasizing self-custody of their organizations' digital assets, following he string of collapsed CeFi platforms in 2022, like Celsius, Hodlnaut, and FTX.

- About 97.5% of Web3 CFOs indicated that more than half their organization's digital assets and crypto treasury are held in self-custody today.
- Interestingly, most Web3 CFOs polled were already actively practicing self-custody. Only 27.3% of Web3 CFOs indicated that the implosion of centralized crypto platforms in 2022 led to a shift towards more self-custody.

4. Despite the challenges, Web3 CFOs are optimistic about the growing need for more finance professionals in the blockchain space.

- 76% of Web3 CFOs polled estimate that the demand for finance, accounting, tax and audit professionals will grow over the next 12-24 months.

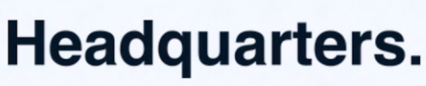
About Us

Request Finance is an enterprise crypto payments app, founded by YCombinator alumni with the thesis that we can build a more transparent, borderless, and innovative financial system with blockchain technology.

Since launching to the public in 2021, we've helped simplify and automate more than $260m in crypto invoices, payroll, expenses, prizes and grant disbursements.

Trusted by over 2,300 teams like The Sandbox, Decentraland, Aave, and MakerDAO. Self-custodial, and compatible with hundreds of different crypto wallets, tax and accounting software providers.

Our Contributors



WITH SPECIAL THANKS TO:

AND THE 250 FINANCE AND OPERATIONS LEADERS WHO PARTICIPATED

About this Guide

WHO IS THIS FOR?

If you manage financial operations (FinOps) at a company, foundation, or decentralized autonomous organization (DAO) dealing with crypto in some way, this Guide is for you.

Titles don't really matter. For simplicity, we use the title "chief financial officer", or CFO to refer to the person responsible for the financial health and operations of a team. Your actual title may vary. But no matter the title, the responsibility for the team's financial health, daily functions, and compliance falls on you.

Knowledge of economics, finance, or accounting is helpful, but not necessary for you to understand, or use this Guide.

HOW WILL IT HELP ME?

This Field Guide is not a textbook laden with theoretical nuance. It is a practical, everyday resource drawn from the experiences and insights of over 250 finance and operations leaders at crypto companies.

It is filled with actionable insights, illustrative case studies, and best practices that are easily accessible for busy professionals like yourself. Whether you are new to the role, or even the industry, this Guide contains practical resources to help you excel in key areas of FinOps in crypto.

WHERE SHOULD I START?

The Guide is organized from the basics of setting up a crypto wallet, to more advanced topics like treasury management. But you need not read it from cover-to-cover in one sitting. You can refer to the relevant sections as needed during the course of your work.

What's inside the Guide

Foreword from our CEO

Our world is dramatically different from the one I knew, when I first began my journey as a CFO.

Finance is changing. Money has become programmable. Decentralized Finance (DeFi) platforms enabled by new cryptoeconomic primitives like smart contracts, and blockchain payment rails are opening new possibilities at an unprecedented scale.

Organizations too, are changing. The normalization of remote work amidst the COVID-19 pandemic, and the mushrooming decentralized cooperatives like DAOs have enabled new and global ways of creating value collaboratively.

The Web3 CFO Guide is aimed at helping you navigate these exciting new frontiers as a CFO. The insights contained inside are based on our interviews with over 250 finance and operations leaders at DAOs, and crypto companies like The Sandbox, Decentraland and more. Many of whom are active members in the web3cfo.club; with team sizes varying between ten to hundreds of employees and contributors.

We want to thank all who contributed to this Guide. Your insights and experiences will be invaluable to helping Web3 CFOs, maximize the value of their role, and the effectiveness of their teams.

For more detailed insights or questions, we encourage you to contact us, or any of the authors listed at the back of this document.

CHRISTOPHE LASSUYT,
CO-FOUNDER, REQUEST FINANCE

CHAPTER 1.0

Challenges facing Web3 CFOs today

What are some of the biggest hurdles that Web3 CFOs face? These represent areas of opportunity for best practices, and new tooling to emerge.

Challenges facing Web3 CFOs today

Despite the tremendous opportunities in Web3, CFOs in the space face a number of challenges today. We spoke to 250 finance and operations leaders at Web3 companies. We wanted to find out what their biggest challenges were when they started their new role, and what they learned.

1. LEARNING CLIFF

Many Web3 CFOs came in with prior experience in a finance role, with 63% citing gaps in their knowledge of crypto, DeFi or other blockchain technologies as one of the biggest handicaps when they first started.

"I would describe it as a learning cliff - just an endless wall", said one CFO. "That's how it feels like".

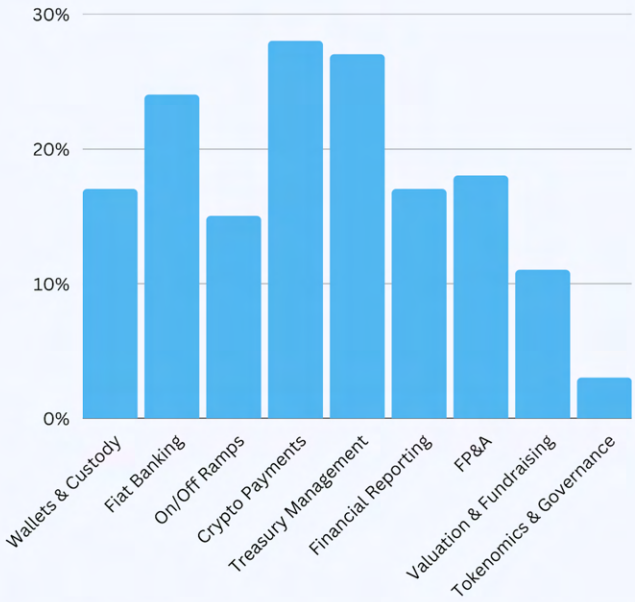


Fig 2. - What are some topics that you feel are under-addressed in the community for Web3 CFOs?

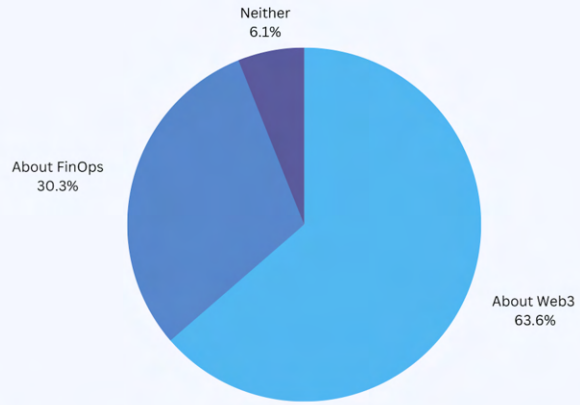


Fig 1. - How would you rate the biggest gaps in your knowledge when you first started as a Web3 CFO?

A common refrain we heard was the difficulty in **keeping up with the rapid pace of new technologies and applications:** from Layer 1s and 2s, to the alphabet soup of ZKPs, NFTs, EIPs and more.

Sifting through vast amounts of new information, and trying to understand and incorporate new decentralized applications (dApps) into their workflows is a challenge many CFOs face.

"Working full time in crypto means 9-12", said Simon Ho, COO of Australian crypto exchange, Coinstash. "There's just so much to learn", he explained.

In addition to the challenges of having to get up to speed about crypto, DeFi and other blockchain technologies, over 99% of CFOs at Web3 organizations said they **did not have formal on-boarding processes** when they started in their roles (Fig. 3)

"It was all self-taught" said one CFO. "Years of nail-biting trial and error", said another in an interview.

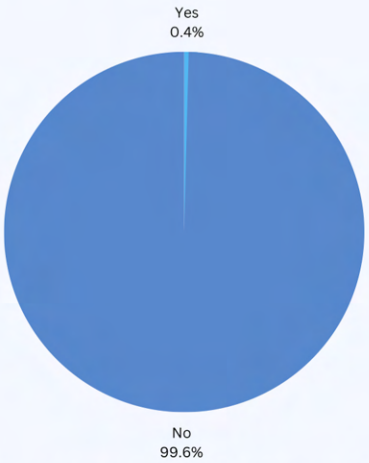


Fig 3. - Did you have any formal on-boarding process, or orientation as a Web3 CFO when you started your role?

"Traditional accountants have a hard time wrapping their head around concepts in crypto like swapping tokens on AMMs. Most don't even understand Etherscan."

- Jeff Ye Myat, COO, Bluejay Finance

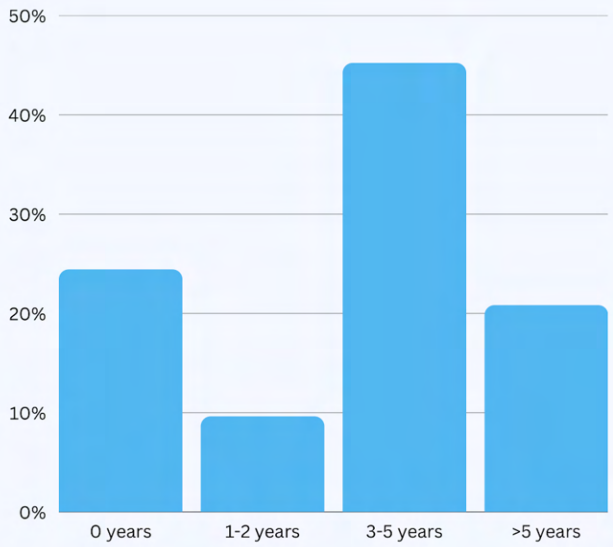


Fig 4. - How many years of experience did you have in a finance, accounting, or audit role prior to working in Web3?

Most Web3 CFOs tend to be hired for their experience in traditional finance or accounting roles (Fig. 4).

Nearly 76% indicated that they had some prior experience, while 66% had more than 3 years of experience in a finance role before joining a Web3 organization.

The gulf between the norms, concepts, and practices in traditional finance, and blockchain are also **a source of friction when working with external partners like accountants and auditors**.

"People who know Web3 ... hardly know finance, and vice versa", explained Modesta Masoit, ex- Finance director at DappRadar.

This would suggest that there may be considerable demand for greater education among traditional accounting, tax, and audit professionals.

Those who can understand the technology will be better-positioned to serve a growing segment of crypto-native clients.

2. LACK OF TOOLING

FinOps tooling in Web3 represents a tremendously underserved SaaS category, when compared with their counterparts in Web2 that many CFOs were familiar with in previous roles outside of crypto.

When asked about the availability of FinOps tooling, over 85% of Web3 CFOs polled said that it was "insufficient" compared to Web2 (Fig. 5).

"There ain't shit", wrote one CFO in the survey comments.

"Blockchain technology can help to automate accounting and financial reporting processes."

"Most ERP software that I was familiar with using did not work in crypto."

"We need better accounting tools that can query data across chains, without having to write code."

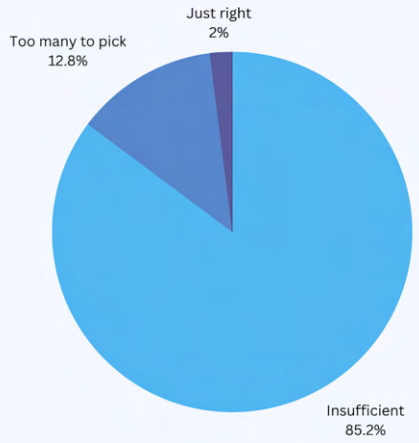


Fig 5. - How would you rate the availability of tools in the Web3 CFO's FinOps stack compared to Web2?

Yet, traditional accounting software common to Web2 companies are unable to meet the needs of the Web3 CFO.

There is **an urgent need for more crypto-native accounting tools** that can pull and label data from various blockchain networks, for financial reporting purposes.

The demand for no-code blockchain analytics tools was also a key issue highlighted.

Despite the existence of platforms like Dune Analytics, writing specific queries to meet the crypto accounting needs of CFOs still requires programming languages like SQL.

Few CFOs have the technical know-how, or the time to create customized reporting tools for their own in-house use.

The lack of appropriate tooling has led many Web3 CFOs to fall back on familiar, but painstaking manual reconciliations on spreadsheets, and using macros and pivot tables for financial reporting in crypto.

CHAPTER 2.0

Roles & Responsibilities

Defining your role is an exercise in thinking about what the most important activities are, and how you can add value in those domains.

Roles & Responsibilities of a Web3 CFO

As a CFO at a fast-growing crypto company, DAO, or Foundation, this is a time of tremendous opportunity. **Defining your role is an ongoing exercise** in thinking about what the most important activities are, and how you can add value in those domains.

Your role spans three domains: operations, compliance, and strategy.

1. OPERATIONS

In the operational domain, the finance function ensures that ongoing operations run effectively; **in support of other business functions** such as paying talent, or processing expenses incurred by the sales & marketing team.

2. COMPLIANCE

In the post-FTX era, there is also a renewed focus on the role that CFOs can play to provide visibility into an organization's financial health, and assurance to stakeholders by ensuring **compliance with tax, accounting, and other regulatory requirements**.

FinOps tools in Web3 like Request Finance can help CFOs to shape the way businesses manage their money by automating, and optimizing existing workflows while giving the entire organization a real-time view of their financial health.

3. STRATEGY

Yet, your role can also be strategic: **exploring pathways to profitability, generating measurable value, and establishing or improving critical processes**. While the operational role is an important one, CFOs are no longer relegated to merely supporting the company's operations, or controlling costs. Indeed, over the last few years, the CFO role has become increasingly strategic, thanks to the introduction of novel financial technologies.

In Web2, there has been considerable excitement around how companies can offer "embedded finance" services within their own platform. In Web3, the range of novel financial services and instruments are endless.

Empowered with new Web3 primitives, CFOs can also drive significant revenues with various yield-bearing treasury management instruments, open up new revenue streams and customer engagement touchpoints with NFTs, or help increase customer retention with novel payment tools.

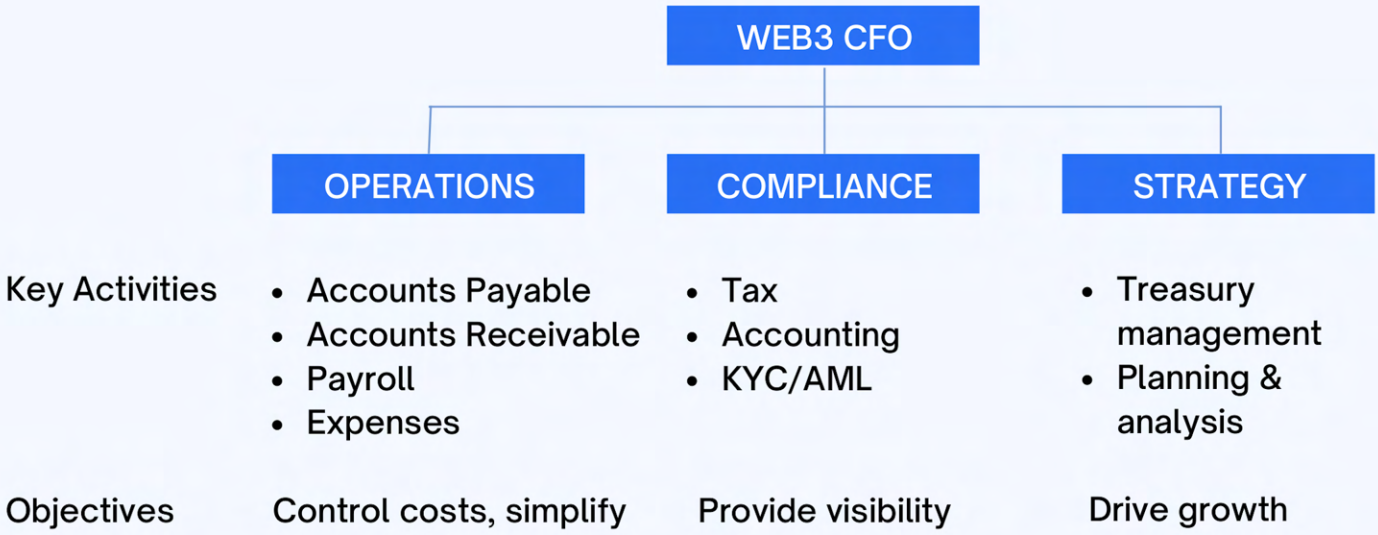


Fig. 6. - Overview of a Web3 CFO's Roles & Responsibilities

Web3 organizations deserve, and need better software tools to help finance and operations teams manage their day-to-day finance workflows. **Automation of repetitive processes like payments, and integrations with other applications** in both Web2 and Web3 are key to simplifying FinOps for Web3 teams.

These tools can also empower CFOs to add strategic value through better visualization and reporting of the organization's crypto asset values, and cash flows across different chains, token types, and platforms.

Blockchain technologies can allow every Web3 organization to have the transparency of a publicly-listed company. In some ways even more so, with the ability to monitor finances or mark assets to market values in real time, rather than quarterly.

As better tools and processes emerge, Web3 organizations can distinguish themselves not only on the basis of other business fundamentals, but also in how well their financial operations are run.

Despite the challenges facing Web3 CFOs, many remained optimistic about the **growing need for more finance professionals in the blockchain space**.

76% of Web3 CFOs estimate that the demand for finance, accounting, tax and audit professionals will grow over the next 12-24 months (Fig. 7).

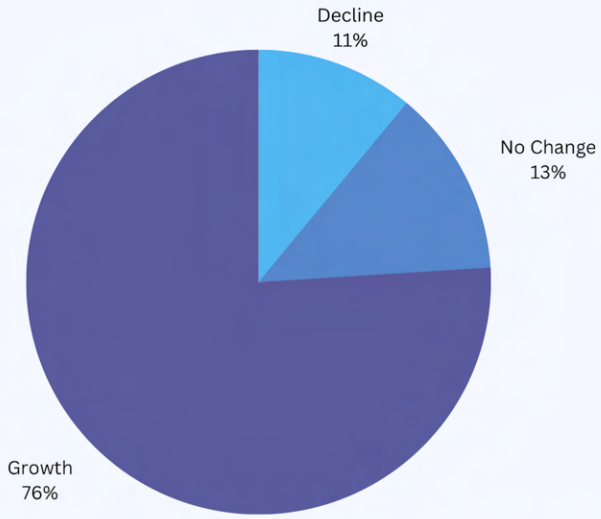


Fig 7. - How do you foresee the demand for finance, accounting, tax and audit professionals in Web3 over the next 12-24 months?

Bullish. 📈🐂

CHAPTER 3.0

Crypto Wallets & Custody

Understanding wallets, their different strengths and limitations, is key to managing your team's crypto assets.

Crypto Wallets & Custody

CRYPTO WALLETS, KEYS, & ADDRESSES

Wallets and keys are **the crypto equivalent of bank vaults** - where your funds cannot be moved without your consent. Understanding them is key to managing your team's crypto assets.

- **Crypto wallets** are software programs that store private and public keys, which are used to send and receive cryptocurrency respectively. Unlike regular wallets, your crypto always lives on the blockchain, which is a digital ledger that records transactions, and account balances.
- **Public keys and wallet addresses** are like bank account numbers, or wire transfer instructions you can share publicly to receive deposits.
- **Private keys** are like authorized signatures that allow you to send and withdraw money. They are used to "sign", or authenticate blockchain transactions. Crypto wallets use a seed/recovery/backup phrase to algorithmically create private keys. They must be safeguarded at all costs. Each seed phrase can also be used to generate multiple wallet addresses linked to it.

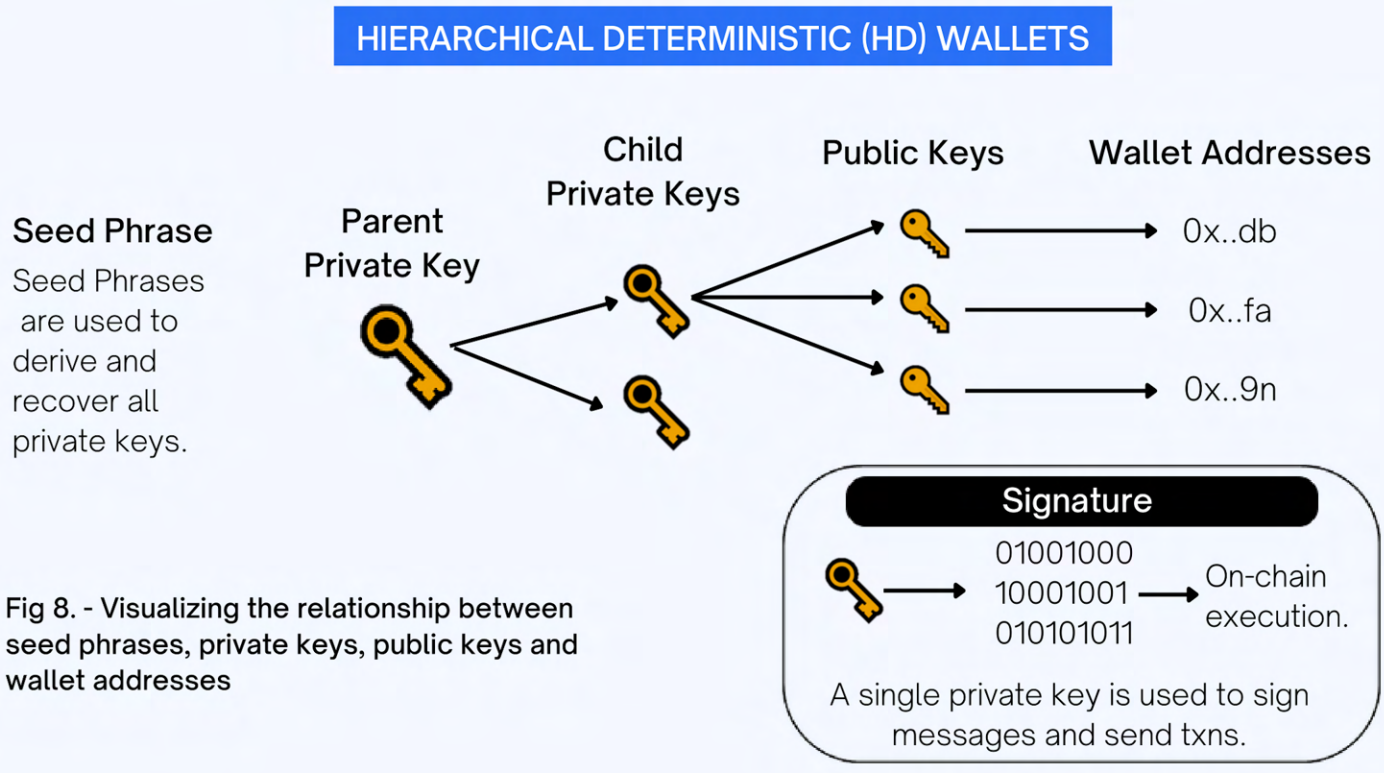


Fig 8. - Visualizing the relationship between seed phrases, private keys, public keys and wallet addresses

TYPES OF CRYPTO WALLETS

There are different types of crypto wallets. Each has its own advantages and disadvantages, allowing them to **play different roles, and meet different needs** in your crypto FinOps.

While most CFOs already likely have existing wallets in use at their organization, this section can still be relevant.

Understanding different wallets can help you **evaluate whether your organization's current crypto wallets are being used in a way that is fit-for-purpose**. For instance, if your company's entire annual payroll is being held on an centralized exchange's hot wallet, you may want to rethink that practice. "We've always done it this way" is a poor reason to maintain an existing process.

Here, we map out what we consider to be the most crucial distinctions between wallet types that you should consider when choosing to adopt wallets for your Web3 organization's needs.

IS IT CONNECTED TO THE INTERNET?

YES

HOT WALLET 🔥

Hot wallets are convenient because they allow you to quickly and easily access your coins.

They are the most common type of wallet, and are ideal for storing "petty cash" in crypto, or for trading on exchanges, and interacting with dApps.

However, because they are connected to the internet, they are also more vulnerable to hacking.

NO

COLD WALLET 🧊

Cold wallets are more secure, but they are not as convenient because you cannot access your coins as quickly.

The most common type of cold wallet is a hardware wallet: a physical device that stores your crypto keys. They are best treated as safe deposit vaults - used to secure undeployed assets.

Hardware wallets are very secure because they are not connected to the internet and are difficult to physically tamper with.

HYBRID WALLET 🔥🧊

There are also a number of crypto wallet providers that aim to give organizations the security of a hardware wallet, with the convenience of hot wallets connected to the internet.

For example, Ledger Enterprise stores all of your sensitive data, including governance rules, in Hardware Security Modules (HSM) which can enable a hot/cold setup.

An HSM is a physical computing device purpose-built for secure key storage and cryptoprocessing.

Operations like signing transactions can be made with keys while the keys reside within the secure hardware environment.

The transactions are verified using Personal Security Devices (PSD) like a bank account token, and signed by the Hardware Security Module (HSM) before being broadcast to the blockchain.

HSM-based wallets like Ledger or Trezor can be connected to a network, or they can also be used in offline mode to protect wallets that are completely disconnected from the internet.

As we will explore later in the Guide, the risk of signing a smart contract is that it could interact maliciously with the content of your wallet.

Hybrid wallets can allow CFOs to determine whether a specific wallet address will be cold or not, by deciding whether you will use it to sign transactions.

Organizational-grade solutions like the Ledger Enterprise also typically provide a SaaS-like platform.

This allows globally-distributed teams to operate from all over the world, and also to automate operations using APIs that connect to a variety of third party dApps and DeFi platforms.

WHO CONTROLS THE PRIVATE KEYS?

JUST ME

SELF-CUSTODIAL 👑

When you own and manage your own private keys, you alone have complete control over your assets.

This is in effect like keeping cash in a safe deposit box in your home.

However, that is not to say that there are no risks! You rely on your home's security systems, or the design of the safe deposit box. The a16z crypto blog has a detailed discussion on the risks of self-custodial wallets.

NOT ME

CUSTODIAL ⛓️

You are depositing funds into a crypto wallet whose private keys do not belong to you.

In effect, the institution which controls the private keys to the wallet is either acting as a trustee, or a borrower. The former cannot do anything with your assets - except as instructed, the latter can.

In many cases like FTX, a custodian may claim to be a trustee, but in fact is fraudulently using your assets in violation of that trust.

ME & OTHERS

MUTLI-SIG, OR MPC 🤝

Multi-signature (multi-sig) 🔑🔑🔑 wallets use different signatures generated by several private keys to sign transactions - like nuclear submarine missile launches in the movies requiring different keys held by different officers.

Multi-party computation (MPC) 🔑 -> 🧩🧩🧩 wallets split a single private key into multiple shards, or shares - like a jigsaw puzzle, split among different authorized signatories.

Note: Multi-sig, or MPC wallets are not always self-custodial. The custody is shared, because the keys, or key shards are not always owned by you alone.

Crypto custody is best represented not as a binary choice between self-custody, or completely relegating control to a third-party custodian.

Rather, custody of your crypto assets should be seen as **a spectrum consisting of both: (i) who, and (ii) how many people control access** to a wallet.

MPC vs Multi-sig

For most organizations, either a multi-sig, or MPC wallet is likely to represent **the best tradeoffs between security and useability**.

How can CFOs decide between a multi-sig, or MPC wallet? For the technically adroit CFO, a more detailed discussion can be found in a blog article written by Nichanan Kesonpat for the 1kxnetwork.

But for those who want the TL;DR - here is a practical summary of some key differences between the two types of wallets:

PROS 👍

MPC

👍 **No single point of failure.** A whole private key is never concentrated on one device at any one time. There is also no seed phrase.

👍 **Adjustable signing schemes**. Organizations can dynamically adjust approval signing schemes while maintaining the same wallet address. Just like changing the authorized signatories on a corporate bank account without changing the account number.

👍 **Granular Access Controls**. Organizations can assign an unlimited number of transaction approvers to a policy and delegate permissions that reflect organizational roles and security measures (timelocks, multi factor authentication, fraud monitoring).

👍 **Lower Transaction Costs.** MPC wallets are represented on the blockchain as a single address, for which gas costs are the same as regular private key addresses. This can be important for users who have hundreds of transactions per day.

MULTI-SIG

👍 **No single point of failure**. Multiple signatures are needed to execute a transaction.

👍 **Upgradable signing schemes.** Can change their signature scheme to more gas efficient, or quantum-resistant ones. They could also use secure enclaves on iOS and Android devices, turning phones into hardware wallets.

👍 **Programmable Access Controls**. Users can define different policies, set timelocks, spending limits, automations (harvest farming rewards, limit orders).

👍 **Extensible.** Thanks to the composability of smart contracts, wallet developers can create an app store for new features like NFT lending frameworks, DAO voting modules, and DeFi asset management services.

👍 **Programmable Recovery.** Wallets can offer several options to recover funds into the smart contract itself. For example account abstraction, social recovery, or deadman switches.

PROS 👍

MPC

👍 **Blockchain Agnostic.** Key generation and signing relies on off-chain cryptography. Extending compatibility to new blockchains is straightforward as the wallet needs to simply be able to generate signatures using the algorithm recognized by that chain.

MULTI-SIG

👍 **On-Chain Accountability.** On-chain signature authorization policies make it explicit which keys were used to sign a transaction, making operations more transparent and straightforward to audit in case something goes wrong. MPC signing happens off-chain.

CONS 👎

MPC

👎 **Off-Chain Accountability.** Signing authorization policies and approvals are managed off-chain, so these custom rules are still subject to centralized failures. Off-chain rules and signing hinders transparency and calls for more rigorous operational audits.

👎 **Incompatible with most conventional wallets** like Ledger and Trezor as there is no seed phrase or whole private keys stored on a single device, but MPC hardware wallet options like Cypherock are available.

👎 **Mostly siloed, bespoke products**. Many MPC libraries and solutions are not open-source, so there is no easy way for the ecosystem to independently audit and integrate them, or conduct post-mortems if something goes wrong.

MULTI-SIG

👎 **Higher transaction fees.** Smart contract wallets come with higher fees than regular, single address transactions as multiple signatures need to be verified. Actions such as adding/removing owners and changing the threshold also requires an on-chain transaction.

👎 **Not universally supported.** While smart wallets can deploy on any EVM chain at the same address, they need bespoke implementation on non-EVM chains.

👎 **Incompatible with non-upgradeable contracts.** While EIP-1271 allows applications to sign on behalf of contract wallets, it is still not universally supported and cannot be added to non-upgradeable contracts.

Evaluating crypto wallets

With hundreds of options available, it can be challenging to know which crypto wallet is right for you. As a CFO, the stakes are even higher. You need to be sure that you're choosing a wallet setup that will protect your company's crypto assets and give you the peace of mind you need to focus on your job.

To help you cut through the noise, you must first be able to understand what's important to you, before looking at how the different wallet types map onto those needs. It's important to remember that you can **use different wallets to meet different needs**.

When choosing a crypto wallet, consider the following factors:

1. SECURITY 🔒

Security is paramount when choosing wallets. This includes who controls your private keys, and how transactions are approved - which affect your ability as a CFO to implement **access control management, spending policies, limits, and permissions**.

Other security measures you should consider in a crypto wallet include fraud detection and prevention features, two-factor authentication (2FA), or seed phrase recovery.

The track record of a wallet, including time in the market, or previous security breaches or hacks should also be noted.

2. CHAINS ⛓️ & TOKENS 💰 SUPPORTED

The wallets you choose should **support a wide range of blockchain networks, as well as token types** like non-fungible tokens (NFTs). The more extensive the support for different chains & currencies, the simpler your organization's wallet management will be.

3. ADDITIONAL FEATURES 💪

Wallets increasingly offer additional features to increase their usability, including the ability to convert or "swap" token types within the wallet, offering native staking, or other features like making batch payments.

These features should help to **simplify and automate your FinOps processes** in crypto.

4. COST & FEES 💸

Depending on which wallets you use, they either have **one-time upfront costs, or ongoing fees charged to users**. Hardware wallets typically only have upfront costs. Custodial, or multi-sig wallets may charge ongoing fees for custody, on/off ramp fees, transaction fees, conversion fees, staking fees.

5. PRIVACY 🤫

Privacy is a slightly contentious point, especially in the wake of the US Treasury's sanctions on the popular cryptocurrency mixer, Tornado Cash. However, there are legitimate reasons why CFOs may want to have optional privacy-preserving transactions, like when making payroll.

Web3 CFOs need to **balance the need for privacy with the need for compliance with accounting and financial reporting requirements.** This can be a challenging task, as privacy-preserving crypto payments may make it more difficult to track and report on financial transactions.

This may involve **using specialized privacy preserving dApps while implementing strict internal controls and processes** to ensure that their organizations are able to support privacy-preserving crypto payments while also meeting their financial reporting obligations.

Here's a handy checklist for CFOs to use when evaluating crypto wallets:

CUSTODY

- Where are my private keys / key shares / key shards? Who will own them?
- What % of my private keys or key shards do I control?
- Can I have instant access to my assets and execute transactions at anytime, from anywhere?
- Do I have a strong and robust recovery protocol?
- Is the governance engine secure? How?
- What happens if the service provider stops operating?
- What happens if servers are down?
- Has the technology provider been audited by industry security experts?

OPERATIONS

- Does the solution support the blockchains, and token I want to use?
- Are there transfers/transactions limits, or minimums?
- Are there fees involved?
- Does my setup scale across team and projects?
- How can I connect my accounts to my backend systems?
- How can I automate my workflow to be more efficient?
- Do I have access to Web3 use cases (NFTs, DeFi, staking)?
- Can I implement privacy-preserving solutions?

GOVERNANCE

- What are the different user roles and how do they interact?
- What are my teams and my back office allowed to do?
- Who has access to what?
- How can I prevent internal collusion?
- Can I create and manage whitelists?
- Can I implement governance policies and user access rules when I want? How long does it take?
- Can I choose who will be involved in the approval process for all transactions?

FINANCIAL REPORTING & COMPLIANCE

- How can I track my administrator and operator activities?
- How can I meet financial reporting and other audit requirements?
- Is the technology recognized and approved by regulators?
- Can I collect data from various chains and token types easily and with clarity?

Managing crypto wallets

Tools are only as good as their users. The most sophisticated kitchen stocked with top-of-the-line equipment, and the finest ingredients, is unlikely to produce the same quality of food when staffed with part-time, fast food fry cooks.

More than just knowing what types of crypto wallets there are, crypto CFOs would also do well to know how to **use them in a way that is fit-for-purpose**.

Regardless of which crypto wallets you choose to use, here are six universal best practices that you can consider implementing at your organization:

BEST PRACTICES

1. ALWAYS HOLD MOST ASSETS IN SELF-CUSTODY 👑

Self-custody means survival. When you deposit assets into wallets like a centralized exchange, they have complete access to and control of your private keys, and your funds.

Remember: **deposits are liabilities owed to depositors**. The balance shown on your deposit account with any institution or platform, is merely a reflection of the outstanding debts owed to you, not monies you actually have control over, or assets held in reserve. Debts are promises to repay. Promises are easily broken.

Third-party custody exposes your organization to **serious counterparty risks**. Such risks include, but are not limited to:

- Halting or limiting of withdrawals due to solvency or liquidity issues,
- Freezing of funds pursuant to law enforcement actions or court injunctions,
- Hacks by external actors, or malicious insiders.

Such events may negatively impact your organization's cash flows, or worse still - hit the balance sheet if the **funds are unrecoverable, or uneconomical to recover via litigation**. In a memo circulated to the British War Cabinet in 1945; economist John Maynard Keynes wrote: "Owe your banker £1,000 and you are at his mercy; owe him £1 million and the position is reversed". To this, we might add, "But if your bank owes someone else £10 billion - you are all kaput".

Each time a centralized exchange (CEX), or centralized finance (CeFi) lending platform runs into financial trouble, they bring down with them all the fund managers, companies and their employees whose crypto assets are stored on their custodial wallets.

In contrast, despite the string of collapsed CeFi platforms in 2022, including Celsius, Hodlnaut, FTX, and DCG, virtually none of the over 2,300 teams using Request Finance to manage more than a quarter of a billion dollars in crypto payments, were materially impacted.

This is thanks to the fact that **using decentralized apps (dApps) like Request Finance requires you to use your own self-custodial wallet**. That means there can never be paused withdrawals, or frozen funds - ever.

Money is to organizations, what blood is to our bodies. Its circulation maintains the essential functions that keep us alive and healthy. Deprived of it, irreparable damage, and death follows quickly after.

2. USE DIFFERENT CRYPTO WALLETS FOR DIFFERENT PURPOSES 👛

It is possible to generate multiple wallet addresses which are linked to the same seed phrase, and private key. That would be like having several bank accounts with the exact same login details. But this is not always ideal, particularly when it comes to resilience to hacks, or implementing access controls.

Dividing up the company's assets into **multiple crypto wallets with different seed phrases** is ideal for three reasons:

1. CLARITY

Your company's monies serve different functions: there's the revenue you bring in, the money that goes out to pay the bills, and the retained earnings you set aside to be invested externally or to grow the business.

Lumping it all together into one wallet can make it difficult to have visibility into your organization's crypto finances.

Consider maintaining **at least three different crypto wallets**: one for receiving payments, another for paying expenses, and a third wallet that acts like a savings account (Fig. 9 below).

2. CONTROLS

Having different crypto wallets with different private keys, helps you implement proper financial controls at your organization.

There are numerous case studies of criminal breaches of trust by rogue employees absconding with funds.

Financial controls are crucial for crypto companies. In the words of the American rapper, Kanye West, "**no one man should have all that power**".

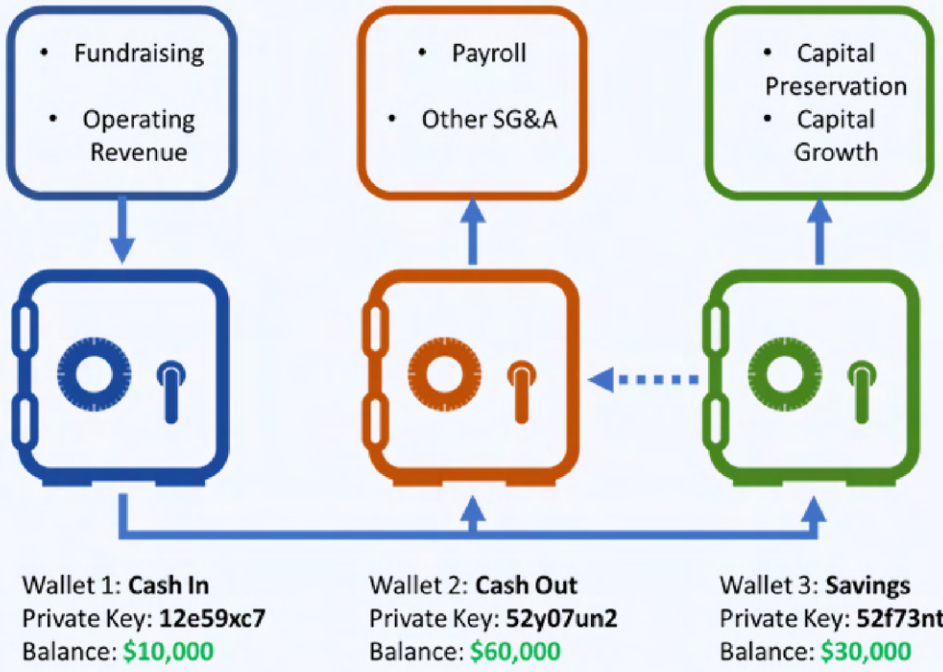


Fig 9. - Example illustrating $100,000 in crypto, held across different wallets,. Arrows show flows of funds between, and in and out of wallets.

This makes it easier to track your cash flows, which is all useful data when it comes to preparing financial statements, or planning for the future.

To report your crypto holdings to tax agencies, it is critical to **have separate crypto wallets for each taxable entity**.

It is common for web3 organizations to have more than one operating entity. For instance, Protocol Labs is a research, development and deployment laboratory that spins off independent projects including IPFS, Filecoin, libp2p, and many more.

Avoid the commingling of funds and transaction flows between different entities to simplify your financial reporting in crypto.

3. SECURITY

Billions of dollars in crypto have been lost to hacks over the years, due to unsecure crypto wallet management.

In 2018 alone, hackers stole private keys controlling over a billion dollars' worth of cryptocurrency from hot wallets.

There is a very real possibility of someone hacking your device, communication software, or crypto exchange to obtain your wallet's private keys.

A person with your private keys can drain your company's funds. If your seed phrase becomes somehow compromised, **all the wallet addresses generated using that seed phrase are compromised**. (Fig, 10 below)

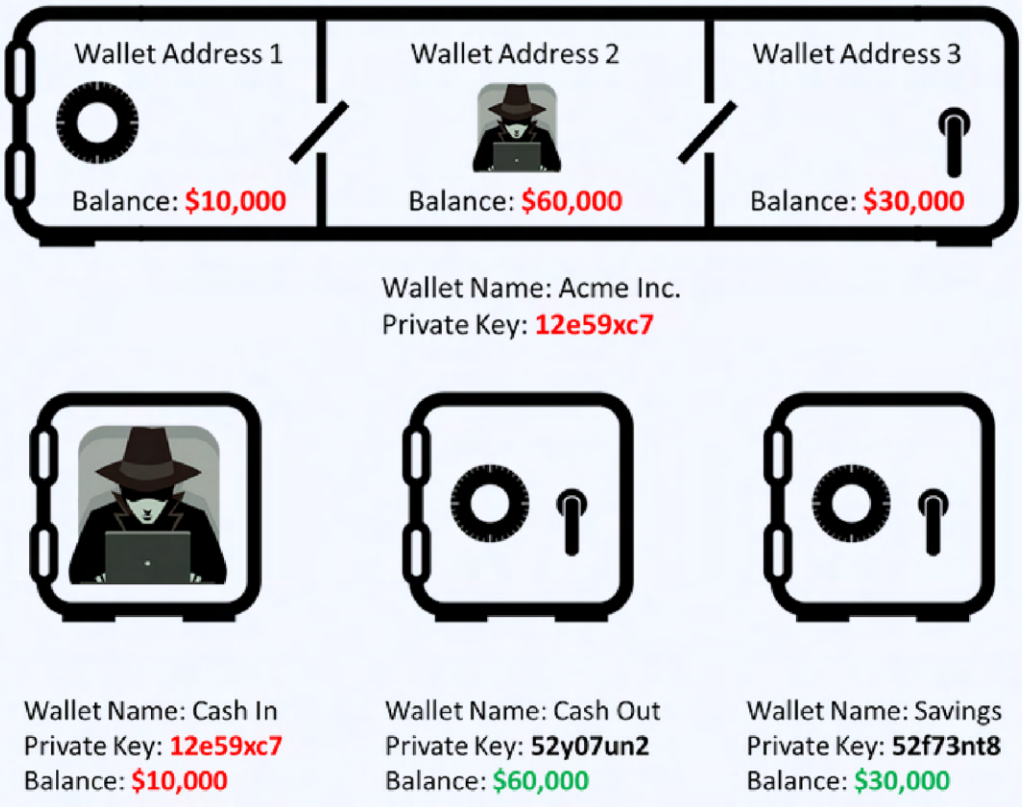


Fig 10. - Assets secured by more private keys means greater security.

Diversification is critical - both in managing your organization's investment portfolio, and in storing your company's crypto inventory. Never put all your eggs in one basket.

Limiting the amount of funds stored in any one wallet **limits the damage any one hack can have on your company's overall crypto inventory**.

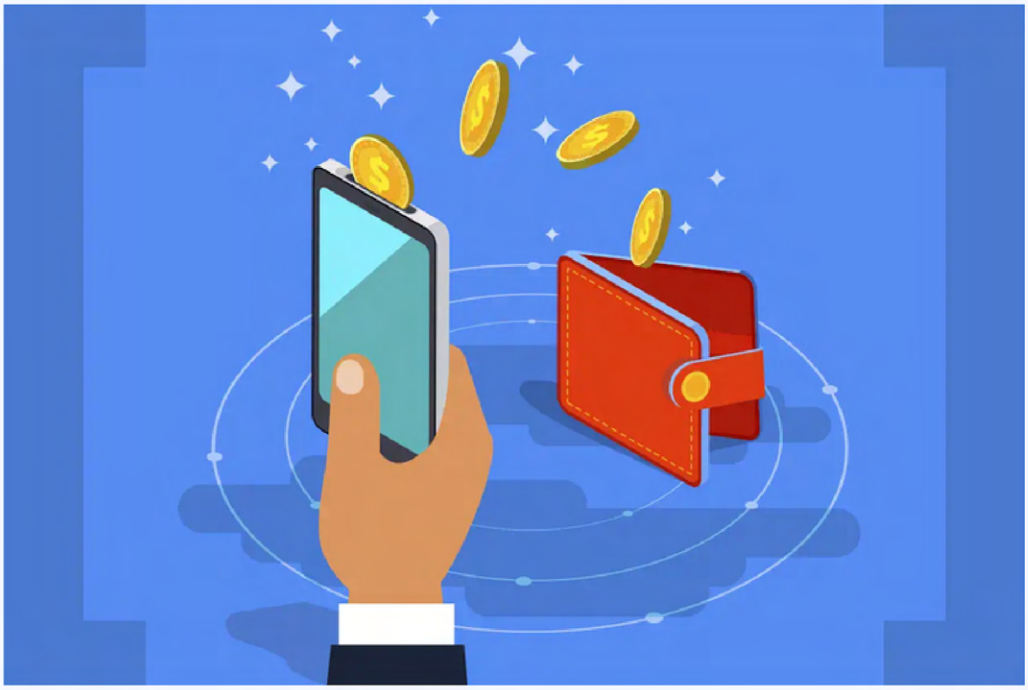
3. USE A MIX OF WALLET TYPES 👨‍🍳

CFOs may understandably find themselves struggling to pick between the different wallet types. To borrow the famous Spanish quip from a 2005 TV taco commercial: "Porque no los dos?" (Why not both?).

Both hot and cold wallets have strengths and weaknesses that can compliment each other. So why not use both hot and cold wallets in your organizational setup? Cold wallets are the equivalent of a safe vault at the bank or at the company's office. Hot wallets are the equivalents of petty cash in your wallet. You likely already have both. The same could well apply for the wallets you choose to manage your organization's crypto treasury.

Given the trade-offs when using either type of crypto wallet, **a combination of cold and hot wallets is usually ideal**. This allows you to have the accessibility of a hot wallet for processing accounts payable, and the peace of mind and security of a cold wallet to safeguard the dormant portion of your crypto treasury. Each crypto wallet can be designated to be used for a specific purpose, optimizing for either ease of use, or security depending on the specific use case for a wallet.

Similarly, when choosing between a multi-sig, or MPC wallet, if costs permit and there are compelling operational reasons to justify the use of both, CFOs can consider **experimenting with different wallet technologies**.



The cryptocurrency management trilemma can be characterized as the challenge of solving for **Security, Usability, and Accountability.** An organization's treasury must be stored and managed to achieve all three key attributes, which are often in conflict.

There is no such thing as a perfect wallet, even though some may appear to come close. What CFOs could do is to maintain a combination of wallet types which, as a system, optimizes for all three attributes as much as possible. More important than just the crypto wallets you pick, are **the processes and controls that you put in place** at your organization.

4: HAVE A CLEAR SYSTEM FOR MANAGING YOUR ORGANIZATION'S CRYPTO WALLETS 🤷

1. DOCUMENTATION

Have clear oversight on your oragnization's wallets. Setting up multiple crypto wallets is easy. It can simplify your financial reporting and safeguard your crypto assets.

The problem is that even some of the largest crypto companies often neglect to maintain:

- a record of all their organization's wallets,
- the designation and purpose behind each wallet,
- each wallet's authorized signatories, and
- a clear process for approving the adoption of new wallets

You can also consider maintaining a living document on your organization's knowledge management system (KMS) like a Notion page.

It should clearly define the existence and reason for each wallet, with its accompanying wallet address.

Especially for larger organizations which are subject to audit requirements, this is crucial for simplifying the financial reporting process.

2. APPROVALS

Have a clear process for approving new wallets. When reviewing requests for new wallets to ensure they meet your organization's custody, security, and workflow requirements.

Ask questions like:

- Why does this wallet need to exist?
- Who should have access to this wallet?
- What is the expected flow of funds into, and out from this wallet?
- How should crypto transactions from this wallet be labeled in the organization's chart of accounts?

In FTX's Chapter 11 bankruptcy filings, its newly appointed CEO, John J. Ray III noted:

"The FTX Group did not maintain centralized control of its cash. Cash management procedural failures included the absence of an accurate list of bank accounts and account signatories"

3. RELATED PARTIES

Map out risks among your authorized signatories and their wallets. Web3 organizations must strive to develop or employ solutions to mitigate conflicts of interest, key man risk and safeguard their community's assets.

A multisig or MPC wallet eliminates risk from overreliance on any one individual. If one key holder tried to funnel the multisig wallet's assets to a personal account, other holders would presumably refuse to sign the transaction thus nullifying the transaction and preserving the funds.

But they remain **vulnerable to collusion among interested, or related parties**.

The more independent private key signatures required, further protects the multisig wallet. Olympus DAO, for example, requires a four-of-eight multisig which requires "a quorum of 4 to authorize any transaction like engaging in DAO swaps." Olympus identifies the public key of each signatory for additional transparency.

The treasury is the beating heart of any organization. Left in the hands of bad actors, all its funds could be drained with a few clicks - leaving it with serious going concern issues.

When it comes to safeguarding your crypto treasury and having controls for on-chain payment authorizations, you can never be too safe.

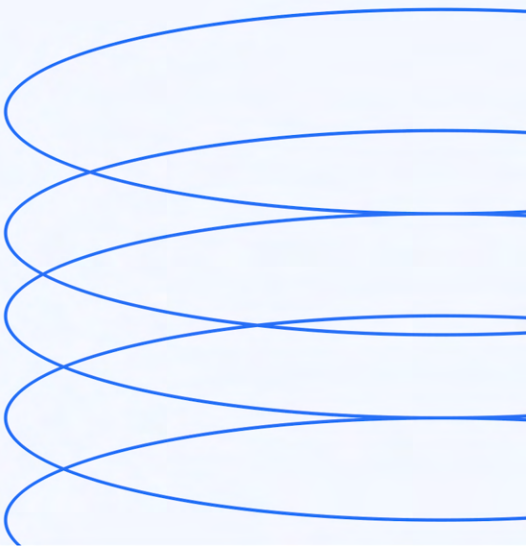
4. PORTFOLIOS

Using a portfolio tracker can help to keep track of your different crypto wallets, their balances and transaction flows across different blockchain networks.

Nothing is more frustrating for a crypto accountant than to prepare financial reports, only to find out that they didn't see every wallet they needed.

With multiple wallets to manage, it is critical that you are able to **keep an eye on all the different account balances**, and know where your crypto is coming from and going to.

Portfolio trackers monitor the balances across different wallets that you own.



5. SECURELY MANAGE YOUR WALLETS' SEED PHRASES 🌱

With multiple wallets, comes the need to secure multiple seed recovery phrases. If those twelve words represent total control over your funds, how do you keep them safe and accessible at the same time?

There will always be **a tradeoff between security vs. convenience**. That balance is something that you must judge to be appropriate for your organization's size, and operational workflows.

1. ACCURACY

Record your seed phrase accurately. Ensure that you preserve their exact spelling, and the sequential order in which they were given.

Never change the order of the words, or their spelling (e.g. "color" =/= "colour").

2. SECURE STORAGE

Store your seed phrase somewhere safe. One very powerful way to secure a recovery phrase would be to split it between safe deposit boxes in multiple locations (making sure there's redundancy in case something were to happen to any of the locations). Obviously this is not very convenient.

Some people use specialized services like Cryptosteel to engrave recovery phrases into durable materials like stainless steel.

For many people, simply writing your recovery phrase down and keeping copies in more than one safe location is a solid approach.

Some services offer to store an encrypted version of your recovery phrase in the cloud like Google Drive or iCloud. You may also consider keeping a copy of your recovery phrase somewhere safely offline.

3. BROWSERS

Use different browsers. This option is as straightforward as it sounds: if you've only got two or three seed phrases to manage, then you can simply install your web wallets in several different browsers, and use a different browser for each one.

Given the open-source nature of the modern web, there's not a definitive listing of browsers that any given browser wallet will or won't work in.

4. BROWSER PROFILES

Use different browser profiles. The easiest way to manage multiple wallets is by using browser profiles. Common web browsers like Chrome, have instructions available here, and the steps are fairly simple.

Now all that's left to do is to open a browser window in that new profile, install the browser wallet from like you normally would, and follow their instructions to restore your wallet from your seed phrase–or create a new one.

This will allow you to juggle between wallets with ease, as you can have multiple browser windows open, each one in a different profile, at the same time.

5. DISK ENCRYPTION

Enable full-disk encryption. To keep your computer and its contents as safe as possible from someone with physical access to your machine (e.g. for technical support), we recommend you enable full disk encryption on your computer.

On a Mac this is the FileVault feature. On Windows, you can enable BitLocker.

With full disk encryption, an attacker with physical access to your computer should not be able to extract any of its contents, including any cryptocurrency keys you have stored throughout your disk, but also site passwords, banking info, and other sensitive information.

As long as you have your recovery phrase, you have your crypto. If you lose a hardware wallet on a bus or break a phone containing a software wallet, you haven't lost your crypto — you can simply enter your recovery phrase into another wallet.

6. OBSERVE CYBER HYGIENE 😷

Keep in mind that while crypto wallet companies can try as hard as they can to design robust security systems, your systems are only as safe as your people are.

1. SMART CONTRACTS

Avoid interacting with malware, or risky smart contracts. Smart contracts that have not been audited, or tested by time and use are vulnerable to hacks.

Any interaction with a blockchain via a smart contract requires the use of software clients, which are vulnerable to bugs, exploits, and malware.

Your development team must thoroughly understand the client-side architecture of the smart contract, so that any client-side risk can be minimized.

Not doing so can run the risk of not only a lapse in data security, but "mistakes" in the execution of the contract that can result in lost funds.

Implement **reasonable and necessary data security practices**. This should include basic practices like software updates, security vulnerability patch protocols, password and security access managers.

Additionally, you could also consider **ongoing operational intelligence** on the actual blockchain to avoid potential vulnerabilities.

2. PHISHING & FRAUD

Screen for scammers. That does not mean being paralyzed by paranoia, but treating every interaction with a healthy dose of skepticism - especially when payments, or disclosing sensitive information is required.

"Social engineering" attacks are often used to bypass sophisticated technical controls put in place. Instead of trying to pick a well-designed lock, hackers can simply **trick one of your organization's members into handing over the keys**.

While it sounds like a tired cliche from every movie jailbreak scene, hundreds of millions of dollars have been stolen from tech giants like Facebook and Google, large global banks like the Oversea-Chinese Banking Corporation (OCBC), and even United States' Government Agencies.

One of the most damaging forms of social engineering attacks is Business Email Compromise (BEC). According to the FBI's Internet Crime Complaint Center (IC3), more than $26 Billion was lost to BEC scams in the last four years despite making up only 7% of spear-phishing attacks.

BEC is a specific type of phishing that relies on social engineering to trick people by **impersonating an authoritative figure within a company, or a trusted external partner**.

A common tactic is **fraudulent invoices**. Scammers pretend to be a vendor requesting payment for services performed for the company.

Often, this type of attack will masquerade as one of an organization's actual suppliers and use a realistic-looking invoice, but with the bank account details or crypto wallet address of the scammer.

The challenge with billing is that the team members who incur the bill, are typically not involved when the company's finance team reviews and pays invoices.

That makes it difficult for finance teams to verify if an invoice is legitimate or fraudulent, which ends up in legitimate bills not being paid on time, or worse - paying fraudulent invoices.

Shark Tank angel investor, Barbara Corcoran, once lost over $388,000 from invoice fraud. The fraudster used a spoofed email address to deceive Barbara's bookkeeper into wiring the money. The scam was discovered only when the bookkeeper copied Barbara's assistant in the reply email.

Scammers are also eager to target crypto payment apps without fraud detection tools.

For instance, in October 2022, security researchers from Japanese cybersecurity vendor Trend Micro uncovered a wave of fraudulent invoice scams on PayPal impersonating well-known crypto companies like Stellar XLM, Bitcoin Exchange, Terra Luna Classic, Oasis Network and TrueUSD.

To protect enterprise users from invoice fraud, Request Finance's crypto invoicing app allows you to require vendors to cc multiple people on invoices that you receive.

That way, your finance team can check with other team members on cc to ensure that a bill is legitimate. This should both protect you from billing fraud, while also ensuring your company's bills are paid on time.

If you've been receiving unsolicited invoices that appear to be fraudulent, you can also block the issuer of those invoices.

Doing so will prevent them from sending you fraudulent invoices in the future. It also helps us identify suspicious issuers.

CHAPTER 4.0

Fiat Banking

Going completely bankless is not always possible. Choosing a bank that can support your fiat payment needs is tough, but crucial.

Going bankless is hard

Someday, blockchain payment rails will dominate payments, stablecoins will have replaced fiat currencies, tradable assets are tokenized, and decentralized finance platforms will stand where banks and other financial institutions once used to.

That day is not today.

The reality for some time to come, is that decentralized finance will continue to exist alongside their traditional finance counterparts. Remember that the gold standard dominated global finance from c. 1873 until the Nixon shock in 1971. That's nearly a century! It's predecessor, the silver standard, lasted even longer: starting with the Sumerians c. 3000 BCE until 1873 - nearly 4, 872 years.

Today, traditional institutional investors who participate in your equity round may want to wire money in fiat. Your employees may prefer to receive a portion of their salaries directly in fiat currencies to meet daily expenses. More commonly, you will find yourself having to make purchases with merchants or vendors (normies) that only accept fiat.

Choosing a bank that can support your fiat payment needs is crucial.

BEST PRACTICES

The term "crypto-friendly" bank is somewhat of a misnomer. Few global banks today are truly friendly to crypto. This includes banks who may offer crypto custody or trading services in their private banking departments.

Much of this has little to do with leadership attitudes, and more to do with the risks or cost it imposes on banks' ability to meet the regulatory requirements to keep their licenses.

This introduces serious challenges, and operational risks for your Web3 organization. However you choose to manage your organization's fiat payment needs, here are three best practices to consider:

1. BANK USING SPECIAL PURPOSE ENTITIES 🏛️

Typically, when opening a corporate bank account, you will be required to declare whether or not the business deals in cryptocurrencies. A declaration in the affirmative is highly likely to create problems as the Uniswap Labs founder and CEO, Hayden Adams, discovered.

And of course, making untruthful representations to your bank is inadvisable either. So how do you navigate this conundrum, if you cannot go completely bankless?

When speaking to crypto CFOs, we found that most of them had to **set up a bank account under an Special Purpose Entity (SPE) registered as a consulting or technology company**. It is this bank account that then serves your organization's fiat banking needs.

Consider the following hypothetical Web3 organizational chart, reminiscent of many others in the space (Fig. 11 below).

At the top is a non-profit foundation that manages the protocol layer. Below that is an affiliated, or wholly-owned subsidiary that develops dApps or other spinoff technologies on top of the protocol.

CPL Corporate Services Ltd could be a distinct SPE. It is not a subsidiary of any companies that deal in crypto. Instead it can have **service-level agreements (SLAs), and covenants** with all the other entities in the chart.

Contracts with employees, service providers, or investors that wish to deal with the main organization in fiat can be either novated to, or signed with this SPE instead.

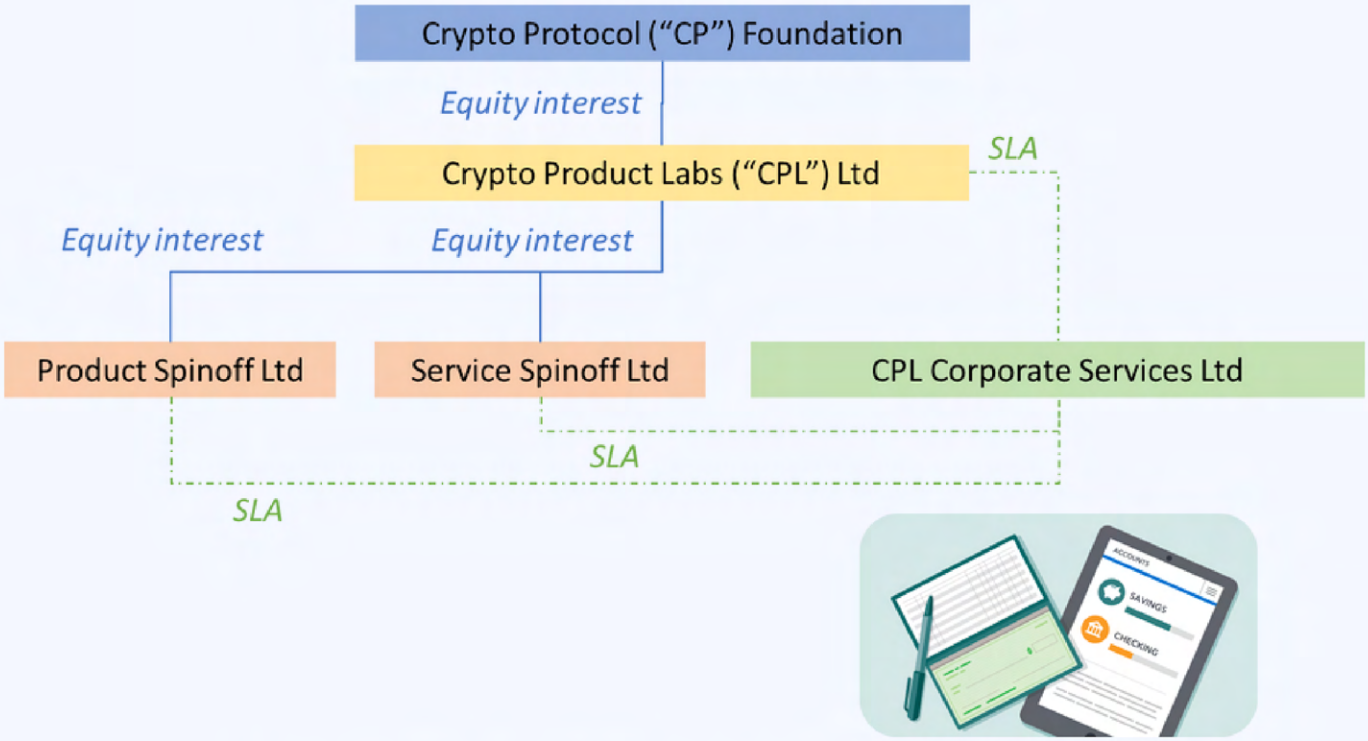


Fig 11. - Organizational chart of a typical Web3 group of companies

For example, employees wishing to work for CPL Ltd could be hired under the SPE, which in turn has **an agreement to be an employer of record (EOR)**, and manage payroll services for CPL Ltd.

This SPE could also have debt covenants that extend interest free credit lines to other entities, effectively allowing it to pay operating expenses in fiat like cloud-hosting fees.

Note: seek advice from relevant Qualified Persons concerning your organizational structure, and other related matters like banking, trusts, subsidiaries, etc.

2. USE NEOBANKS & FINTECH BANKS

Smaller, regional or local banks may be more open to on-boarding companies that deal in crypto. However, these banks may have a more limited range of services that may hamper your banking needs. For instance, a smaller bank may not have convenient online banking services, or may not support international payments.

Alternatively, you can consider **Non-Bank Financial Institutions (NBFIs) like fintech banks, or neobanks** like Revolut. These companies tend to be more open to taking on risks that their banking partners, or other traditional banks would ordinarily refuse to.

For instance, Aspire is a fintech platform based in Singapore - where many Web3 companies, DAOs, and Foundations have set up, owing to its longstanding enterprise-friendly environment. Aspire has helped to incorporate and bank thousands of Web3 organizations, and even has a liquidity pool on GoldFinch — an uncollateralized DeFi lending protocol.

However, fintechs and neobanks run on traditional banking rails, and are **subject to many of the same service limitations and failure points**. These include:

1. CENSORSHIP

Nobody cares about censorship - until they become its victims. In 2020, 1,392 complaints were made against Monzo for freezing accounts without warning. Revolut withheld tens of thousands of dollars without explanation. Resolver froze more than 1,000 accounts, often without warning in 2021. In September, Paypal and Venmo were accused of shutting down the accounts of an LGBT organization.

More recently, Paypal updated its terms of service agreement to authorize deductions of $2,500 fines from users' accounts. Around the same time, Flipper Zero, a successful Kickstarter-funded hardware hacking tool, accused PayPal of freezing $1.3 million in backer's funds.

Many NBFIs also consider crypto-related businesses to be high-risk. This is typically stated in their terms of service agreements, which are subject to change without prior notice.

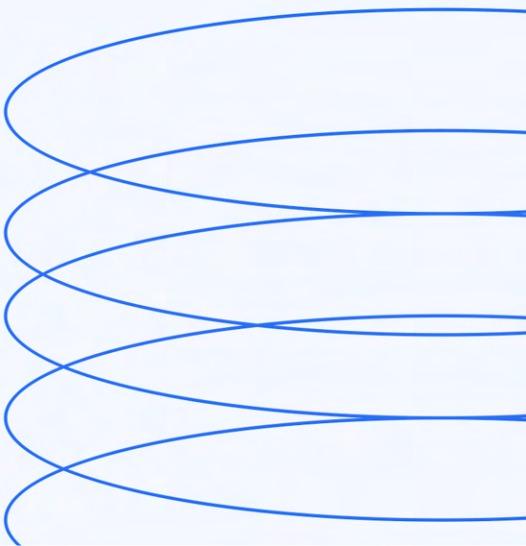
For instance, in November 2022, Starling Bank blocked all card payments to crypto merchants and crypto-related bank transfers over alleged fraud concerns.

2. COST & SPEED

Fintech platforms ultimately rely on legacy banking rails, and payment networks.

While they are quick to advertise low, or no fees, what is hidden in the fine print is that:

- there are low holding and transfer limits on non-enterprise accounts
- currency conversion rates are poor, or
- same-day settlements for cross border payments will typically be far more expensive than relying on crypto rails, and other off ramp methods (see following section for more).



3. SERVICE COVERAGE

Blockchain ledgers are born global: banking services are not. While a good many fintech platforms may serve most major currencies and markets, their coverage and penetration can vary considerably.

In contrast, when you use blockchain rails for payment, you will never need to ask the question: “Is it available in your country?”.

Fintech banks and payment processors have also **withdrawn service coverage from entire populations**, after deciding that servicing a particular region or country is not economically viable (Fig. 12). These can be incredibly disruptive for businesses.

It is difficult to overstate the potential of having a borderless, programmable, internet-native financial system based on blockchain payment networks, and DeFi versions of traditional financial institutions.

While the advent of mass adoption is still some time away, it is worth remembering that the internet too, transformed industries in ways people could not initially comprehend.

Famously, Clifford Stoll, an American astrophysicist and tech pundit scoffed at online courses, digital newspapers, and e-commerce in 1995.

As blockchain technologies mature, and industry players focus on building useable platforms, we may someday look back on the skeptics in the same light as Clifford Stoll's greatest career *faux pas*.

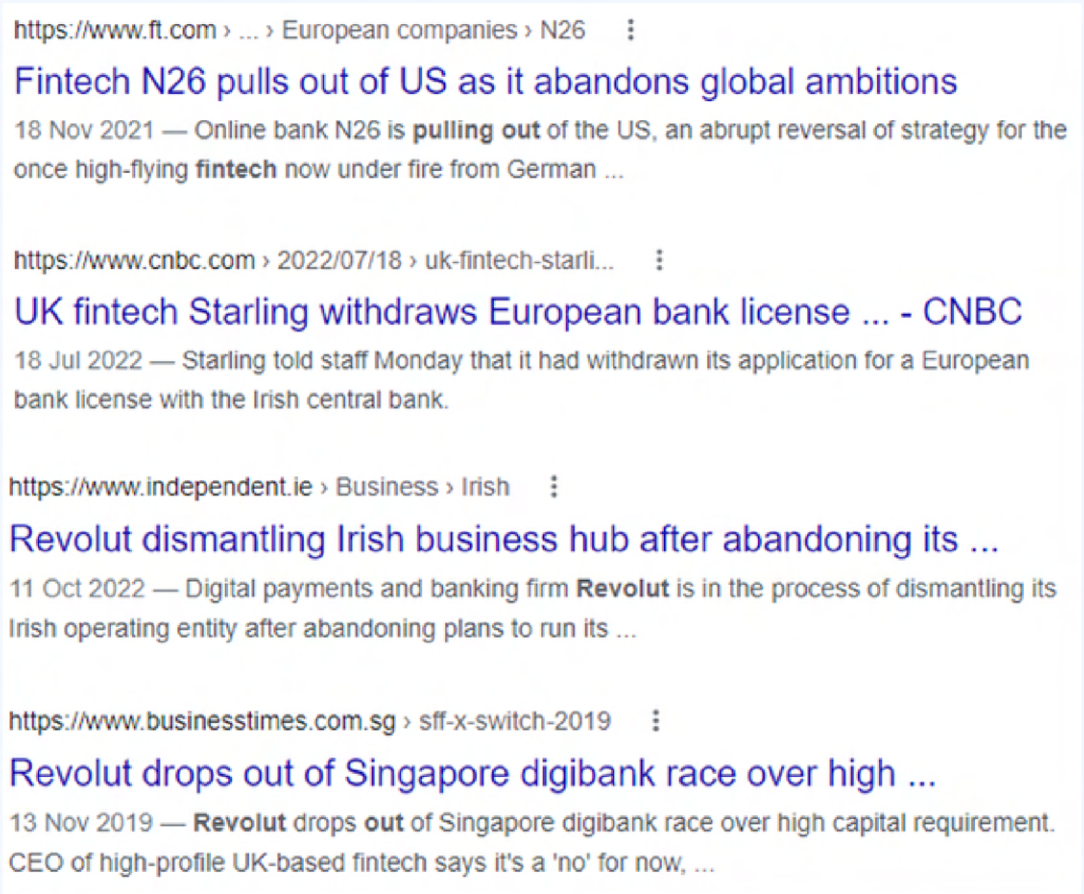


Fig 12. - Fintechs and neobanks can withdraw services abruptly

3. USE UNRELATED BANKING PROVIDERS

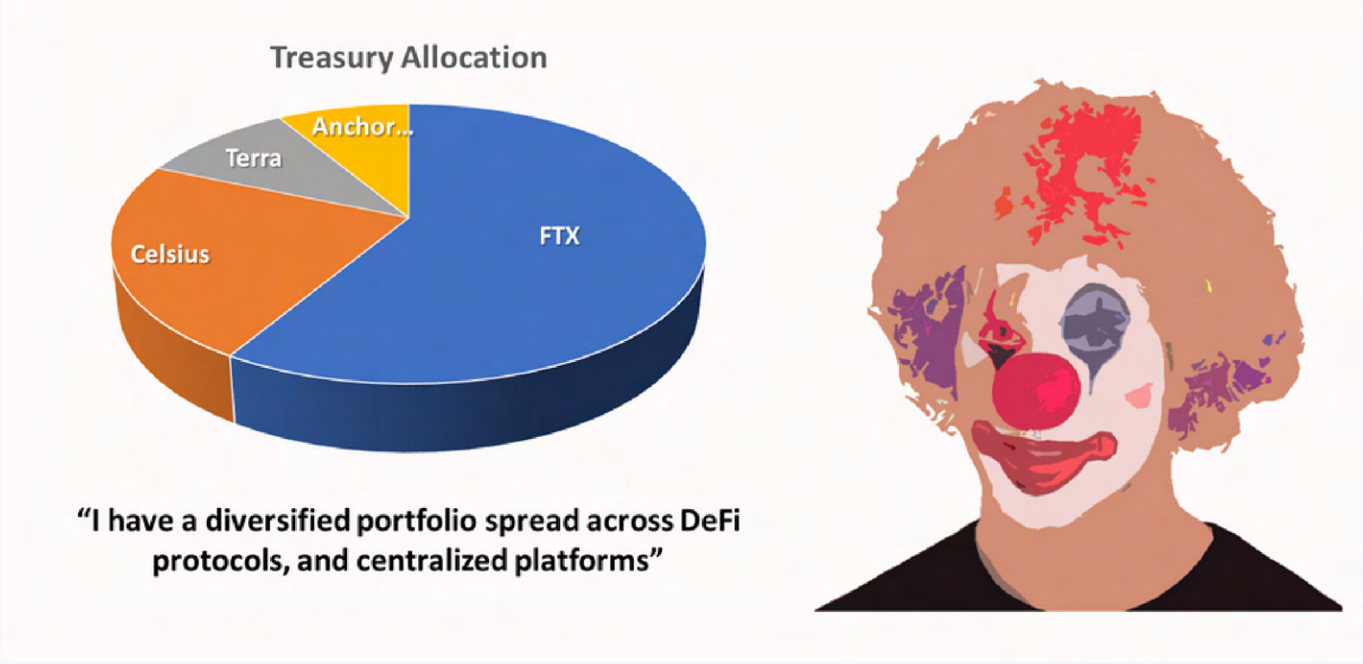
Just as it is prudent to diversify your company's crypto inventory across multiple crypto wallets, it would be similarly **wise to hold your company's fiat balances across multiple, uncorrelated banking providers**.

It is important to ensure that your bank provider and NBFI are uncorrelated. What does that mean? NBFIs like neobanks usually do not have their own banking licenses. Rather, they act as user acquisition channel partners, akin to wholesale retailers to traditional banks.

So for instance, if you already use Revolut in the United States, it would not diversify away your counterparty risk to use either Metropolitan Commercial Bank, or Cross River Bank - both of whom are Revolut's local partners.

Diversification is about not having exposure to correlated risks. In practical terms, you should **ensure that your counterparties have little to no substantial dealings or linkages with one another**. The string of collapsing centralized crypto platforms exposed to contagion from the Terra/Luna implosion illustrates this well.

The insolvent, Singapore-based crypto lender Hodlnaut was placed under judicial management in August after reportedly losing $189.7 million in the collapse of the Terra ecosystem. When FTX collapsed in November, it resurfaced that Hodlnaut had consolidated over 71% of its assets on centralized exchanges, with $13.3 million being held on FTX including bitcoin (BTC), ether (ETH) and stablecoins. **Once bitten, twice rekt**.



To effectively diversify your risk of being de-banked in fiat, **ensure to check for linkages between your fiat banking services providers**. Should any one of these NBFI banking services providers - or their core banking partners cut you off or go out of business, it must not dramatically impair your company's ability to conduct business operations involving fiat payments.

The fintech and banking landscape can change rapidly. Professional communities on Slack and Discord can help you access actionable intelligence from the experience of fellow web3 finance and operations professionals.

The web3cfo.club is an exclusive, vetted community by crypto CFOs, for crypto CFOs at Web3 companies like The Sandbox, Decentraland, Consensys and more.

CHAPTER 5.0

On & Off Ramps

To move value between a crypto wallet and a bank account, or vice versa, you will have to rely on on and off ramps.

On & Off Ramps

In the first chapter we looked at how and where to manage your company's crypto inventory via crypto wallets. In the second chapter, we addressed those same issues but in fiat via banking services.

In this chapter, we address how exactly we can move value between these two worlds of decentralized finance, and traditional finance.

Put simply, **how do you move money between crypto wallets and bank accounts?** It is important to note here that fiat on banking rails and crypto on blockchain networks live on entirely separate technology stacks. Thus, fiat cannot literally be transferred into a blockchain wallet, and crypto cannot be stored in a bank account per se.

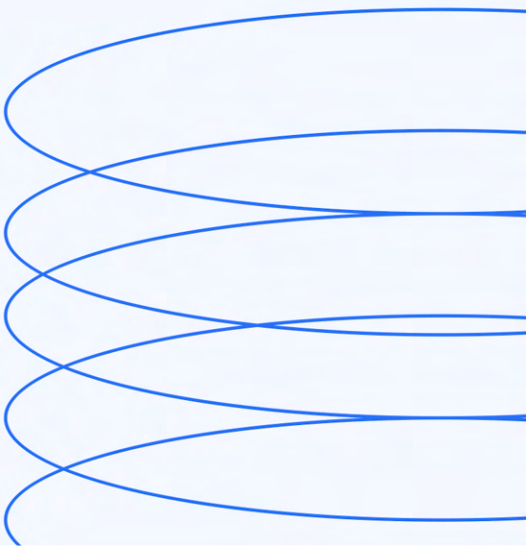
To move value between a crypto wallet and a bank account, or vice versa, you will have to rely on on and off ramps.

On and off ramps, as their name suggests are two sides of the same coin. On-ramps simply mean the exchange of fiat currencies for crypto. Off-ramps refer to the reverse: the exchange of crypto for fiat.

There are presently four primary means of doing so:

- **Centralized stablecoins.**
- **Decentralized stablecoins.**
- **Centralized exchanges.**
- **On/off ramp service providers.**

Let's examine each of these, and what they are best suited for.



1. CENTRALIZED STABLECOINS

Stablecoins are cryptocurrencies that have an exchange rate that is pegged to a fiat currency. USD-denominated stablecoins as a whole continue to be a popular choice for enterprise crypto payments, making up about half, or 50% of the crypto payments on Request Finance (Fig. 13).

The popularity of stablecoins can be explained with many of the same reasons why most people do business in fiat, rather than settling payments in shares of tech companies listed on the NASDAQ. Their stable prices make them ideal as a medium of exchange, and unit of account - two of the three defining features of money.

Some of the most popular stablecoins such as USDC, BUSD, USDT and even some non-USD stablecoins like XSGD are issued by centralized entities in exchange for fiat currencies.

They are some of the most popular crypto payments options chosen by enterprises using Request Finance. USDC alone accounts for about 29% of all enterprise crypto payments in the app, followed by USDT (11.4%).

In effect, centralized stablecoins are tokenized deposits. Stablecoins are legally identical to the account balances on your bank statements, or a centralized exchange. All deposits are debts owed by deposit-taking institutions to you.

Centralized stablecoin issuers promise 1:1 exchanges between fiat currencies and stablecoins.

But it is important to note that stablecoin issuers' ability to meet redemptions is dependent on the composition and value of their assets held in reserve.

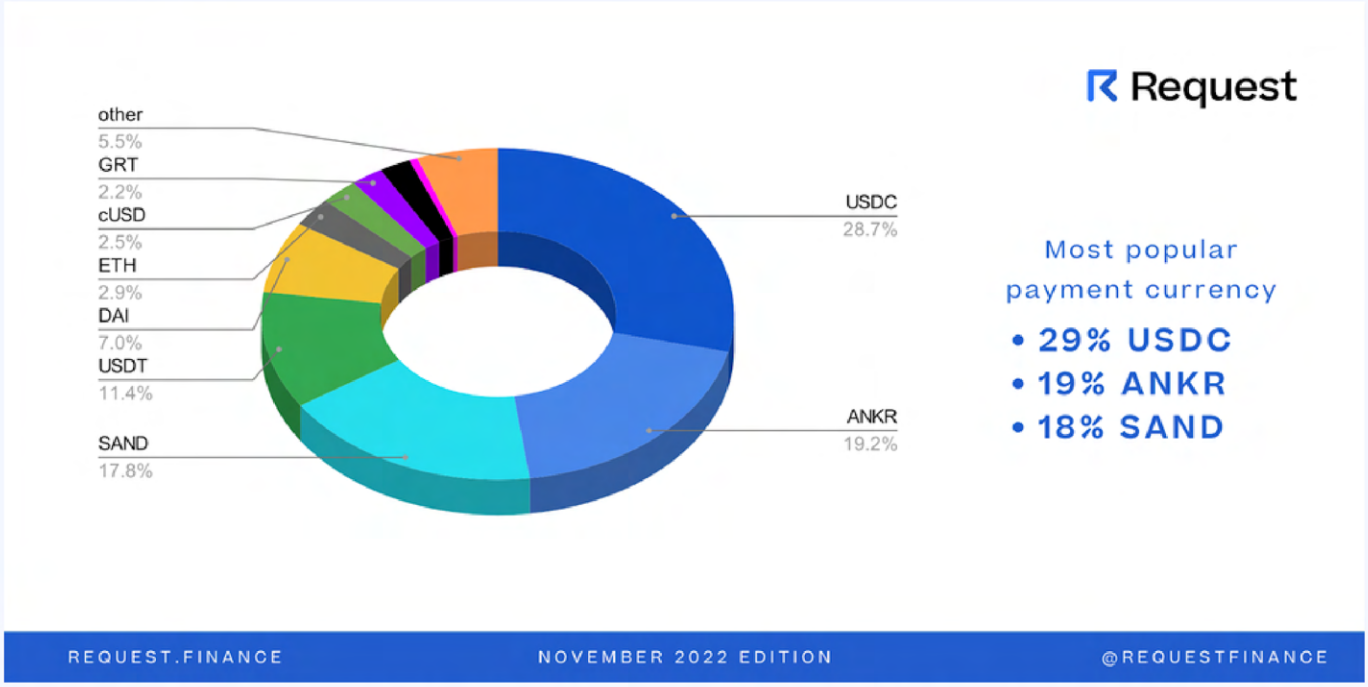


Fig 13. - Most popular tokens, crypto and stablecoins on Request Finance

Fig 14. - On & off ramping using centralized stablecoins

This composition can vary considerably depending on the issuer. For instance, as of June 2022, about 75.6% of Circle's reserves were held in 3-month U.S. Treasury Bills, and 24.4% were held in cash at regulated financial institutions. Around the same time, U.S. Treasury Bills accounted for 58% of Tether's reserves.

To exchange fiat for stablecoins, you simply deposit your fiat into their bank account, and they mint or issue an equivalent amount of stablecoins into your crypto wallet of choice (Fig. 14).

From there, you can either make a payment in stablecoins to another crypto wallet address, or swap your stablecoins on a cryptocurrency exchange for other crypto types.

To redeem stablecoins for fiat, the reverse applies.

Typically, you will have to **apply for a business account with one of these centralized entities**.

Sometimes, these are directly integrated into, and thus accessible from within crypto wallets and payment apps.

For instance, in Request Finance's enterprise crypto payments app, users can easily pay, or get paid with the EURe stablecoin issued by Monerium, and directly cash out to any Single Euro Payments Area (SEPA) bank account in the Eurozone.

This is perhaps one of the simplest ways to move value from a bank account to a crypto wallet, and vice versa.

2. DECENTRALIZED STABLECOINS

Not all stablecoins are issued via a centralized entity. Decentralized stablecoins **mint synthetic stablecoins when users deposit other crypto assets into a smart contract**, rather than wiring fiat into a bank account of a deposit-taking institution.

These smart contracts attempt to maintain a pegged exchange rate to a reference fiat currency in a programmatic manner. They attempt to mimic the decision rules and operations of how central banks, or currency boards around the world do as part of their exchange rate policies. For example, Curve, the second largest decentralized exchange on Ethereum, has released a whitepaper detailing an example of one such implementation of a price stabilization mechanism.

Off- ramping using decentralized stablecoins then, is somewhat of a misnomer as it is not technically possible to deposit fiat currencies from bank accounts into these smart contracts. However, they exist in something of a middle ground between centralized stablecoins, and using CEXes. It is possible to directly off-ramp some decentralized stablecoins in a roundabout manner that still appears nearly instantaneous.

Off-ramping using **decentralized stablecoins is useful for enterprises that wish to conduct their financial operations using non-USD stablecoins**.

The dominance of USD stablecoins owe in large part to the USD's role as the reserve currency of many central banks around the world, as well as its utility in international business. USD stablecoins also provide easy access to a lot of DeFi yield-bearing products and platforms.

However, non-USD stablecoins can enable Web3 companies to have deeper penetration into specific local markets. After all, it is already challenging to spend on blockchain payment networks locally, much more so using a USD-denominated currency.

For instance, Jarvis Network is an over-collateralized synthetic stablecoin protocol that focuses on issuing non-USD stablecoins, and creating liquid markets for them. The list of non-USD stablecoins available on Jarvis Network includes major currencies like the jGBP, jCNY and jEUR, as well as smaller, less represented currencies like the jSEK, jPHP and jNZD.

Through Jarvis' Network's partnership with Mt Pelerin Group, an authorized financial intermediary in Switzerland **users can off-ramp decentralized stablecoins from any wallet, on both Layer 1 and 2 blockchain networks**. It also offers stablecoin off-ramps in 14 fiat currencies directly from a bank account in 172 countries.

To minimize the transaction costs of off-ramping stablecoins this way, enterprises can encourage payment recipients to perform the off-ramps using their own accounts with Mt Pelerin.

3. CENTRALISED EXCHANGES

Centralized exchanges (CEXes) offer **more versatile on, and off ramps**. Centralized stablecoin issuers enable on/off ramps only in single currencies. For instance, Circle only accepts USD deposits in exchange for USDC, and StraitsX only accepts SGD deposits in exchange for XSGD.

Centralized exchanges typically accept fiat bank deposits via bank wires or credit cards, in many currencies, in exchange for most cryptocurrencies and stablecoins (Fig. 15)

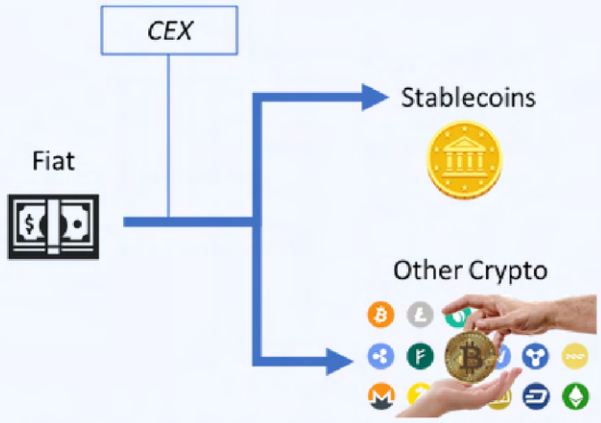


Fig 15. - On & off ramping using centralized exchanges

While this using a CEX for on-off ramps certainly seems more elegant on paper, there are four other considerations to note. **Firstly, it can be costly and time consuming**. Credit and debit cards are a popular way for retail users to purchase cryptocurrency via an exchange, but they come with high fees of up to 10% per transaction. This is generally unacceptable for enterprise use. Card payments are also on-ramps, but not off-ramps as it is usually impossible to "withdraw" money onto a credit or debit card.

Secondly, you run the risk of being de-banked. Many banks and credit card issuers still consider such transactions suspicious, locking or even closing accounts after learning the nature of the transactions. For exchanges, the credit cards of certain countries — including Russia and Ukraine — are automatically rejected.

Thirdly, banks that do tolerate transfers to cryptocurrency exchanges may still involve their compliance teams to ask detailed questions regarding the exact destination of funds and the reasoning behind crypto purchases. If and when transfers do go through, they can take several days. By then prices might have fluctuated dramatically.

Lastly, the counterparty risks of dealing with a CEX can often be higher. While both CEXes and centralized stablecoins are deposit-taking institutions, it is typically easier to audit the reserves, and liquidity of a centralized stablecoin issuer than a centralized exchange. Put simply, it is generally easier to assess whether a centralized stablecoin issuer has the liquidity and solvency to honor their debt obligations than a CEX.

4. ON/OFF RAMP SERVICE PROVIDERS

There are an increasing number of players that offer direct payouts: both from crypto wallets to bank accounts, and vice versa.

Some of these include NBFIs like **online brokerages like Robinhood, fintech payment processors like Stripe, and neobanks like Revolut** which have now begun to offer crypto. In effect, these on/off ramp providers are acting as their own exchanges and market makers.

Within this category, are also **over-the-counter (OTC) desks**, often operated by CEXes. They are ideal for making outsized transactions typically in the millions of dollars, in a more cost-effective manner than making spot purchases on exchanges.

OTC desks are valuable due to their ability to conduct large trades without moving the market against them. This effect is known as “slippage” and occurs when large-scale buying causes prices to immediately rise before the targeted amount of cryptocurrency has been purchased, while selling causes it to fall before it’s all sold.

This is **ideal for cases where large amounts have to be off-ramped**. Examples include converting part of the capital raised in fiat from a venture funding round into stablecoins for global payroll.

Or conversely, converting a portion of your organization’s crypto treasury to pay bills to landlords which may require a large upfront cash downpayment.

On & Off Ramps

BEST PRACTICES

On/Off ramping is not as easy for businesses as it is for individuals. The nature and size of corporate banking introduces significantly greater fraud, and AML risks. Traditional banks may de-bank corporate accounts which receive funds from bank accounts linked to centralized exchanges.

As local banks' risk tolerances can vary widely between countries, it is recommended that you consult with fellow professionals like those in the web3cfo.club.

Regardless of which off-ramp methods, or specific service providers you use to convert your fiat to crypto, or vice versa, there are four best practices to consider:

- **Map out your on/off ramp needs by payment corridors**
- **Avoid using on/off ramps to hold your treasury**
- **Implement a monitoring regime to screen for de-peg and liquidity risks**
- **There is safety in diversity**

1. MAP OUT YOUR ON/OFF RAMP NEEDS BY PAYMENT CORRIDORS 🗺️

Today, there exist a myriad of on/off ramp methods as compared to just a few years prior in 2017.

At the enterprise level, a growing number of solutions providers are increasingly eager to peddle their latest and greatest universal on/off ramp solutions.

What most won't tell you during the pitch is that there is no such thing as a free lunch. **CFOs we interviewed quickly discovered one or more of these limitations** - in order of increasing egregiousness:

- Geographical coverage, or supported tokens/blockchains is highly limited
- There are serious daily transfer limits far below your organizational needs
- Settlement times are the same as bank transfers
- Fees are exorbitant if they rely on credit card payment networks
- You must open a corporate bank account with their banking partner
- Payment services licensing must be obtained as part of the on-boarding process

Remember that on and off ramps ultimately mean having to deal with geographically-bound banking networks.

Like the previous generation of web2 fintech payment processors, they are simply relying on a tech-enabled system to scale the ancient practice of Hawala banking to create the illusion of fast, global payouts.

To save yourself the time and frustration of being drip-fed limitations by various on/off ramp providers, you can map out your on/off ramp needs by payment corridors.

Go through your company's database of employees, freelancers, contractors, and service providers. **Map out the various country pairs, and the fiat payments volumes that flow between them**.

Armed with that knowledge, you will know which regions to prioritize on/off ramps for. This way, you can have more productive discovery calls with on/off ramp providers.

2. AVOID USING ON/OFF RAMPS TO HOLD YOUR TREASURY ⛔

On/off ramp wallets - especially third-party custodial ones, should never be abused as treasury wallets, to minimize your exposure to counterparty risk from custodians.

While we already highlighted the importance of self-custody in the third chapter on crypto wallets, it is worth repeating here.

Too often, crypto companies are lulled into complacency, and end up misusing CEX wallets to hold significant amounts of their treasury. Web3 CFOs should strongly **avoid abusing on/off ramps - especially CEXes in this manner**.

Consider the following example: You are the CFO of a wildly successful Web3 game developer. The date is 5 November, 2022.

To settle your accounts payable in fiat at the end of the month, you need to off-ramp $500,000 in USDC from one of your treasury wallets. $400,000 of which is slated for the fiat portion of your payroll, and the remaining $100,000 to pay your company's AWS cloud hosting fees in fiat.

You have been using FTX.com for the last two years to do this, with zero hiccups. The process is seamless, the fees have been reasonable, and the settlement times predictable.

If you had decided to move 500,000 USDC from your self-custodial treasury wallet to an FTX wallet now, and leave it there until the end of the month, you would have quickly found yourself out of a job. This is exactly what numerous startups, and even venture funds did for their employees - including FTX's.

"We used the closely-associated exchange, FTX, as a custodian to store a significant proportion of the stablecoin investment we raised, i.e., our day-to-day operational budget."

- Yele Bademosi, CEO of African web3 startup, Nestcoin

3. IMPLEMENT MONITORING REGIMES TO SCREEN FOR DE-PEG AND LIQUIDITY RISKS ⚠️

Whichever stablecoins you choose to use to on/off ramp, it is recommended that you set notifications and alerts for social media activity and price action to regularly screen for de-peg risks.

Apart from screening for warning signs for stablecoin de-peg risks on your own personal accounts, **consider recruiting the help of your marketing team**. They likely already have tools which monitor social media regularly as part of their workflows.

What de-peg risk criteria should Web3 CFOs screen for? **De-peg risks vary depending on the type of stablecoin.**

If your organization relies heavily on centralized stablecoin issuers to manage your organization's on/off-ramps, CFOs can **regularly review the attestation or audit reports provided by these issuers** as part of their disclosure regimes. Balance sheet issues could cause fatal bank runs. This also applies to screening for liquidity risks when using other centralized entities like CEXes for on and off ramps.

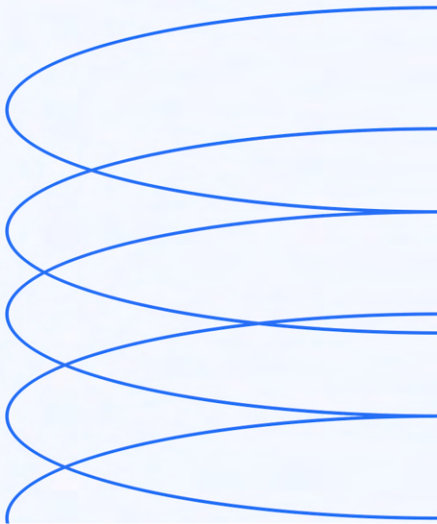
On the other hand, synthetic stablecoins are also subject to similar risks of their own, **largely related to the design of their price stabilization mechanisms**. CFOs should review the design of these mechanisms closely, before deciding to rely on them as on/off ramp channels. .

There is no such thing as an unassailable stablecoin model, or indeed an infallible exchange rate policy. Catastrophic currency devaluations have happened in traditional foreign exchange markets, and have happened with on-chain stablecoins

Different stablecoin designs are subject to different risks, and Web3CFOs must implement robust due diligence in evaluating stablecoins for enterprise use, and also adopt ongoing screening for specific de-peg risks.

Regular screening can enable CFOs to react in a timely manner to protect their crypto treasury from such risks. There are numerous examples of how vigilant monitoring of fear, uncertainty and doubt, (FUD) on social media platforms has allowed individuals and companies to save hundreds of millions of dollars from exposure to collapsing stablecoins and centralized off-ramps.

Doom scrolling might just save your organization from actual doom.



4. THERE IS SAFETY IN DIVERSITY 🛡️

Use **a mix of on, and off-ramp channels that are as uncorrelated as possible**. In the example above, if you already use a CEX to meet over half of your monthly on and off ramp volume, examine its shareholding structure, and avoid using other entities linked to it.

Instead, you can use a different CEX that is not a subsidiary or partner to the one you currently use.

Better still, use a mix of other stablecoin issuers to meet the other half of your on/off ramp volume each month.

If for example, you are already using a Circle Business Account for USDC, consider using a Paxos off-ramp for BUSD, or USDP.

Ideally, you can use **different on/off-ramp channels for different purposes**. For instance, you can consider using a CEX to off-ramp crypto for payroll, and a centralized stablecoin issuer to off-ramp when paying SG&A expenses in fiat.

Diversification is a running theme throughout nearly all the best practices sections in each of the guide's different chapters. Web3 CFOs today also diversify their on/off ramp channels (Fig. 16).

The technical, regulatory, and market risks in the crypto industry are rapidly evolving. In this environment, CFOs at crypto companies must never allow their organization to become reliant on a single provider - for anything that could jeopardize the company's finances.

That said, **more is not always better**. When modern body armor became available, American soldiers were given bulletproof armor to cover nearly every square inch of their bodies from head to toe. But lumbering around wrapped in armor like the Michelin man is counter-productive, and exhausting. Today, soldiers typically wear just enough to cover their vital organs. Getting hit elsewhere might be devastating, but not instantly fatal.

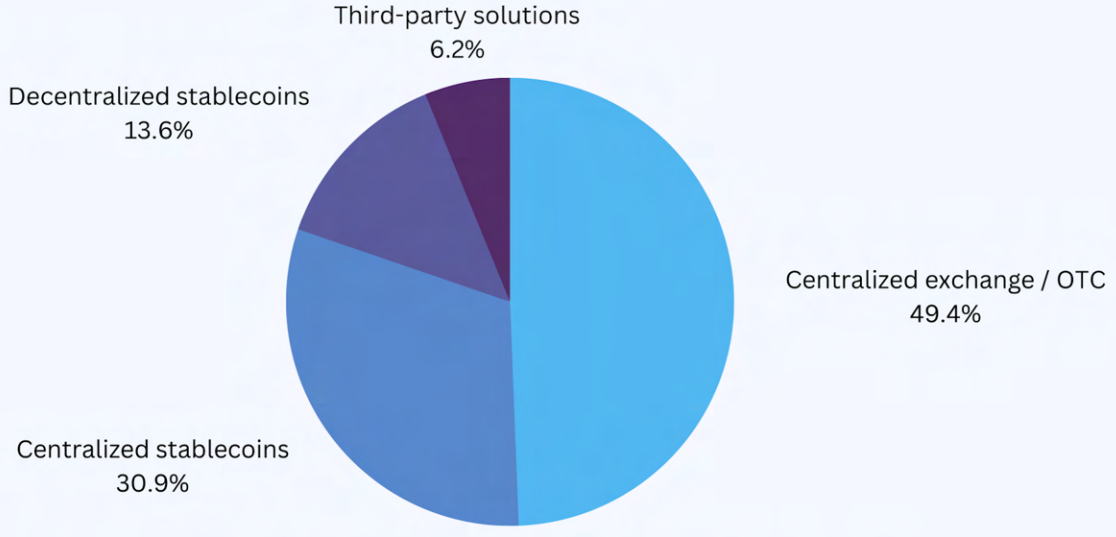


Fig 16. - What on/off ramp methods do Web3 CFOs use?

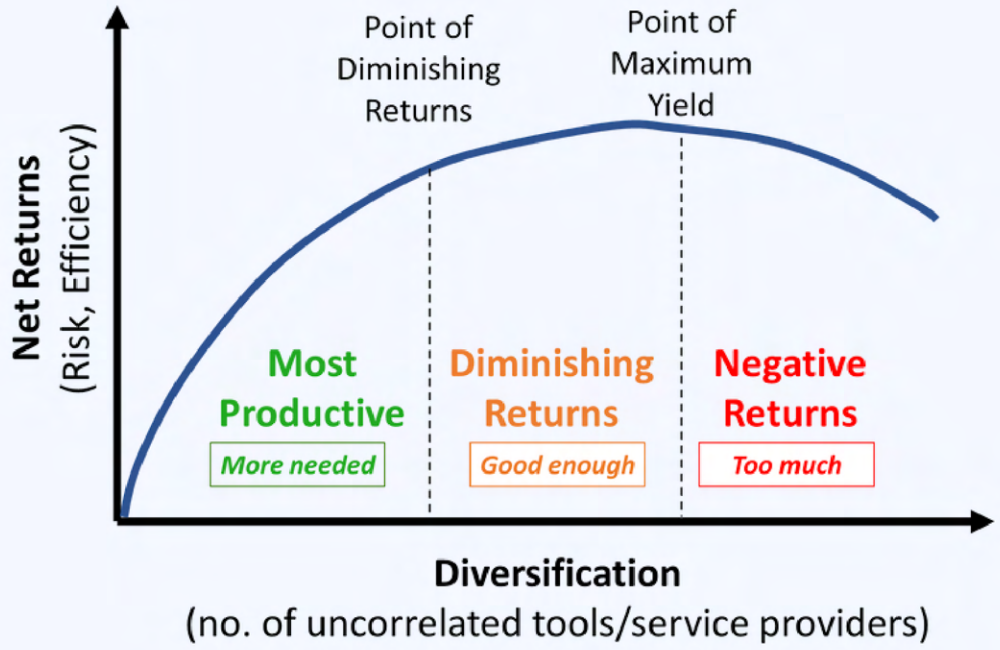


Fig 17. - Diminishing returns on diversification

Similarly, there are always diminishing *marginal net returns* to diversification (Fig. 17). At some point, these increased costs can outweigh whatever benefits you gain from diversification.

The more tools and channels you use, the less exposed you are to any one failing.

But that also means that you must expend more energy and time on systems and processes to manage these different tools.

Juggling too many tools, or managing different systems poorly can introduce their own risks too!

For example, if your organization had a hundred different crypto wallets, with ten different signatures needed to move funds between treasury wallets.

It is likely that either your AR/AP processes will slow to a grinding halt, or that even some wallets' private keys will be compromised or lost.

What then, is an appropriate level of diversification?

A simple rule of thumb is this - **use at least two, uncorrelated, extensively-researched tools for each core activity area in your crypto finance stack:** (i) crypto wallets, (ii) banking services providers, and (iii) on/off ramps.

Like our appropriately-armored soldiers, Web3 CFOs can focus on using multiple tools to de-risk these three core areas. **They are the vital organs of your organization.** Tooling failures here will immediately impact your balance sheet and liquidity.

The breakdown of tooling in all other domains is not a direct and urgent threat to your organization's financial survival.

CHAPTER 6.0

Crypto Payments

In this chapter, we will cover the topic of managing payments in crypto. This includes getting paid, or paying out in crypto.

Crypto payments

At this point in the guide, we have already covered how to store and manage your organization's crypto assets in wallets, and meeting your fiat banking needs.

We have also looked at how to move money between fiat and crypto, using various on/off ramp methods.

In this chapter, we will cover the topic of managing payments in crypto. This includes getting paid, or paying out in crypto.

WHY CRYPTO PAYMENTS?

There are good reasons organizations should consider accepting payments in crypto, or make payments for their operating expenses in crypto.

1. SPEED & COST ⚡

Faster transaction speeds: Crypto payment rails often have faster settlement speeds than even some neobanks and fintech payment processors, allowing for quicker and more efficient transactions.

Blockchain networks, especially Layer 2s typically have lower transaction fees than neobanks and fintech payment processors, leading to cost savings on high transaction volumes.

2. GLOBAL REACH 🗺️

Crypto payment rails are not limited by geographical boundaries, allowing businesses to easily conduct transactions with customers and partners in other countries.

Using a global, internet-native payments system also enables your organization to hire talent, and operate without borders. This allows your organization to grow faster, and enter markets faster.

3. EMBEDDED DEFI 💵

Crypto also enables your organization to offer far more innovative **embedded DeFi services at a scale and cost unmatched by Web2** fintechs.

From staking and lending, escrow smart contracts, programmatic loyalty rewards, and even Buy Now Pay Later (BNPL) smart contract platforms like Teller Finance, and BNPL Pay.

4. NO CENSORSHIP 🗽

Lastly, but certainly not least, **crypto payments are censorship-resistant**. As highlighted in the earlier chapter on fiat banking, having your funds frozen or worse, confiscated is a real risk many businesses have discovered.

Traditional payment processors can also charge merchants higher fees, impose stricter limits on transactions, or even deny service if they deem merchants to be at high risk, or objectionable.

Understanding blockchain transactions

It is ideal that Web3 CFOs dealing with crypto understand the basics of blockchain technology. As a finance leader at your organization, you could dedicate regular blocks of time each week to learning and development.

Crypto-native CFOs can work better within their organizations, and can better add value to Web3 teams than those who are not.

But for the purposes of this guide, **simple mental models of how blockchains work are sufficient** - even at the risk of over-simplification. It is neither necessary, nor productive for most CFOs to grapple with the cryptographic primitives, and distributed computing technologies that power blockchains.

Note: some exceptions to this might be if you are a CFO working at an investment fund which engages in Maximal Extractable Value (MEV) operations, or a crypto mining company where block rewards form a significant part of your revenue streams.

Distributed Ledgers

For most CFOs, it is sufficient to think of **blockchains as distributed ledgers, much like Google Sheets.** It is accessible anywhere, anytime, by anyone with an internet connection.

Each person on the sheet can see the entire edit history of the ledger, and has a full copy of the ledger. It is this global-first, internet-native design of blockchains that makes it an attractive candidate for becoming the new scaffolding of a truly global economy.

Whenever someone wants to make a transfer between accounts in the ledger, they simply subtract from one account balance, and add the same amount to another account. As explained in the chapter on crypto wallets, all transactions require approval by signing with the payer's private keys.

Smart Contracts

Just like how one can write small programs like macros in Google Sheets, the assets that live on blockchain ledgers can also be programmed using smart contracts. Smart contracts are simply programs stored on a blockchain that run when predetermined conditions are met.

Smart contracts are typically used to **automate the execution of an agreement** so that all participants can be immediately certain of the outcome, without any intermediary's involvement or time loss. They can also automate a workflow, triggering the next action when conditions are met. This makes smart contracts useful for payment services like escrow.

But more broadly, smart contracts can be used to build DeFi platforms like exchanges, or lending platforms. Much in the same way that ride-hailing platforms automate the matching of riders and drivers, smart contracts can automate the functions of traditional financial intermediaries.

Examples of smart contract applications include the matching of buyers and sellers of commodities and securities by broker-dealers, matching asset owners to asset managers by fund houses, or even matching lenders to borrowers by commercial banks.

Transaction Costs & Speed

Unlike Google Sheets which are hosted on a cloud server owned or rented by Google, the distributed ledger is hosted by a network of peers, or nodes. Each time a transaction is made, the payer must **pay a "gas" fee to the network's nodes** for maintaining and authenticating copies of the ledger.

Gas is charged as a flat fee, payable in the network's native token, and does not change regardless of the transaction amount, but is subject to surge pricing. The more congested a network is, the higher gas fees will be. Gas fee estimates will typically be shown to you before you sign a transaction using your wallet.

In some cases, surging gas fees could make everyday payments even more costly than using traditional payment rails. However, for very large transactions ranging from the hundreds of thousands, to millions of dollars, the flat fee paid in gas is almost always cheaper and faster than traditional payments.

The method by which a blockchain protocol maintains harmonized records of the ledger is known as the "consensus mechanism". Different **consensus mechanisms affect the speed at which payments are processed** on a blockchain network.

As a Web3 CFO, these two issues in blockchain design impact the cost, and speed of transactions when you make crypto payments. There are various scaling solutions being developed to allow you to achieve faster and cheaper blockchain transactions. These include:

- Layer 1 Scaling Solutions
- Layer 2 Scaling Solutions

Cryptocurrency price tracker, CoinMarketCap, has a fairly comprehensive guide on the different types of scaling solutions.

Token Swaps & Cross-Chain Interoperability

Different Layer 1 blockchains are like separate Google Sheets. They are not always interoperable! That poses challenges similar to not being able to transact across different banks. Thankfully, the extent of their fragmentation is far less than that of traditional banking systems.

Just as different scaling solutions have been developed to address the speed and cost of blockchain transactions, there are various solutions being developed to enable interoperability between chains. These include:

- Bridges & Wrapped Tokens
- Sidechains & Parachains
- Cross-chain messaging protocols

A challenge for web3 CFOs to manage tokens - which can exist on different blockchain payment networks. For instance, the stablecoin USDC can be represented on both Ethereum mainnet, as well as Polygon. Making a payment on any blockchain network **will require that you have a sufficient amount of its native token to pay for the network's gas fees.**

For Web3 CFOs, cross-chain interoperability issues, and solutions are relevant when dealing with counterparties who may wish to either pay, or be paid using different blockchain networks. It is both parsimonious - but not always possible for you to impose restrictions on your counterparties regarding the payment networks you prefer; especially if you are on the poorer end of the bargaining power spectrum in the relationship.

For instance, a boutique smart contract audit firm getting paid by a large DAO may not be in the position to demand that their invoice be settled in USDC on Polygon.

The simplest way to manage cross-chain payments is to acquire a floating balance of native tokens of the blockchain payment networks you wish to make payments on, and choose wallets that support payments on those chains.

That being said, there are good reasons why you may not wish to maintain a balance of USDC on different chains. For example, it might result in an unnecessary expansion in the variety of crypto wallets that you must maintain to store your treasury.

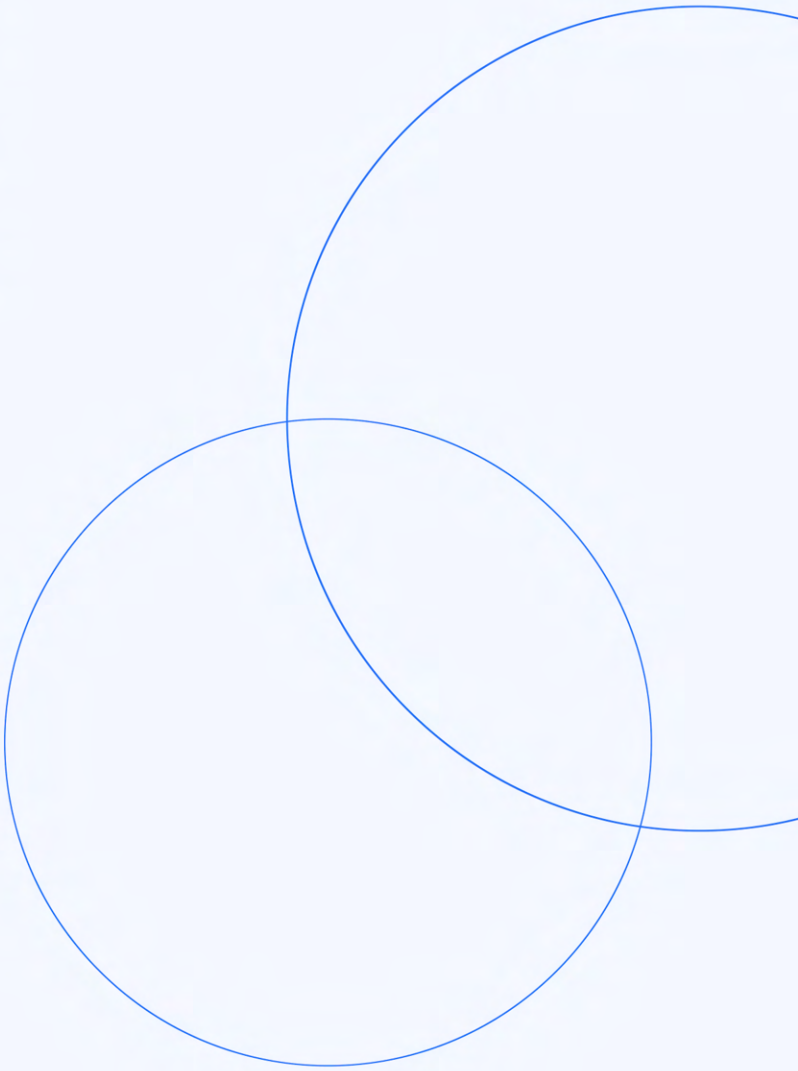
Web3 CFOs should familiarize themselves with using popular decentralized exchanges, (DEXes) like Uniswap, or Pancakeswap. They allow you not only to swap one token for another on the same chain, but also to swap the same token between different chains. For example, if you have USDC on BNB Chain which you want to swap to USDC on the Ethereum Mainnet, you can use Uniswap to do so.

DEXes are also ideal if you want to rebalance your crypto treasury's intertemporal exposure to specific tokens. Finance professionals with experience at large multinational corporations would be familiar with using traditional foreign exchange markets to do this.

With DEXes, even the smallest business enterprise can diversify their treasury's currency exposures to various stablecoins and crypto tokens. For instance, a Singapore company doing business in Indonesia can use a DEX like Uniswap to regularly rebalance their exposure to the more volatile Indonesian rupiah to swap between XSGD and XIDR stablecoins.

As discussed in the earlier chapter on on/off ramps, Web3 CFOs may find themselves needing to diversify their stablecoin holdings based on their ongoing assessment of de-peg and redemption risks.

For instance, if your screening regime identifies elevated risks around the redemption of USDT for fiat, you may wish to reallocate more of your treasury towards USDC instead. A DEX like Uniswap would be ideal for this purpose.



Evaluating Blockchains

By now, you would have an actionable framework to understand the basics of blockchain transactions. You also have some understanding of the differences between various blockchains, cross-chain interoperability issues, and solutions to make transactions faster and cheaper.

But **which blockchain networks should CFOs use** for their own organization? To answer this, it is helpful to think about what your goals are.

Let's examine some of these possible objectives, and how they can inform your choice of blockchain network.

1. TRANSACTION COSTS & SPEED

The cost and speed of payments on blockchain networks impacts your organization's operating costs, as well as the efficiency of your organization's financial operations.

For instance, if gas fees on the Ethereum mainnet are surging to uneconomical levels during the week where you process your accounts payable it could force you to **look at alternative networks like Polygon**.

Or for instance, if the BNB Chain or Solana network goes down (as it has repeatedly), it would prevent you from being able to send or receive transactions on that particular blockchain.

To prevent your finance team from being caught off guard by reliability issues or high transaction costs on any one chain, CFOs can learn to use different blockchain payment networks, and scaling solutions.

Using **crypto payment apps, and wallets that support transactions across multiple blockchain networks** can also make it easier for Web3 CFOs to develop redundancies to ensure that their financial operations in crypto are not overly-dependent on one single chain.

For example, Request Finance's enterprise crypto payments app supports invoicing, payroll, expenses and more in over 15 different blockchain networks, including Layer 2's like Optimism and Polygon.

2. DECENTRALIZATION

As a Web3 CFO, you should care about the decentralization of a blockchain network, **less as a matter of ideology, but of practical security.** One vulnerability of blockchain networks is known as a "51 percent attack", where a

hacker or malicious actors in collusion, gains control of a majority of the nodes on the blockchain network. This allows them to create a "fork" of the blockchain with alternate blocks that allows them to "double spend" the cryptocurrency.

While incredibly challenging to do on larger, decentralized blockchain networks, **it has happened in the past on networks whose nodes are largely dominated by related parties** acting in collusion.

3. ENERGY INTENSITY

Leaving aside the political or moral dimensions of energy consumption, Web3 CFOs may sometimes find it practical or expedient to consider the energy intensity of the blockchain networks they use.

For instance, if a Web3 CFO is in the process of raising venture capital funding from a fund manager whose mandate includes environmental, social, and governance (ESG) metrics.

The energy intensity, and by extension, your organization's carbon footprint can depend on the design of the consensus mechanism employed to manage a blockchain network.

For instance, proof of work blockchains may be more secure and decentralized in some ways, but they also require tremendous amounts of computational power, and thus energy consumption.

But **carbon accounting can be an inexact science** especially given that many miners rely on renewable energy sources, or natural cooling systems to reduce their operating costs.

There are **always tradeoffs between these objectives**, and few chains can satisfy them all equally - at least for now. While Ethereum network is used for about 70% of crypto payments processed through Request Finance, transaction volumes on other chains are growing steadily due its lower gas fees (Fig. 18).

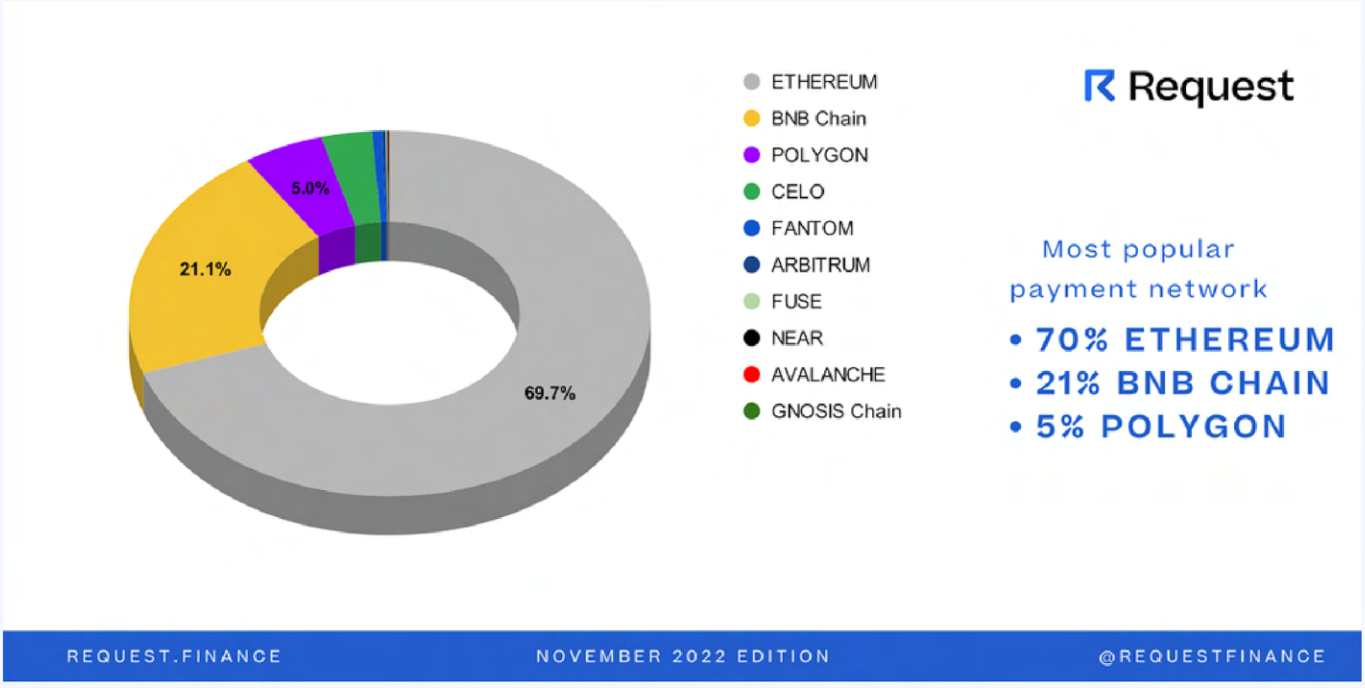


Fig 18. - Popular enterprise payment chains

Managing crypto payments

In the first chapter, we already covered the basics of signing transactions using public-private keys. So why, you might wonder, is there a need to discuss crypto payments in a separate chapter?

Many crypto wallets are not tailored to meet the needs of organizations. While a good many crypto wallets exist, their features and user experiences are often tailored almost exclusively for the usage needs of individual retail consumers, not enterprises.

The individual retail consumer needs a crypto wallet that is mobile-first, to pay merchants online and at in-store POS terminals, to split bills, and make ad-hoc peer-to-peer transfers. In contrast, Web3 organizations have very different crypto payments needs.

What organizations need

DAOs, enterprises, and foundations have **very different crypto payments needs**, including:

- Billing or invoicing clients for goods and services rendered
- Processing bills and invoices for goods and services consumed as operating expenses
- Managing payroll, equity and token allocations
- Submitting, approving, and reimbursing travel & expense (T&E) claims
- Issuing and managing corporate expense cards
- Disbursing grants and bounties, airdrops and prizes, or investment capital

And perhaps most importantly of all, keeping accurate transaction records is a matter of personal finance for the individual retail consumer. In contrast, Web3 CFOs need tools to **manage their crypto payments in a manner that facilitates easy financial reporting** for internal stakeholders like management and investors, and external parties like tax, audit, and AML authorities.

Thankfully, there are a number of applications like Request Finance which are specifically designed to address the crypto payment needs of organizations like DAOs, enterprises, and foundations.

Billing in crypto

How can organizations get paid in crypto? **An organization's crypto billing needs may vary, based on the nature of the goods or services provided**. For instance, a smart contract audit firm likely has a very different billing cycle, as compared to a blockchain analytics platform, or a crypto transaction monitoring service.

There are two primary means by which Web3 CFOs can manage billing operations in crypto: invoicing and subscriptions.

1. CRYPTO INVOICES

Invoicing clients in crypto is especially relevant for companies that provide services to crypto-native organizations.

Examples include smart contract audit firms, software development houses, media and marketing agencies, or corporate services providers.

Request Finance is designed to meet the operational and compliance needs of enterprises accepting payments in crypto, by simplifying the invoicing process.

You can **automate recurring invoices** for billing your clients monthly, weekly, or even on a streaming basis. Or schedule email reminders to chase upcoming bills, or even late payments past due.

It also lets you know when you have been paid. You can also **enable email notifications to let you and your clients know when your invoices have been sent**, rejected, accepted, or paid on-chain.

It also serves as a **deterministic proof of income.** Suppose you receive a call by law enforcement agencies, suspecting you of laundering money for an international scam ring. Or the tax authorities accusing you of unlawful tax evasion.

Sending them your Etherscan wallet history does little good. The pseudonymous nature of crypto wallet addresses, and the long alphanumeric strings of transaction hashes are ill-suited for financial reporting, or calculating tax liabilities.

With Request Finance, all this is **documented easily, and in a human readable format**.

All wallet addresses are also linked to real world identities in a deterministic manner. There is almost no chance that a wallet, or payment is mislabeled by accident

On the other hand, you may also be a CFO of a DAO or crypto-native company that pays contractors, contributors, freelancers, and other service providers in crypto.

Most crypto organizations have substantial proportions of their treasury in crypto from fundraising events, and will prefer to pay for their operating expenses in crypto as well. Your organization needs a tool that allows you to easily pay bills and invoices in crypto.

Most organizations send and receive PDF invoices - in different layouts and formats, across different communication channels like email, and messaging apps.

This is problematic for several reasons:

Firstly, there is the issue of operational efficiency when making crypto payments. Most companies manually copy the payment information from PDF invoices, or a spreadsheet when paying the invoices. This is time-consuming, and incredibly prone to human error.

In Request Finance, all wallet addresses are linked to names and emails. There is no chance of paying the wrong amount or to the wrong person. With our batch payments feature, you can also review, approve, and pay hundreds of different wallets, in different tokens in just three clicks.

Secondly, there is also the issue of finance operations. With Request Finance, you can spare yourself the endless back-and-forth of unnecessary communications between freelancers and your company's finance department.

A common nuisance companies experience with invoices is that mistakes sometimes occur with the wrong billing information like the company's name, Tax ID, or address. This can cause needless delays in processing payments.

Request Finance allows you to send your freelancers or contractors a QR code or link. This will automatically create an invoice that's already pre-filled with your business information. They will just need to fill out the rest of the invoice. Now anyone can invoice you correctly in just a few clicks.

Thirdly, there is the issue of bookkeeping. PDF invoices typically come in different layouts, which must be manually downloaded, properly named, and stored into files.

Their data must be extracted, compiled, and uploaded into some bookkeeping or accounting software like Xero.

But how do you account for the historical exchange rates of invoices denominated in volatile cryptocurrencies, or even fiat exchange rates? What about gas fees?

All of this is automated in Request Finance. You have a single clean dashboard where you can see all your invoices in chronological order, filter by names, addresses, or payment status.

All this data, including historical exchange rates and gas fees, can be easily exported to tax or accounting software in a few clicks.

2. SUBSCRIPTIONS IN CRYPTO

Subscriptions in crypto is another topic that may be relevant if your organization accepts crypto payments.

Invoices are good enough for most B2B billing workflows - especially if there are lags between delivery of the service and payment.

Even for companies that wish to offer subscriptions in crypto, invoices can also be used to offer subscribers discounted lump sum payments for packages or bundles.

But companies like blockchain analytics tools, news, or media and other content platforms may prefer a crypto billing method that **supports direct debits at regular intervals from customers' crypto wallets.**

There are currently very few elegant blockchain-based solutions for merchants to pull funds away from their subscribers' crypto wallets on a regular basis.

True subscription on the blockchain is technically challenging. The blockchain was built with decentralization and security in mind.

Every transaction has to be signed and approved by the wallet owner — a "push" payment. This does not lend itself well to "pull" payments like subscriptions.

There are three approaches that currently exist to support subscriptions in crypto:

- streaming payments,
- token allowances, and
- NFT subscriptions

STREAMING PAYMENTS 🌊

Payment streaming protocols like Superfluid allow your organization to bill subscribers or users every second. This would be ideal for on-demand, sharing economy platforms like a car, or bike-sharing dApp.

In a single transaction, a subscriber could agree to transfer a fixed amount in a constant stream over a pre-defined duration. Every second, a tiny amount of the total bill will flow out of the subscriber's crypto wallet, without any need for additional gas fees. Similarly, cancellation is also only one transaction.

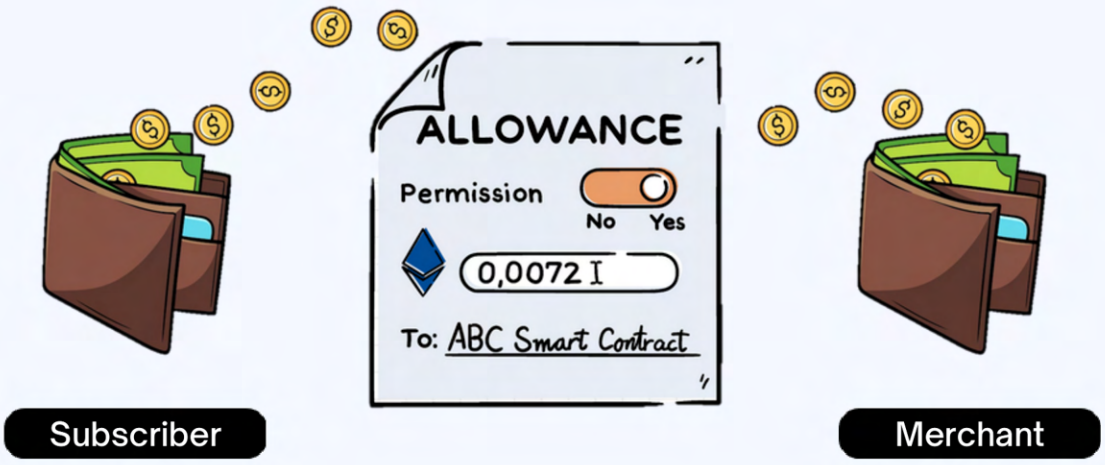
But in order to use Superfluid's payments streaming, a subscriber will need to wrap their ERC20 tokens into a Super Token, which are then used for payments. For instance, our hypothetical bike-sharing dApp could accept payments using Request Finance, in the USD-pegged stablecoin, DAI.

But users would have to first wrap the DAI (ERC20 token) into DAIx (Super Token) on the Polygon chain. Once under the Super Token standard, the subscriber can start paying for the use of the bike in a continuous stream.

TOKEN ALLOWANCES ✅

Token allowances are the equivalent of **direct debit authorizations** in traditional finance.

It allows your subscribers to provide a **one-time approval for recurring payments**, enabling businesses to provide subscription-based services in a hassle-free manner.



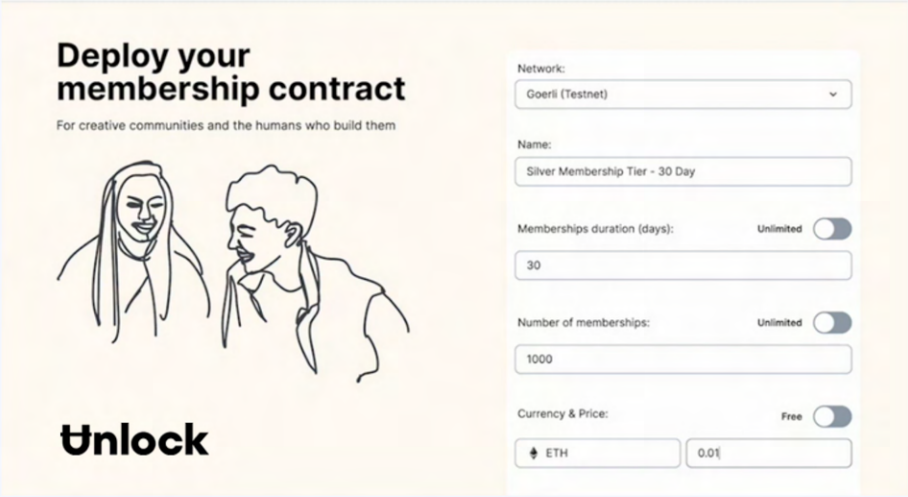
Merchants can automatically deduct subscription fees directly from subscribers' wallets at regular intervals, over the subscription duration (e.g. 30 USDC per month).

Once the smart contract uses up the allowance for the given period of time, it cannot pull any tokens from the user's wallet, until the periodic allowance is reset at the next time interval.

For instance, Suberra is developing a subscription payments standard through periodic allowances, which are time-gated smart contracts with pre-defined transaction values.

NFT MEMBERSHIPS 🃏

Another approach would be **recurring billing using NFTs that serve as digital membership cards**. For instance, Unlock Protocol enables NFT-based recurring subscriptions and memberships that don't need to be manually renewed.



In comparison to the payment streaming method above, Unlock can allow your product to **automatically enable, or disable a user's access to your services depending on the NFT's validity**, which is tied to whether a member has paid their bills.

Additionally, billing subscribers via membership NFTs can also allow you to easily develop commercial **partnerships with other merchants** to offer incentives, discounts, and other loyalty rewards that enhance the value of your membership plan.

For instance, our hypothetical bike-sharing dApp that uses Unlock Protocol's NFT membership to bill its users for the use of its bikes, could also partner with coffee chains like Starbucks to offer a 10% discount on in-store purchases to members who have the bike-sharing membership NFT in their crypto wallet.

Comparing crypto billing methods

To help you evaluate which billing methods best suit your various use cases, here is a handy summary of the pros and cons of the four billing methods in crypto explored in this chapter.

PROS 👍

CRYPTO INVOICES
E.g. Request Finance

- 👍 Ideal when there are long lags between delivery of the service and payment.
- 👍 One-time payment for packages or bundle deals.

STREAMING
E.g. Superfluid

- 👍 Stable cashflow for merchants.
- 👍 Ideal for time-based, on-demand, or pay-as-you-go services.

TOKEN ALLOWANCES
E.g.Suberra

- 👍 Direct debit authorizations simplify and automate collections with one-time approvals.
- 👍 Best for simple subscriptions.

NFT MEMBERSHIPS
E.g. Unlock Protocol

- 👍 NFTs can be used to enable/deny access to services based on payment history.
- 👍 Ideal for multi-merchant, membership and loyalty rewards programs.

CONS 👎

CRYPTO INVOICES
E.g. Request Finance

- 👎 No direct debits from subscribers' wallets.

STREAMING
E.g. Superfluid

- 👎 Requires additional steps to wrap tokens before they can be used to pay.

TOKEN ALLOWANCES
E.g.Suberra

- 👎 Not ideal for membership programs.

NFT MEMBERSHIPS
E.g. Unlock Protocol

- 👎 Requires the use of NFTs as a token-gating tool for all membership program merchants.

Compensation in Crypto

Compensation at Web3 companies is also typically processed in crypto tokens and stablecoins - at least in part, if not entirely. There are good reasons for this. This chapter will cover how to manage three different aspects of compensation in crypto:

- **Payroll**
- **Expenses, and**
- **Token Allocations**

CRYPTO PAYROLL

The Benefits of Using Crypto for Payroll

As mentioned at the start of this chapter, stablecoins offer a fast, cheap, globally-available, universally accessible, internet-native means of payment. Being able to pay anyone, anywhere, anytime greatly **expands your organization's ability to hire the best talent, and enter new markets around the world**.

How to Set Up a Crypto Payroll System

- **Employer of Record (EOR)**

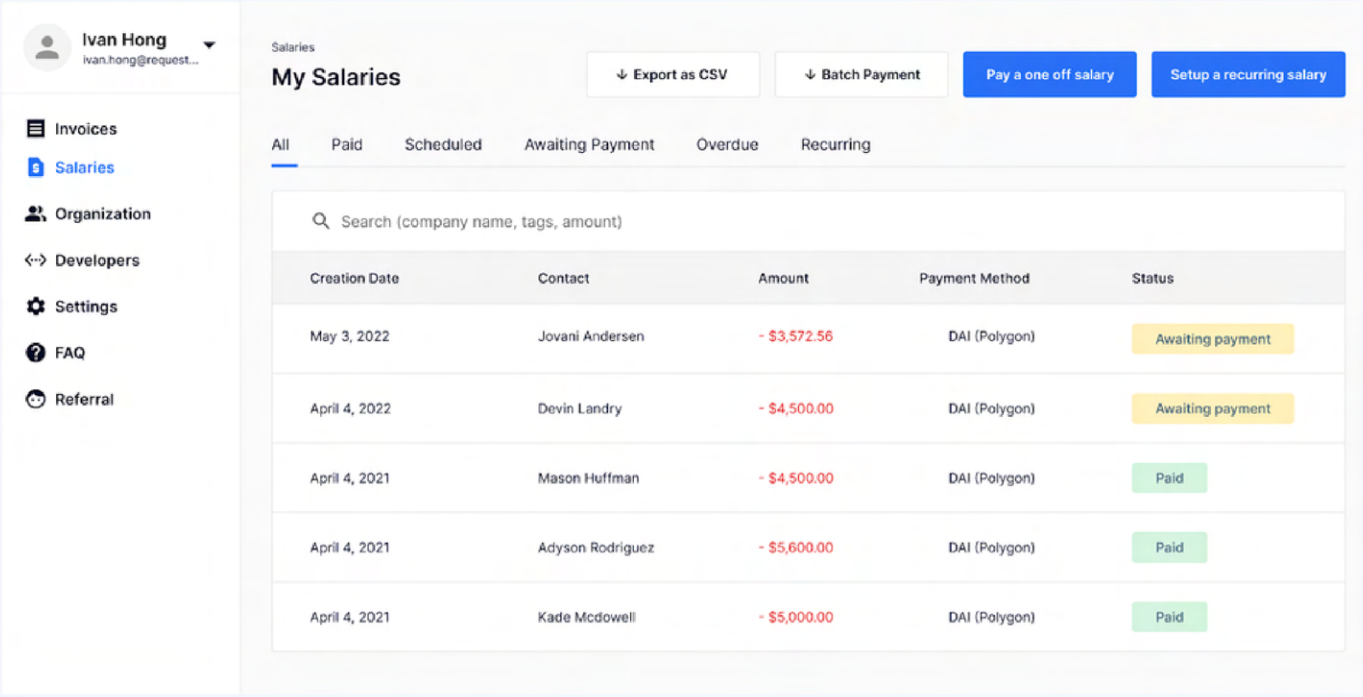
One of the complexities of global payroll for remote teams also involves the need to have localized entities or subsidiaries which act as employers of record (EOR). On top of incorporating **local entities wherever you wish to hire**, you will likely also need to deal with local labor laws which cover things like pension schemes.

There are global payroll services providers like Deel, or Remote.com that do all of these for you for a monthly fee per employee. They also allow payouts in crypto - albeit only to US residents, and employees must open an account with Coinbase.

- **Contractor Payouts**

Using an EOR to manage global payroll can be costly, and there are typically serious limitations when paying salaries in crypto or stablecoins. To address this, Request Finance introduced a crypto payroll module. Choose from over 150 different crypto or stablecoins to pay your team in, and from 14 different payment networks of your choice.

You can also schedule recurring salary payments, according to the frequency of how often they get paid in a month. Best of all, you also can pay hundreds of salaries in just a few clicks. You can also view the history of your salary payouts, or which team members have yet to be paid.



Since January, we have also been working on an integration with Superfluid, to allow the streaming of payments - including salaries in crypto. When this is live, you will also be able to set up salary streams in Request Finance.

The limitations of Web3 solutions like Request Finance, is that the people you hire will have to be legally considered contractors, as it is currently not possible to comply with all the complexities of local labor laws, and still payout easily in crypto. However, for a growing legion of digital nomads working for DAOs and remote-first companies, this has been less of an issue.

EXPENSES IN CRYPTO

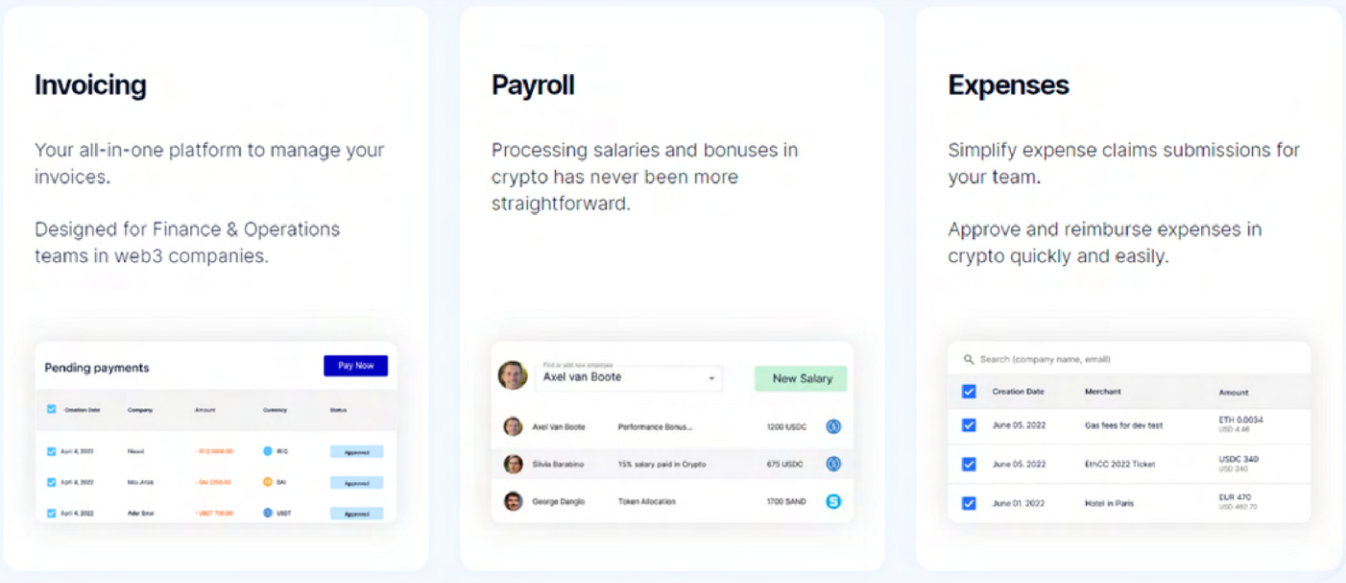
Expense management is a big deal for DAOs and crypto companies. For one, it is closely tied to how an organization manages its burn rate - especially given how most crypto organizations' operating expenses are financed with investors' capital. After payroll, **travel and expenses (T&E) is typically the second-largest spending category** for companies. When these expenses aren't properly tracked and processed, that can interfere with a CFO's ability to accurately budget and forecast for the future.

Also, **T&E can be used to reduce corporate tax liabilities**. Under most tax regimes, T&E is also tax-deductible - insofar as proper records are kept to demonstrate that they are business-related. By maintaining the right documentation for the right period of time, and ensuring that all deductions are valid, companies can be confident they can maximize their allowable tax deductions.

Automating your organization's expense management can simplify the claims submission process, simplify documentation when claiming tax deductions, and enable employees to be reimbursed faster. No one wants to pay $1,000 in travel costs out-of-pocket for a business trip and then wait around for months while those expenses are reviewed, approved and reimbursed.

Additionally, for the sales and business development teams who attend conferences and events frequently, they will find themselves having to **claim expenses like conference tickets, or sponsorships that were paid in crypto**.

There are many corporate expense management solutions in the market: but few allow expense reimbursements to be made in crypto. For instance, one of the most popular corporate expense management apps is Expensify - but the only cryptocurrency it supports for reimbursements is Bitcoin. Request Finance has an expenses module that allow CFOs to easily track, review, and reimburse expense claims in crypto, stablecoins, or fiat.



TOKEN ALLOCATIONS

In addition to ordinary wages being paid in stablecoins to meet the team's fiat expenses, many companies have governance, or utility tokens as part of their compensation packages. It is important to note that these tokens are distinct from equity. Unlike equity, most tokens do not represent a claim on the future cash flows of an operating entity.

Token allocations - typically done as part of an initial coin offering (ICO) - serve to align the incentives of the team with the long-term success of the platform. This inspires confidence in external stakeholders like users and early investors.

Token allocations have **significant differences when compared to traditional equity**. These include:

PROS 👍 VS. CONS 👎

CRYPTO TOKENS

- 👍 Valuation of tokens is marked to market in real-time.
- 👍 Instant liquidity and faster time-to-market.
- 👍 Zero exercise cost or windows like with share options.
- 👍 May not be subject to local regulations on capital gains taxes.
- 👍 Staking, lending, and yield incentives for earning extra tokens, and to access underlying liquidity without triggering a taxable event.
- 👍 No dilution, or at a minimum, dilution that's transparent.

EQUITY

- 👎 Equity valuations are pegged to enterprise value assigned at the last fundraising round.
- 👎 Need to wait for an exit by way of acquisition or IPO).
- 👎 Share options have an exercise price, and windows.
- 👎 May be subject to capital gains taxes on equities .
- 👎 Limited upside on secondary markets without selling. Equity lines of credit are complex financing mechanisms.
- 👎 Subject to severe, and often opaque dilution.

The decision to offer tokens as compensation will depend largely on how the organization generates value, and where does the value accrue to. It is also possible to offer a combination of both tokens and equity as part of the compensation package.

In addition, you'll also need to consider:

- Payroll taxes and tax withholding
- Accounting and tracking token-based awards
- Legal documents and processes to ensure compliance with tax and securities laws

Note: seek advice from Qualified Persons like a local tax advisor or accountant with experience around token compensation plans.

ACCOUNTING AND TAX TREATMENT

INCOME TAX

The amount of the expense is calculated by determining the value of the stock at the time it is granted to the employee.

This value is then multiplied by the number of shares that are granted to the employee.

For example, if a company grants an employee 100 shares of stock that are worth $10 per share at the time of the grant, the expense would be $1,000 (100 x $10).

In terms of taxes, the employee will generally be required to pay taxes on the value of the stock when it is granted, even if they do not sell the stock.

The employee will be required to pay taxes at their ordinary income tax rate on the value of the stock.

For example, if the employee in the above example is in the 25% tax bracket, they would be required to pay $250 in taxes on the value of the stock (25% x $1,000 = $250).

CAPITAL GAINS TAX

If the employee later sells the stock for more than its value at the time of the grant, they may be required to pay additional taxes on the difference between the sale price and the value at the time of the grant, depending on whether local regulations levy "capital gains" taxes on tokens.

Much of this will vary depending on the accounting treatment of crypto assets. This topic is explored in greater detail in a later chapter in this Guide.

It is worth noting that the specific tax treatment of token-based compensation may vary depending on the specific circumstances and details of the grant, as well as any applicable tax treaties or other agreements between your local tax regime and the country where the company is based.

It is always a good idea to **consult with a qualified tax professional who is familiar with the laws and regulations in your local market** to ensure that you are properly accounting for and reporting any stock-based compensation.

Vesting refers to the process by which an employee becomes entitled to receive the shares of company stock, or crypto tokens that have been granted to them as part of their compensation plan.

In general, vesting occurs over a certain period of time, known as the vesting period, and may be subject to certain conditions, such as the employee remaining with the company for a certain number of years or achieving certain performance goals.

The vesting of equity or token grants does not typically impact the accounting and tax treatment of stock-based compensation.

The value of the asset is **generally recorded as an expense** on the company's financial statements at the time of the grant, regardless of whether they have vested. This is especially true of token allocations.

The employee is also generally required to **pay taxes on the value of the tokens or equity at the time of the grant, even if they have not yet vested**. However, the vesting schedule may impact the timing of when the expense is recognized and when the employee is required to pay taxes.

For example, if the vesting period is three years, the company may choose to recognize the expense on its financial statements over the three-year vesting period, rather than all at once. Similarly, the employee may be required to pay taxes on the value of the equity or tokens as it vests, rather than all at once at the time of the grant.

Again, it is important to note that the specific treatment of vesting may vary depending on the details of the grant and the applicable laws and regulations in your local market.

Similarly, **token and equity management platforms can help Web3 CFOs simplify allocations & vesting schedules**.

For example, Folium lets organizations tag and trace manage smart contracts, token vesting, and distribution in crypto and NFTs across blockchains. Better still, Folium also helps to manage equity, and share options - giving organizations flexibility in deciding compensation models.

Managing crypto payments

BEST PRACTICES

Managing your crypto payments well is a matter of operational efficiency, strategic insights, implementing proper process and controls, and compliance with tax and AML regulations.

These four dimensions can help you **evaluate the tools that you choose to automate and simplify paying, and getting paid in crypto**.

1. OPERATIONAL EFFICIENCY ⚡

Your payments tool could have features that give your team the ability to:

- Support various **crypto wallets, blockchain networks, and token types**.
- Support **programmable payment options** like smart contract escrow, streaming payments, or NFT subscriptions.
- Pay contacts **without needing to manually input** crypto wallet addresses
- Easily pay hundreds of different wallet addresses in a single **batch transaction**
- Automate **push notifications for on-chain payment** confirmations
- Integrations with **contract management software** to pull variables from contracts signed, to automatically create payment requests.
- Easily **send payment requests** to counterparties, with payment details included
- Schedule **recurring payment** requests, **or direct debit** from crypto wallets
- Send **automated payment reminders** for upcoming or delinquent payments
- Easily submit and reimburse **travel & expense (T&E) claims** which are typically processed separately from payroll, and are also sometimes claimable under contract terms with professional services providers.
- View, retrieve, and **export payment data** to accounting/tax software.

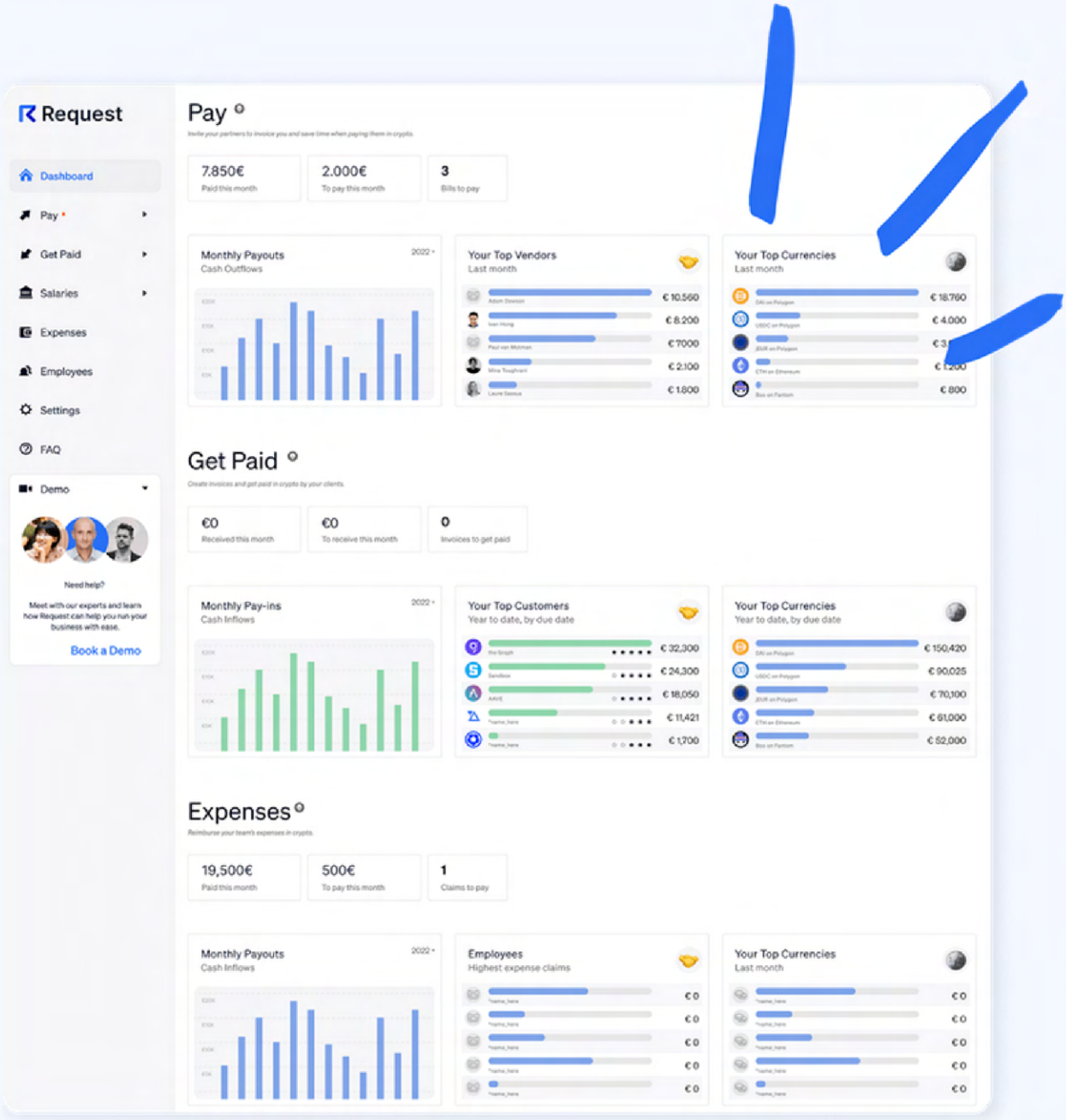
While few tools can check every single item off the list, some tools can do more than others. This list will help you think about some of the key features of crypto payments apps that can help you enhance the efficiency of paying, and getting paid in crypto.

2. STRATEGIC INSIGHTS 💡

One of the main challenges with crypto payments, or indeed enterprise payments in general is being able to label what the purpose of each transaction is.

Being able to label transactions allows CFOs to **code the transactions into the organization's chart of accounts (COA)**, which organizes your finances to give interested parties, such as investors, DeFi lenders, and team members, a clearer insight into your organization's financial health.

Your crypto payment tool should also have at least simple dashboard reports that allow you to **easily visualize where your crypto transactions are coming from, and going to**. This way, Web3 CFOs can identify key growth areas for the organization, or what the main cost drivers are.



3. PROCESSES & CONTROLS 🎮

As alluded to in the first chapter on crypto wallets, implementing proper processes and controls are important to prevent waste, fraud and abuse. It is not only a matter of ensuring that your own organization's crypto is put to the best uses possible.

For most companies in the space, a significant proportion of their treasury is sourced from invested capital.

Accountability for how investors' capital is spent is critical to the integrity of the organization, and the management's reputation.

The tools you choose to manage your crypto payments should enable you to do this with features that give you the ability to:

- Maintain a clear database of employees, contractors, and other counterparties and their payment details
- Attach proper documentation to payment requests like invoices, and expense claims
- Review and approve payments before they are made in accordance with clearly detailed expense policies.
- Set approval limits requiring multi-sig authentication for transactions above a certain threshold
- Allow permissioned access to different team members. For instance, HR might be responsible for expense reimbursements.

Contact management is a commonly overlooked, yet fundamental aspect of having proper cash disbursement controls.

Does that wallet address belong to Tom from the Marketing department, or the freelance graphic designer we hired last month?

To simplify managing your organization's accounts payable and accounts receivable in crypto, you need a clear way of organizing contacts, as well as their corresponding payment details: both in crypto and fiat.

This was highlighted in FTX's recent bankruptcy filings, when its interim CEO explained:

"The FTX Group's approach to human resources combined employees of various entities and outside contractors, with unclear records"

You could maintain a contact management system that will help you streamline your crypto payments.

There is nothing wrong with maintaining a permissioned-access Google Sheets, but your contacts and their payments information should also ideally be integrated into your crypto payments app.

Manually pulling (read: copy-pasting) payment information from a spreadsheet into your wallet when making payments, is both **tedious, and vulnerable to error**.

Additionally, when uploading CSV files to token multi-senders for batch payments can be problematic in the absence of clear version controls.

Put simply, you could end up making a batch payment using the wrong spreadsheet file.

The absence of such proper processes and controls has been the source of scandal at various crypto companies and DAOs.

In July 2022, the Harmony blockchain foundation was accused of financial mismanagement of over $3.6m in grants disbursed to DAOs in a series of related party transactions (RPTs), among other allegations of waste, fraud and abuse.

More recently, in FTX's Chapter 11 Bankruptcy Filings, newly-appointed CEO, John J. Ray III, highlighted the serious failures of disbursement controls at the defunct crypto exchange.

> **"the FTX Group submitted payment requests through an online chat platform where … supervisors approved disbursements by responding with personalized emojis. corporate funds … were used to purchase homes and other personal items … there does not appear to be documentation for certain of these transactions …"**

Of course, the mere availability of these tools do not guarantee that waste fraud and abuse will not occur.

Rather, as evidenced in the case of the Harmony DAO scandal, it makes it easier to detect and put an early stop to it.

4. COMPLIANCE & REPORTING 👮🏽

Lastly, they should also enable you to ensure that your financial reporting is compliant with relevant laws concerning documenting crypto transactions for tax, and anti-money laundering (AML) purposes.

The tools you choose to manage your crypto payments should enable compliance with features that give you the ability to:

- Denominate outstanding and historical crypto payments in fiat prices.
- Mark crypto payments to market values at the point of payment.
- Maintain separate records of gas fees and other transaction costs associated with crypto payments to be filed as operating expenses.
- Easily export historical transaction data to traditional accounting/ERP software.
- Provide readable documentation for transactions including counterparties real-world personally-identifiable information for AML reporting (such as Form 8300 for US Persons).

On November 15, 2021, President Biden had signed the Infrastructure Investment and Jobs Act into law.

It introduced new reporting obligations for U.S. persons and businesses transacting in cryptocurrency.

Beginning January 1, 2024, any "person" (including an individual, corporation, partnership, association, trust or estate), in a trade or business who receives **more than $10,000 in crypto in a single transaction, or series of related transactions** must file a Form 8300 within 15 days.

Recipients must verify and record the payer's personally identifiable information, including: the payer's name, address, occupation, and taxpayer identification number; the identifying information of the person on whose behalf the transaction was conducted, a description of the transaction, and method of payment.

Form 8300 filers are obligated to give written notice to every party named on the form by January 31 of following year. Copies of the Form 8300 also must be kept on record for five years.

CHAPTER 7.0

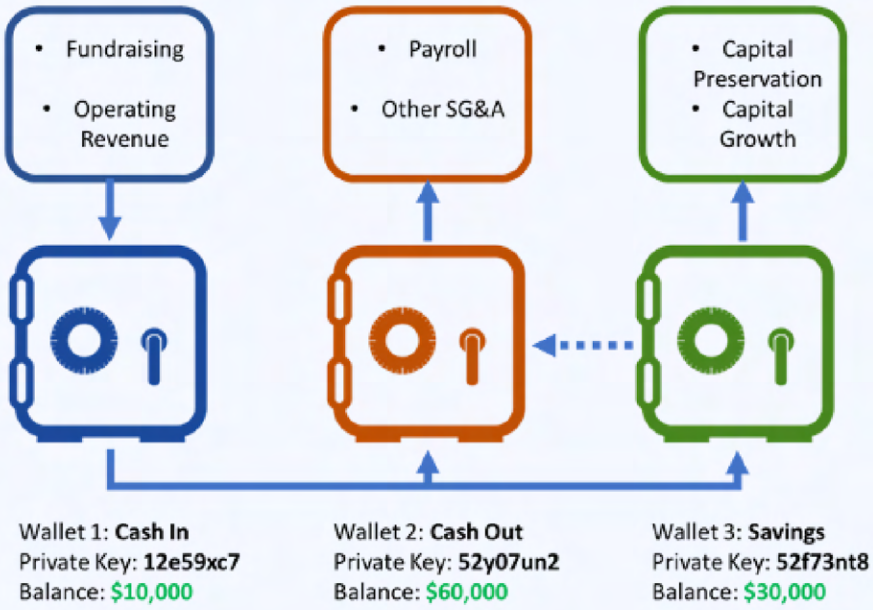
Crypto Treasury Management

The goals of a Web3 CFO's treasury allocation strategy are: capital preservation, liquidity, and income, in that order.

Treasury Management

In an earlier chapter, we explained why you should consider maintaining at least three different crypto wallets:

- one for receiving payments,
- another for paying expenses,
- and a third wallet that acts like a savings, or investment account.



The assets comprising these accounts are derived from multiple sources, primarily from fundraising or operating revenue. Fundraising in crypto typically takes the form an Initial Coin Offering ("ICO"), which lists a newly-minted token for sale on a decentralized exchange for sale to retail investors. The company receives cryptocurrencies like ETH, or stablecoins in exchange for its native token.

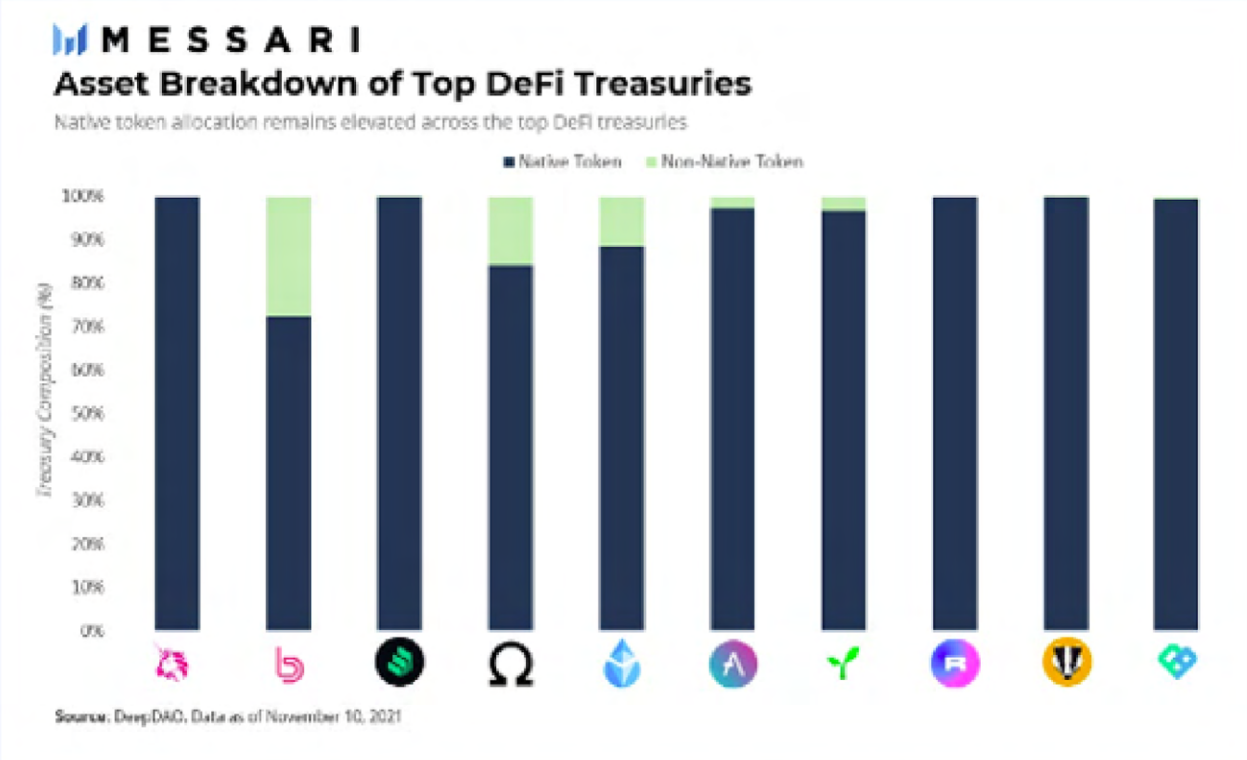
This fresh capital is typically directed to the treasury. Ideally, organizations or dApps that have sound fundamentals will aim to generate revenue from fees. This operating revenue represents a recurring source of income to the treasury. While other ancillary sources of income may exist, this piece will focus on those fundraising and operating revenue, with an ICO being the primary source of treasury capital.

Much of the following content has been adapted to fit this Guide from Credix's blog post, "Treasury Management Best Practices: A Diversified Approach to Capital Preservation, Liquidity, and Income".

Credix is a next-generation credit infrastructure designed to give borrowers in emerging countries access to previously untapped capital and deliver strong risk-adjusted returns to investors. Visit Credix's website to learn more.

Typically in an ICO, the token issuer will retain a significant portion of the supply of its native token in its own treasury account. These tokens are usually pre-allocated for a variety of uses as outlined in a public offer document like a White Paper. Allocated uses often include staking rewards, compensation for advisors and other core contributors, ecosystem development grants, or future working capital needs.

Often, the organization's treasury will be composed largely of its own native token; effectively seeking to align the interests of investors and the token issuers. Messari illustrates this in its report, Crypto Theses for 2022, showing the breakdown of top organization treasuries. Shown below, some of DeFi's largest treasuries are largely, if not entirely, composed of the issuer's native tokens.



Note: Olympus has since shifted its treasury from a majority OHM to ~47% DAI per DeepDAO.

Treasury Capital Allocation

BEST PRACTICES

For proper organization treasury allocation, as with a traditional finance investment strategy, there is no “one size fits all” solution. There are, however, some best practices and a framework for approaching treasury allocation.

A16z Crypto states that “the goals are capital preservation, liquidity, and income, in precisely that order” for a Web3 CFO’s treasury asset allocation and management strategy. Building off of this framework, let us dissect each component and build a hypothetical treasury basket assuming a profitable organization with a native token.

1. CAPITAL PRESERVATION

Large exposures to a single asset are a significant risk factor to the organization’s treasury.

Regardless of economic fundamentals, token prices are highly susceptible to exogenous shocks.

Proper asset allocation and defensive diversification are fundamental pieces of traditional investing that carry into the DeFi realm as well.

An investor holding an S&P 500 ETF will almost certainly fare better than the investor holding one individual technology company stock in the face of a tech sector bottoming such as the Dot-Com Crash.

Narrowing the focus, holding that one specific stock introduces direct, unmitigated exposure to a sole company: if it goes under, the investor goes under.

These same principles can be applied to the DeFi ecosystem and specifically to treasuries.

At its core, a treasury should be a fortress of capital, walled against market gyrations and certainly impenetrable by the malperformance of one individual asset.

This approach, as seen in the Messari chart, is not always taken, however. So how should a treasury be composed? What is the proper asset allocation?

As highlighted by the cryptocurrency market's volatility and overall 2022 performance, capital preservation can be a challenging target.

However, focusing less on the market movement of an investment, an investor may look to the underlying organization's health and likelihood of survival. In other words, what is the chance of it blowing up?

Without naming specific tokens, some assets within the ecosystem are generally respected as "blue-chip" investments with the largest market caps, they are foundational to the industry; if they go under, we all go under.

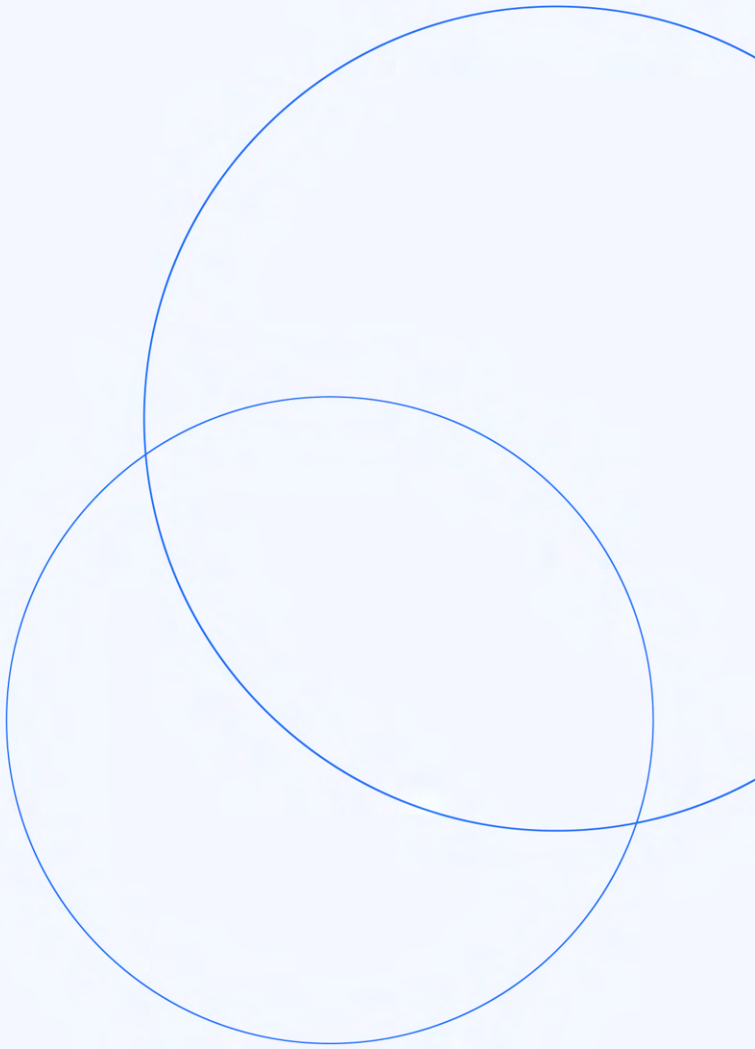
Additionally these assets have shown massive historical price appreciation since launch which more than preserves purchasing power.

Capital preservation can also be achieved by holding industry-standard, dollar-pegged assets. For example, and not providing recommendations, Circle's USDC or MakerDAO's DAI might fit this approach.

Assuming operations as usual, a treasury of 100% these two assets would have the exact same balance in thirty years as it does today. This is essentially a "leave it under the mattress" approach.

So which approach to choose? While the former comes with volatility and a litany of organization-specific risks, the latter delivers no possibility of price appreciation and loss of purchasing power when off-ramped to a fiat currency due to off-chain inflation.

This leads back to the basics: **Diversification**. Including a mix of both types allows an organization to know its treasury will have a floor value of the dollar-pegged assets while also aiming for capital gains from the industry's top coins or tokens. Capital is preserved and maintained.



2. LIQUIDITY 🌊

This is the cash in the checking account used to cover expenses. An organization will have a list of basic cash expenses such as compensating core contributors, audits, server hosting, marketing at events, and so on. Without immediate liquidity, the project could potentially renege on contracts or miss payments.

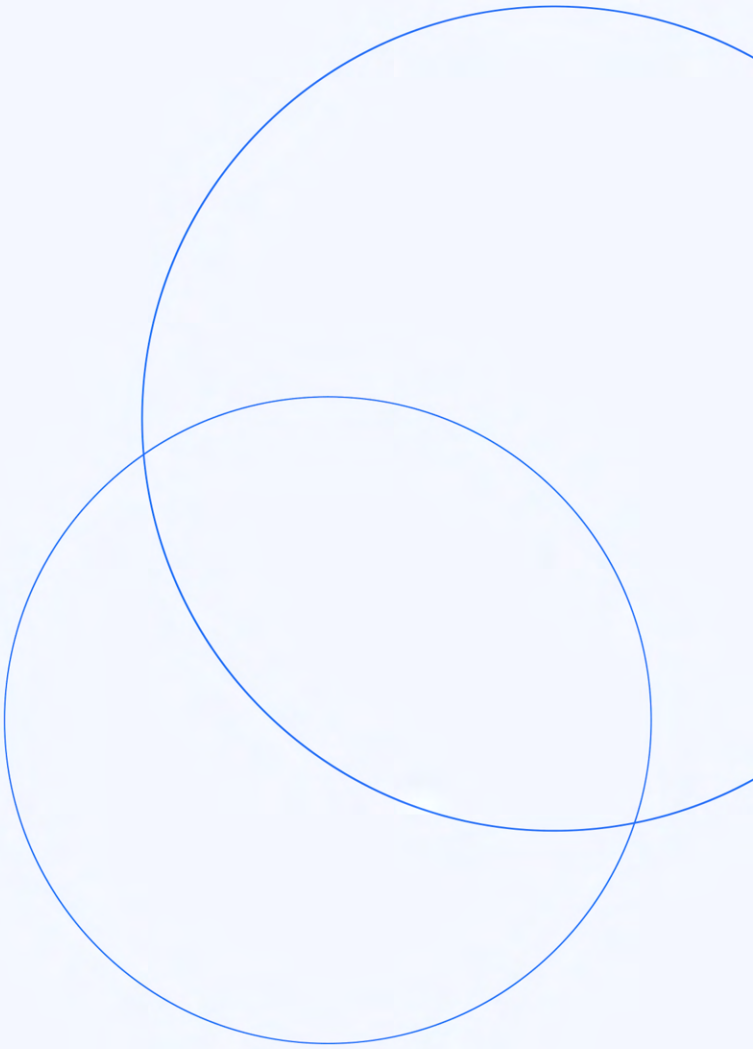
Going back to the need for **diversification**, an organization with 100% of its treasury in its native token would need to sell that token in order to generate short-term liquidity.

This raises three, of multiple, primary complications.

- **Downward pressure** on the token's market valuation. Selling large blocks into an otherwise stable market reduces the token's price, all else equal.
- **Capital loss** when selling into a down market; if the token has declined in price then selling for liquidity results in a loss.
- Invites the appearance that the organization offloading its own token has **lost faith** in its own project. Other sellers may follow, cratering the token price, or users may abandon the platform.

Liquidity exists in the form of cash. Cash, in the cryptocurrency ecosystem, exists in the form of dollar-pegged assets. Thus, liquidity is best maintained by holding a **diversified** basket of the most battle-tested such stable assets.

This selection may include the aforementioned names USDC and DAI or introduce other well-known dollar-pegged assets with **transparent collateral reporting.**



3. INCOME 💵

DeFi platforms can offer a range of treasury management services, including decentralized exchanges, lending and borrowing platforms, and yield farming opportunities. From these different avenues, a treasury may generate income through two methods:

- **Capital gains,** highlighted above, strives for the "buy low, sell high" approach. However, as seen in the case of my investment portfolio, this approach does not guarantee positive returns and often results in massive losses. It is a high risk strategy. That does not mean organizations must eschew asset speculation entirely, but rather that they should **diversify** to protect against market or asset downturns.

- **Yield bearing investments,** present an income strategy that, if selected properly, is insulated by market dynamics.

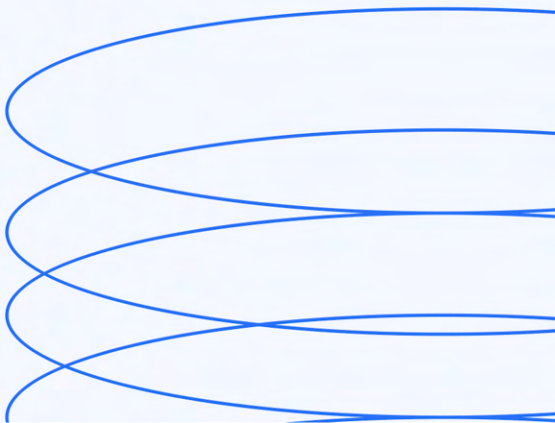
On Lido, for example, ~$5.8 billion ETH is staked earning 5.5% APR (as of 30 November, 2022). Similar options exist for other proof of stake chains such as Solana or Polygon.

Staked assets must be appropriately balanced against available liquidity due to lockup periods on many staking platforms and organizations. Lido and others do afford investors the ability to sell the staked assets on the secondary markets, but these assets are subject to the same risks as highlighted in the "capital gains" strategy.

A further, more stable, and often higher-yielding option is investing in a yield-generating platform such as Credix. On Credix, institutions and accredited individuals may generate ~12% targeted APY on USDC by investing in the Liquidity Pool which represents the Senior Tranche of all active deals in a marketplace. Credix deploys capital to traditional, off-chain FinTech lenders in emerging markets which then issue loans to SMEs and consumers.

This type of investment relies on a pegged-dollar asset, USDC, and extends the lion's share of risk outside the cryptocurrency market. Thus, it is a market diversification from holding an asset such as Bitcoin. Neither should comprise the entire treasury, but balancing one against the other helps mitigate risks.

This three-pronged approach to treasury management ultimately fails without proper diversification. A treasury focused 95% on capital gains income fails in capital preservation and liquidity as nearly all of its assets are in the riskiest strategy thus putting its capital at risk and limiting dependable liquidity. Likewise, a 95% idle USDC treasury is not generating income.



Diversification is the backbone of proper treasury management. Without a diversified allocation, a treasury puts the entire organization at risk of failure.

Regardless of whichever chains your organization uses, there is safety in diversity. While many Web3 teams may build on specific chains, and thus rely predominantly on one particular chain, Web3 CFOs should note that over-exposure to one particular chain presents its own risks.

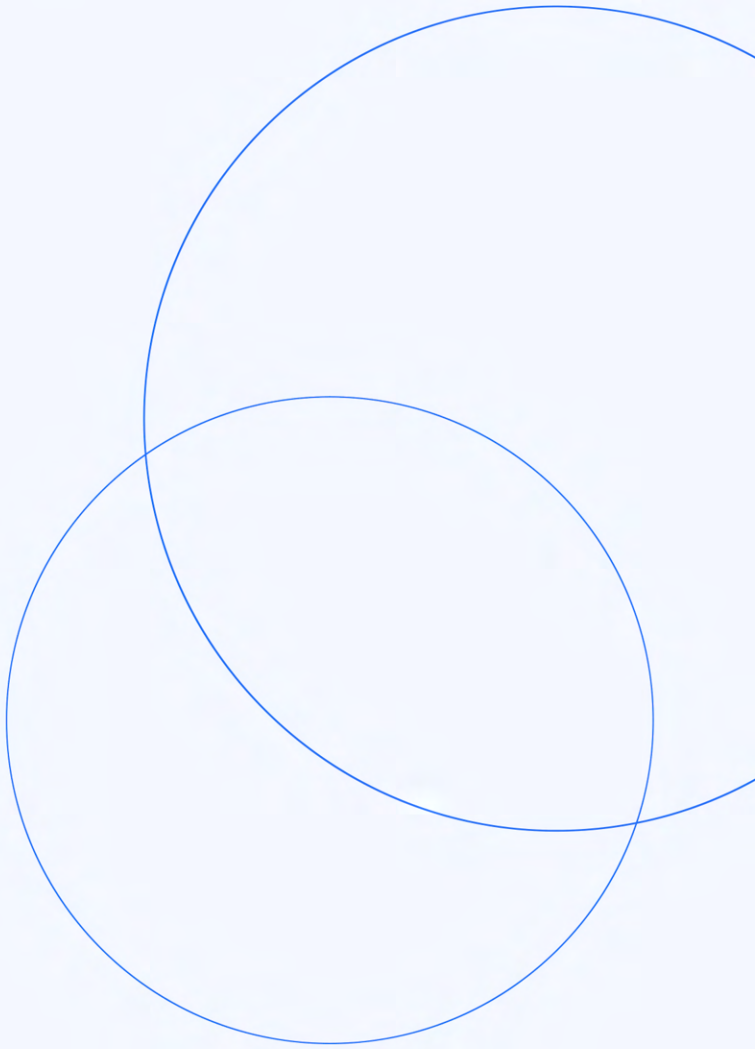
For instance, the collapse of Luna and UST wiped out many companies building dApps on Terra, and who held a large proportion of their company's treasury in assets on the Terra blockchain.

Web3 CFOs owe a fiduciary responsibility to its organizations core stakeholders, especially its team, users, and investors to protect the company's financial health - not a particular ecosystem or ill-defined sense of "community".

Balancing these three different concerns is a task that rests in part on the good judgment of Web3 CFOs, whom the management team can count on to act in the best interests of the company as a going concern. Hedging your crypto treasury's exposure should never be left to convenience, inertia, or an excess of blind optimism in any one particular chain.

Chains and their ecosystems are like countries. Failed chains are like failed economies in the real world: poorly governed banana republics where no one wants to visit, invest, or build in. The history of national economies - and blockchain economies is littered with gravestones to both.

Blindly trusting in a particular chain or assets on that chain would be the same as deciding to move your business, and all its assets into a newly-formed country in an emerging market. If doing so sounds like a terribly risky idea, Web3 CFOs at crypto companies building on particular chains should reflect on the prudence (or lack thereof) in doing so in the world of DeFi.



CHAPTER 8.0

Financial Reporting in Crypto

Despite the string of scandals in crypto, it presents an opportunity for new standards in financial reporting to emerge for enterprises and DAOs.

Financial reporting in crypto

The string of collapsed crypto companies culminating in the fall of FTX & Alameda has sent shockwaves through crypto. Despite the damage, the turmoil presents an opportunity for new standards in financial reporting to emerge for enterprises and DAOs.

For internal stakeholders like employees and management, financial reports are like a health screening. It can be used to **align teams, and inform decisions** throughout the organization. For external stakeholders like investors, users, and regulators - financial reporting is a matter of **compliance with local laws**, but also to **inspire public confidence** in the viability and financial health of an organization.

In this chapter, we will review key issues in financial reporting in crypto like:

- **Financial Statements**
- **Proof-of-Reserves (PoR)**
- **Accounting Standards for Crypto Assets**

Financial Statements

The financial health of a web3 company or DAO should be measurable through consistent financial reports and statements that **can be crafted on a regular basis**.

Just as a traditional company would regularly bookkeep and produce monthly/quarterly/annual financial statements, why should web3 companies and DAOs be any different?

If anything, CFOs can signal quality by a **proactive commitment from a Web3 firm or DAO to produce regular financial statements** internally and or to investors.

But producing financial statements can be a frustrating affair without the right tools. There are available enterprise grade crypto accounting solutions designed for web3 projects and other companies looking to incorporate crypto assets into their balance sheet.

Essential tools for setting up the complete back-office system for a web3 CFO include a solution for crypto accounting, AR/AP & payments, and payroll.

Ideally these solutions should integrate with one-another to maintain everything in one place.

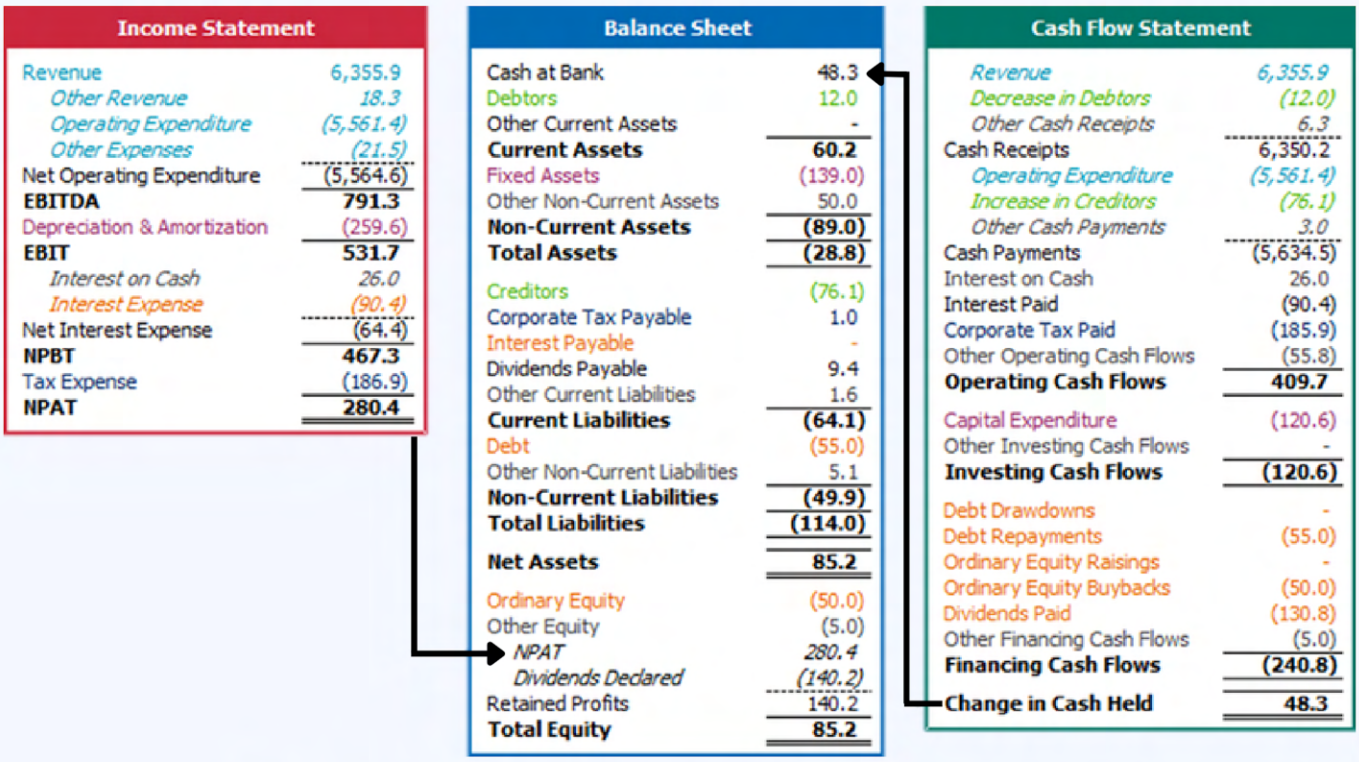


Fig 14. - Example illustrating links between the financial statements

As mentioned in the introduction to the Web3 CFO Guide, most, though not all CFOs working at Web3 organizations have prior experience.

For simplicity, the most basic financial reporting consists of three financial statements: income, balance sheet, and cash flow (Fig. 14).

The populating of the content within the financial statements then involves the systematic linking of information from each of the areas within the model, starting with revenue and working through expenses, debtors, creditors, assets, etc.

The practice of maintaining consistency in the creation of regular financial statements and thorough financial reports will prepare Web3 companies for auditors when they come knocking at the door.

Alternatively, Web3 CFOs at smaller organizations that may lack the in-house capabilities to manage financial reporting can consider outsourcing the work to crypto-native corporate services providers like BlockOffice.

"Working with crypto-native finance, accounting, and tax professionals can help Web3 teams focus on their internal processes and strategic issues".

- Christian Corrigan, CFO, BlockOffice

Proof of Reserves

Proof-of-Reserves (PoR) is an independent audit performed by a 3rd party to validate that a centralized entity's, or smart contract platform assets equal clients' funds. PoR allows the market to verify that industry giants are acting honestly, and are solvent.

A competitive advantage can be achieved by an on-chain PoR that matches assets against liabilities and details equity. The same is true for decentralized stablecoins. It's not enough to list assets.

PoR should detail cryptographic proof of client balances & wallet control. The public should also be able to see the sum of client liabilities, user-verifiable cryptographic proof that all wallets were included, & signatures showing a custodian has control.

Currently, PoR is most popular amongst exchanges, and other centralized **deposit-taking institutions or platforms** given that cryptoassets are often opaquely held in these centralized entities.

Of the largest centralized exchanges, Kraken Digital Asset Exchange has been known & respected for its a semi-annual PoR. Binance recently also announced plans to perform routine PoR audits in light of FTX imploding.

PoR should be an industry standard for DeFi, especially stablecoins & real world assets (RWA). If individuals/entities can't be certain that a protocol or stablecoin is backed as it claims to be, the market remains susceptible to systemic risks that harm DeFi adoption & innovation.

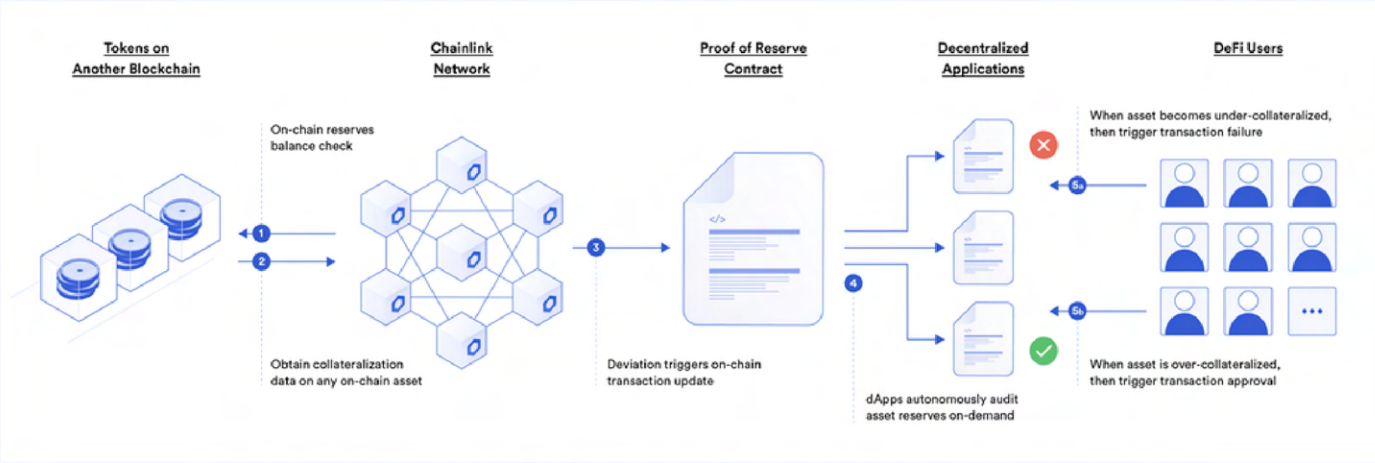


Fig 15. - Chainlink's PoR for auditing multi-asset collateralized tokens

For example, Chainlink's PoR service provides smart contracts with the data to assess collateralization of any on-chain asset backed by both: (i) off-chain and (ii) cross-chain reserves. Operated by a decentralized network of oracles, it enables the autonomous auditing of collateral in real-time, rather than forcing users to trust paper guarantees made by custodians. This can give DeFi platform users transparency into an asset's underlying collateralization (Fig. 15)

Accounting Standards

Accounting for crypto assets remains a highly-debated topic among bookkeepers and investors today.

While innovation in the crypto space is moving at a rapid pace, standard setters in the accounting industry have not had the same stamina to keep up. **With new crypto assets emerging all the time with varying properties, the task is monumental**, to say the least.

Current accounting standards had not been written with crypto assets in mind, and therefore, one must look at the existing accounting standards and apply a principles-based approach.

The two **prominent standard setters today are the IASB and FASB**, responsible for the development and publication of International Financial Reporting Standards (IFRS) and US GAAP accounting standards, respectively. While both seek to improve the transparency of financial reporting, **the accounting treatment of crypto assets will slightly differ under IFRS and US GAAP**, and should be applied according to the jurisdiction of the underlying entity.

In this guide, we aim to provide the salient approach under both frameworks for the following;

- **Initial recognition and subsequent measurement of crypto assets**
- **Fair value measurement of crypto assets**
- **Tax: calculating capital gains/losses**
- **Disclosure for crypto assets**

Note: this guide focuses on the accounting treatments when crypto assets are held under one's own account, rather than on behalf of third parties.

INITIAL RECOGNITION & SUBSEQUENT MEASUREMENT OF CRYPTO ASSETS

One of the main differences between accounting for crypto assets under IFRS and US GAAP, is that IFRS allows for accounting under Intangibles or Inventory, while under US GAAP, crypto assets can only be accounted under Intangibles.

The reasoning for arriving at a conclusion was to examine the nature of a crypto asset.

- **Is it cash?**

Cash must be used as a medium of exchange and a monetary unit for pricing goods and services.

Also, cryptocurrencies are not legal tender and are mostly not issued or backed by any government or state. Hence they cannot be recognized as cash.

- **Is it a financial asset?**

To be recognized as a financial asset, there must be a contractual right to receive cash or another financial asset. Again crypto assets do not meet the definition of a financial asset.

However, the exception would be for stablecoins, as explained under below conditions.

- **Is it a fixed asset?**

No, cryptocurrency is not tangible in nature but digital.

- **Is it an inventory?**

Inventories are not required to be in physical form, but inventory should consist of assets that are held for sale in the ordinary course of business. (IFRS - IAS2 'Inventories')

Therefore if your entity holds the crypto asset for an extended period of time and for investment purposes, it would likely not meet the definition of inventory.

- **Is it an intangible asset?**

If the crypto assets are acquired for investment purposes only, then it would fall under Intangibles.

(IFRS - IAS 38 'Intangible Assets', US GAAP - ASC 350 'Intangibles, Goodwill and other')

THE CURIOUS CASE OF STABLECOINS

While most crypto assets would fall under either intangibles or inventory, as outlined above, many stablecoins are not accounted for as crypto intangible assets. This is because stablecoins meet the definition of a financial asset if the contractual arrangement includes a right to receive cash from the issuer.

Understanding the redemption rights is essential to making this assessment, and classification under a financial asset would depend on the following non-exhaustive list;

- Legal form of the stablecoin,
- Redemption rights,
- Collateralization.

DIFFERENT ACCOUNTING TREATMENTS UNDER IFRS AND US GAAP

Given the nature of many crypto assets, they will, for the most part, have an indefinite useful life and are not amortized. Instead, they are tested for impairment annually (or more frequently if impairment indicators exist).

Under intangibles, if the carrying amount of a crypto asset exceeds its fair value, you must recognize an impairment loss in an amount equal to that excess. Once the intangible asset is impaired, the impairment loss is not reversed even if the fair value subsequently increases.

The gains are only recorded until the time of sale when they are realized. (that's the most controversial debate around recognizing crypto assets under intangibles)

Also, you are not allowed to combine the acquisition amounts of the same crypto assets across multiple dates to carry out an impairment test, and rather you should track the individual cost basis of each purchased crypto.

Tracking your impairment movements is important as it would show differing final results in your financial statements. The example below provides the entries when an entity tracks impairment instead of not tracking.

DAY 1: You buy 1 ETH for $1,000

Dr ETH - Cost basis $1,000
Cr - Cash $1,000

DAY 2: Price of ETH rises to $1,200

No entry

DAY 3: Price of ETH drops to $750

Dr Impairment exp. $250
Cr - ETH - Cost basis $250

DAY 4: Price of ETH rises to $900, and you sell the 1 ETH

Entry **with** previous impairment

Dr Cash $900
Cr - ETH - Cost basis $750
Cr - Trading gain $150

Entry **without** previous impairment

Dr Cash $900
Dr Trading loss $100
Cr - ETH - Cost basis $1000

DIFFERENT ACCOUNTING TREATMENTS UNDER IFRS AND US GAAP

Based on what we discussed above, below is a summary of the different accounting treatments allowed under IFRS and US GAAP:

Applicable Standard	Framework	Initial Measurement	Subsequent Measurement	Movements in carrying amounts
Inventory	IFRS (IAS 2)	Cost	Lower of cost and net realisable value	Movements above cost - N/A Movements below cost - P&L
Intangible assets - Revaluation model (Requires existence of active market)	IFRS (IAS 38)	Cost	Fair value less any accumulated impairment	Movements above cost - Other comprehensive income Movements below cost - P&L
Intangible assets - Cost model	IFRS (IAS 38)	Cost	Cost less any accumulated impairment	Movements above cost - N/A Movements below cost - Profit and loss
Intangible assets	US GAAP (ASC 350 'Intangibles, Goodwill and Other)	Cost	Fair value less any accumulated impairment	

FAIR VALUE MEASUREMENT OF CRYPTO ASSETS

Under IFRS and US GAAP, the fair value is “the price that would be received to sell an asset or paid to transfer a liability in an orderly transaction between market participants at the measurement date”. *(IFRS 13, US GAAP ASC 820)*

FAIR VALUE HIERARCHY

Fair values are divided into a three-level fair value hierarchy, based on the lowest level of significant inputs used in valuation models, as follows:

- **Level 1:** quoted prices in active markets for identical assets or liabilities that the entity can access at the measurement date;
- **Level 2:** observable inputs other than level 1 inputs; and
- **Level 3:** unobservable inputs.

CHALLENGES

Determining the fair value of crypto assets and providing a reliable and consistent audit trail can be challenging as the crypto asset markets;

- **Remain open 24/7**
- **Are not regulated**
- **Vary as to volume and frequency of trades**

With different exchanges quoting different prices, it’s important that you **maintain a consistent approach with regards to the pricing source of your crypto assets** where the greatest volume are being traded. Given markets never close, the recommended practice would be to **use the same time for pricing the assets**.

Crypto assets like Bitcoin, Ethereum are actively traded, and therefore will have an active market or a ’principal market’. An active market is one in which **transactions for the asset or liability take place with sufficient frequency and volume** to provide pricing information on an ongoing basis. The accounting standards do not define specific thresholds that need to be exceeded with regard to frequency and volume to determine if an active market exists. As such, the determination is subject to professional judgment.

Therefore, if an active market exists for that crypto asset at the measurement date, a Level 1 valuation can be performed. In the absence of an active market, the prescribed guidance is to use a valuation model that can be applied consistently from period to period.

TAX: CALCULATING CAPITAL GAINS & LOSSES

To make more informed investments and better manage risk, most finance managers actively track the unrealized gains/losses of their digital assets.

Calculating capital gains or losses also may be relevant where **taxation on capital gains** is levied. In some cases, **capital losses may be used to offset your tax liabilities**. Typically, only realised gains are relevant for tax reporting purposes.

Capital gains are usually calculated by taking the fair market value at the time of sale, minus the cost basis at which the crypto asset was acquired.

Thus, if your organization is domiciled in a jurisdiction where capital gains taxes are levied on crypto assets, it is important to understand how to assess your cost bases (i.e. what did it cost to acquire the asset) when calculating the profit or loss of transferring, selling, or spending a digital asset.

COST BASIS CALCUATIONS 🖩

There are several methods to calculate cost-basis, including:

- First In, First Out (FIFO)
- Weighted average cost (WAC)
- Last In, First Out (LIFO)
- Highest in, first out (HIFO)

These are summarized in the table below:

Cost-basis method	Explanation	Some countries that recognise this method.
First In, First Out (**FIFO**)	Assets acquired first are sold first.	Most commonly recognised method, including countries such as USA, Australia, Germany, Austria, Norway, Switzerland, Singapore
Weighted average cost (**WAC**)	Average price paid for all tokens of that cryptocurrency.	Second most frequently recognised method, including Canada, UK, France, Singapore
Last In, First Out (**LIFO**)	Assets acquired last are sold first.	Not as recognised, countries that permit this method include the USA and Australia.
Highest in, first out (**HIFO**)	Highest price assets are sold first.	Not as recognised, countries that permit this method include the USA and Australia.

Below, we will illustrate the impact that each of these methods have on the gains/losses. It is important to note that the explanation below is **referring to cryptocurrencies that are fungible**.

Consider the following example of Janet Saylor, CFO of MacroTactics, a Web3 fund:

- Janet bought 1 BTC in Jan 2017 for $1,000 per BTC
- Janet bought 2 BTC in Jan 2018 for $14,000 per BTC
- Janet bought 5 BTC in Jan 2019 for $3,500 per BTC
- Janet sells 2 BTC in Dec 2021 for $47,500 per BTC

With **FIFO method**, Janet would set her cost basis for the 2021's sale as $15,000:

- Capital gains on 2021's sale = ($47,500 x 2) - $15,000 = $80,000

With **WAC method**, Janet would set her cost basis for the 2021's sale as $11,625:

- Capital gains on 2021's sale = ($47,500 x 2) - $11,625 = $ 83,375

With **LIFO method**, Janet would set her cost basis for the 2021's sale as $7,000:

- Capital gains on 2021's sale = ($47,500 x 2) - $7,000 = $88,000

With **HIFO method**, Janet would set her cost basis for the 2021's sale as $28,000:

- Capital gains on 2021's sale = ($47,500 x 2) - $28,000 = $67,000

As seen above, HIFO often leads to **lowest capital gains** and hence tax liabilities. However, the FIFO methodology is the **most widely accepted** cost basis method. This is because it accounts for the frequent points of purchases and sale of crypto assets across accounting cycles. Discuss with your professional accountant when deciding on your preferred cost basis method.

OBTAINING CLEAN DATA FOR YOUR COST-BASIS CALCULATIONS

When maintaining your ledger of digital assets transactions, it is essential to review the following data points across each wallet type:

- Transaction fees
- Timestamping of transactions

Not accounting for these may result in erroneous data being used in calculating the cost-basis of your team's digital assets.

1. TRANSACTION FEES

When calculating the cost-basis of your digital assets, it is essential to account for the fees incurred in the transaction. It is essential to deduct the transaction fees when determining the cost of the said digital asset. Some of these fees include:

1. Gas fees charged by the blockchain protocol
2. Fees imposed by the wallet provider (usually by centralised wallets)

For each of these activities, it is important to understand the relevant fees involved in the process and account for it. See table below.

Activity	Explanation	Relevant fees
Revenue	Crypto being used as a payment method.	No fees if the tokens are automatically received into your wallet.
Deposits	Receiving tokens from another party.	No fees as the receiver of the deposit.
Withdrawal (from self-custody wallet)	Transferring tokens out from your team's wallet to another.	Gas fees incurred by the blockchain that the decentralised exchange is being built on. This is the transaction fee paid to network validators for the validation of this swap on the blockchain.
Withdrawal (from centralised custody wallet or exchange)		Withdrawal fees charged by the centralised wallet or exchange.
Swap (on a centralised exchange)	The exchange of token types between two parties via a centralised exchange.	Fees charged by the centralised exchange for executing the swap.
Swap (on a decentralised exchange)	The exchange of token types between two parties via a decentralised exchange.	Fees charged by the decentralised exchange are usually programmed in the smart contract of the decentralised exchange and automatically executed at the instance of the swap. Gas fees incurred by the blockchain that the decentralised exchange is being built on.
Yield Farming (a.k.a. Staking)	Obtaining additional crypto assets due to locking up crypto assets, i.e. staking, in a decentralised protocol or application.	Fees charged by the decentralised protocol or application. Gas fees charged at the point of withdrawing the rewards earned from the yield tenure.
Airdrop	Obtaining crypto assets due to being a qualified recipient in a campaign	No fees if the tokens are automatically deposited into the wallet. In the event that redemption of the airdrop is needed, gas fees incurred by the blockchain that the airdrop DApp is being built on. This is the transaction fee paid to network validators for the validation of this swap on the blockchain.

2. TIMESTAMPING OF TRANSACTIONS ⏱️

It is common for Web3 teams to have transactions involving both centralised exchanges and self-custody wallets. The good news is that for both centralised exchanges and self-custody wallets, users can quickly export their transaction records (e.g. via the central exchange's records or block explorers such as Etherscan).

However, **centralised exchanges and block explorers often mark the timestamp of transactions in different timezones**.

When compiling a chronological record of transactions across centralised and self-custody wallets, finance managers have to ensure the transactions are in the same timezone before compiling them into a master journal. This matters because cost basis methods such as FIFO require an accurate chronological order of transactions.

It is best to **keep all transactions to be in the same time zone**, be it UTC or the local timezone of the entity in which financial statements are prepared for.

Here are the default time zones for popular block explorers and centralised exchanges. (Updated as of Dec 2022)

Exchange or wallet that the transaction was made from	Source of transaction records & default timezone for transaction records
Self-custody wallets such as MetaMask, Ledger, Coinbase Wallet, Exodus, Phantom, Trust WalletMPC wallets such as Fireblocks, Qredo, FORDefi	Block explorers EtherScan: UTC BscScan: UTC Solscan: UTC SolanaFM: UTC PolygonScan: UTC
Centralised exchanges such as Binance, Coinbase, Coinhako, Gemini, OKX	Binance: local time following IP address Coinbase: UTC Coinhako: local time following IP address Gemini: UTC OKX: local time following IP address

When choosing a crypto-native accounting software, ensure that these adjustments for fees and timestamps are accounted for. For instance, Headquarters (HQ.xyz), enables CFOs to generate automatic records of the cost-basis, fees, and time-stamp adjustments for crypto transactions - across wallet types.

DISCLOSURE FOR CRYPTO ASSETS

As there are no explicit IFRS and US GAAP standards for crypto assets, the presentation and disclosure of crypto assets and crypto asset transactions should follow the entity's approach about the accounting model to apply to the crypto asset, i.e. as an intangible asset, inventory, a financial asset or otherwise.

However, such **disclosures require significant judgement** and a thorough understanding of the underlying facts and circumstances.

For example, below are the summarized disclosure details of Microstrategy for their Bitcoin holdings in the annual report 2021 (note (g) to consolidated financial statements);

- The Company determines the fair value based on quoted prices on the Coinbase exchange, the active exchange that the Company has determined is its principal market,

- The Company performs an analysis each quarter to identify indicators for impairment,

In determining if an impairment has occurred, the Company considers the lowest price of 1 Bitcoin quoted on the active exchange at any time since acquiring the specific bitcoin held by the Company.

Financial reporting in crypto

BEST PRACTICES

Maintaining transparency and openness in financial reporting will help to build trust with investors, regulators, and other stakeholders.

Below are four tips on how web3 companies and DAOs can optimize their corporate financial reporting.

By following these best practices, CFOs can ensure that their company's financial reporting is accurate, compliant, and transparent when using cryptocurrencies in its financial operations.

1. LEVERAGE TECHNOLOGY 🦾

Implement robust accounting and tax systems that are capable of handling cryptocurrency transactions.

This may include **integrating specialized software or hiring external experts** like BlockOffice to assist with the accounting and tax reporting of cryptocurrency transactions.

Web3 companies can take advantage of accounting software such as QuickBooks or Sage Intacct to manage their corporate financial reporting.

This software will allow companies to handle their accounts payable, accounts receivable, and payroll quickly and efficiently.

This can include using cloud-based crypto accounting platforms like Cryptoworth, utilizing data analytics to gain insights, and utilizing crypto-powered AR/AP and payment solutions like Request Finance.

Corporate level financial solutions designed for web3 in the marketplace can be evaluated by their cross-functionality capability between applications.

The right tools can dramatically simplify financial reporting in crypto for Web3 CFOs.

Crypto financial reporting and tax compliance is very difficult to accomplish at scale without a practical crypto bookkeeping solution to consolidate cryptocurrency transactions in one place.

Sophisticated back-office solutions exist for web3 companies and DAOs to enable scalable crypto financial reporting and compliance.

The core requirement for the ability to produce meaningful financial reports from a corporate level crypto operation is through **a bookkeeping solution designed specifically for cryptocurrency transactions**.

Tracking cryptocurrency transactions is an entire challenge on its own due to the complexities that come with blockchain and its technical diversity.

Meaning, such a solution would need to be capable of tracking transactions and other crypto data from the following sources:

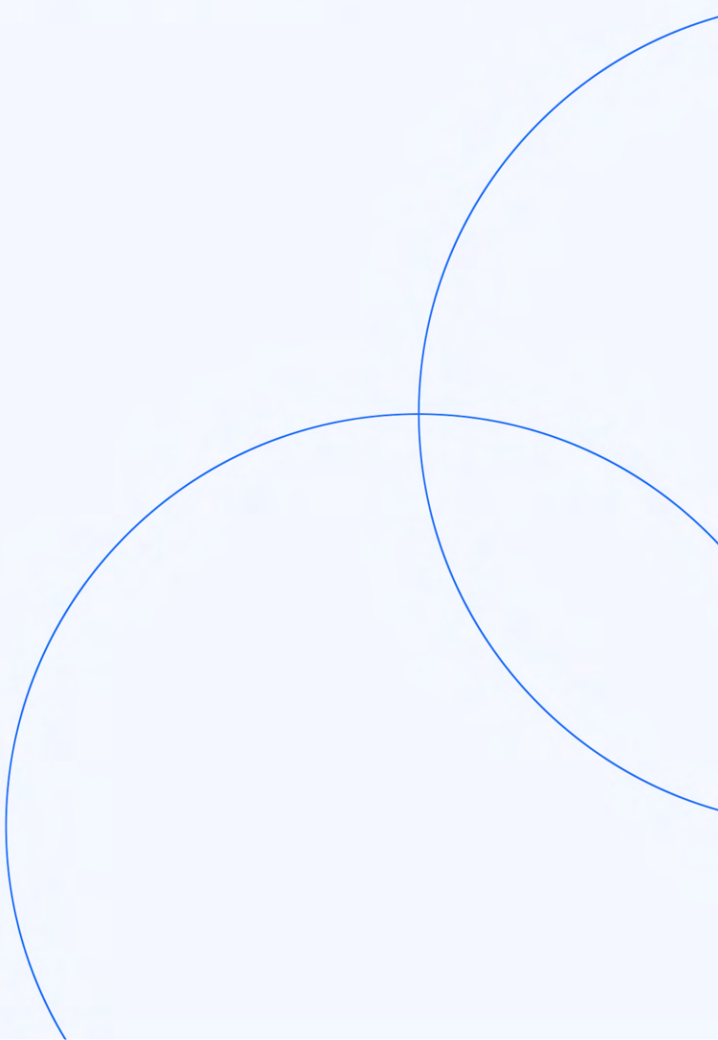
- Exchanges
- Blockchains
- DEXs
- DeFi Protocols
- NFTs
- Neobanks
- Crypto Payments & AR/AP
- MPC-enabled Custody Solutions

With the data sources being supported, the next challenge is data injection. This means how the back-office bookkeeping solution can actually receive the data itself in a secure Read-Only way while having the required dataset for a comprehensive ledger.

There are **three possible data injection methods** that need to be supported in order to support every crypto data source available.

- Read-Only APIs
- Blockchain support (more chains the better)
- CSV support (including a solution native template)

If the above data injections are all available within the back-office crypto accounting solution, there will always be a way to inject the data.



2. DEVELOP A FINANCIAL STRATEGY 🎯

- Companies should create a comprehensive financial strategy that outlines their goals, objectives, and strategies for managing their corporate financial reporting. This strategy should cover topics such as budgeting, cash flow, taxes, and financial forecasting.

- Regularly review and update the company's financial reporting processes and policies to ensure compliance with the latest regulations and best practices. This may include conducting regular internal audits and consulting with external experts as needed.

3. ASSIGN RESPONSIBILITIES 👷

- Companies should assign specific financial reporting responsibilities to members of their organization. This will ensure that all financial documents are accurate and timely.

- Stay informed about the latest developments and regulations regarding cryptocurrencies in your country and region. This will ensure that your financial reporting is compliant with the law and avoid potential penalties or fines.

- Consider implementing a risk management framework to identify, assess, and mitigate any potential risks associated with specific cryptocurrencies, and platforms.

4. REVIEW FINANCIAL STATEMENTS 🔎

- Companies should review their financial statements regularly to ensure that they are accurate and up-to-date. Doing so will enable them to make informed decisions about their finances and identify potential issues.

- Keep track of the current market value of cryptocurrencies held by the company, and adjust the value of the assets in the financial statements accordingly. This will help to accurately reflect the company's financial position and avoid potential reporting errors.

- Ensure that all cryptocurrency transactions are properly documented and recorded in the company's financial records. This includes keeping track of the date, amount, and type of transaction, as well as the relevant wallet addresses and transaction IDs.

Concluding Thoughts

As we look back on the events of 2022, it's clear that significant challenges and opportunities lie ahead for CFOs leading crypto and DeFi organizations.

First, 2022 saw **the continued growth and adoption of DeFi platforms**. We can expect to see more companies and individuals using these platforms to manage their financial assets and conduct transactions without the need for traditional financial intermediaries.

We have also seen the **continued development of broader Web3 technologies**, which enable users to interact with decentralized applications and protocols more seamlessly.

2023 will certainly present challenges and opportunities for Web3 CFOs. One of the biggest challenges will be **the need to understand and navigate the complex and rapidly evolving landscape** of Web3, crypto, and DeFi.

CFOs will need to develop a deep understanding of these technologies and their potential implications in order to make informed decisions.

Another challenge will be the need for Web3 CFOs to ensure compliance with **increasingly complex and varied regulatory frameworks** around the world.

Despite these challenges, there are also significant opportunities for Web3 CFOs. One of the biggest opportunities has, and will continue to be the ability to **access new sources of liquidity and funding** through DeFi platforms. CFOs will be able to use these platforms to raise capital and manage their financial assets in new and innovative ways.

Perhaps most of all, **a natively global system of finance and commerce** can allow DAOs, DeFi platforms, and Web3 teams to hire, operate, and grow at a scale and reach unprecedented in economic history.

By staying up to date with the latest developments, developing a deep understanding of these technologies, and working closely with legal and compliance teams, Web3 CFOs can navigate the challenges and take advantage of the opportunities that lie ahead.

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