OliverWyman

WILL WEB3 REINVENT INSURANCE?

Why it's time to pay attention

Reinventing Insurance series

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WEB3

While there is some hype surrounding digital assets, decentralized finance, and Web3, there is also substance that has the potential to fundamentally transform parts of our modern financial system.

We believe it's time for insurers to pay attention. 40 million people in the US reported investing, trading or using cryptocurrencies in 2021 (as compared to 5 million in 2015).[1] Venture capitalists are increasing their investments in crypto infrastructure and Web3 companies. The US is developing a comprehensive policy framework.[2] An increasing number of insurers are entering the space, and new decentralized autonomous organizations (DAOs) are being founded every day.

WHY IT'S TIME TO PAY ATTENTION

The industry refers to Web3 as a new version of the Internet that is inspired by blockchain technology, often with the purpose of enabling decentralized processes and decision-making. We think this definition is too narrow — and prefer to use the concept of the **Web3 economy, which represents the broader financial ecosystem associated with Web3.**

There are many scenarios for how the Web3 economy will evolve, especially with reference to data in this rapidly changing market. This paper seeks to go beyond the "headline of the day," or prospects for any individual cryptocurrency or digital asset, and explores the broader Web3 opportunity for insurers.

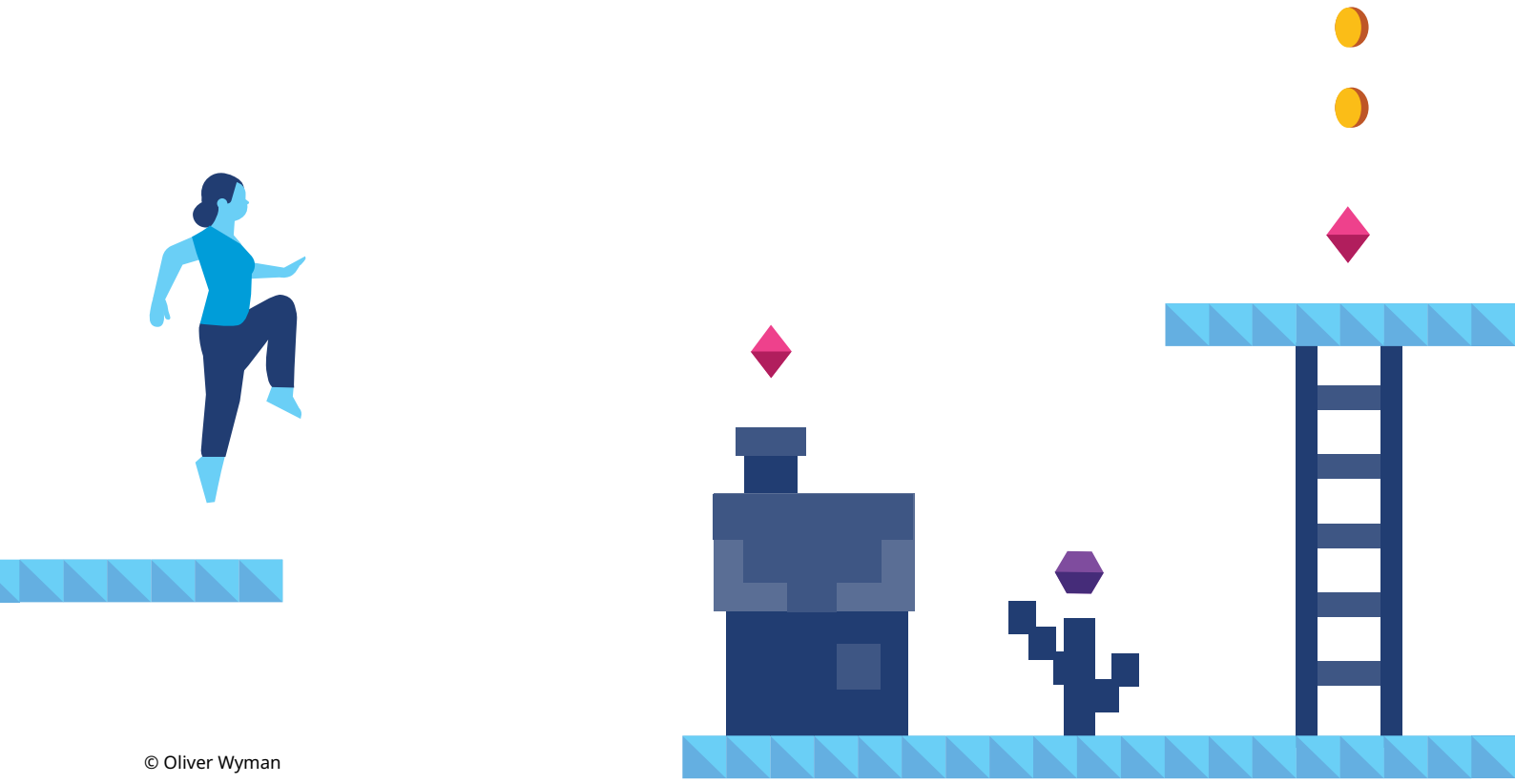
40 million people in the US reported investing, trading or using cryptocurrencies in 2021 (as compared to 5 million in 2015)

We see two main dimensions of the Web3 opportunity for insurers:

First, the Web3 economy is currently under-insured and has huge potential for future growth. Today, out of $1 trillion in crypto assets, less than 1% are insured.[3] There is significant unmet demand from retail and institutional investors, as well as businesses. The key questions are what risks companies can prudently underwrite — and what companies will win the race to achieve scale.

Second, companies can leverage Web3 technology to reinvent the insurance value chain, creating propositions and business models that are better, faster, and cheaper. In the near-term, Web3-based propositions can help insurers reach new customers and address unmet customer needs. In the longer-term, **Web3 offers the potential to reimagine business models that radically challenge what an insurer can look like.**

How should insurers navigate the Web3 landscape? This paper provides a practical guide for insurance executives to help separate hype from reality, create a structured way of classifying and assessing opportunities, and arm leaders with a set of key questions to guide their deliberations on what strategic moves they should make.



TERMINOLOGY

BLOCKCHAIN: the underlying technology that allows data (that is agreed to and recorded) and digital assets to be transferred without a central counterparty via distributed ledger technology.

DIGITAL CURRENCIES: cryptocurrencies, such as bitcoins, stablecoins, and central bank digital currencies (CBDC).

NON-FUNGIBLE TOKENS (NFTS): unique tokens stored on the blockchain that represents a digital or physical asset with unique identification codes and metadata (e.g., property, art, event tickets, governance rights, company shares).

SMART CONTRACTS: contracts with the terms of the agreement between buyer and seller directly written into code that can be automated to be "self-executing."

ORACLES: bring third-party or real-world data onto the blockchain, allowing smart contracts to execute.

DIGITAL CURRENCY/NFT HOLDERS: people and institutions who own and use digital assets.

DECENTRALIZED FINANCE (DeFi): financial services (e.g., payments, lending, exchanges) that are provided using smart contracts, without relying on centralized intermediaries.

WEB3 ORGANIZATIONS: companies that start digital asset businesses (e.g., bitcoin miners, stablecoin issuers, DeFi platform providers), including decentralized autonomous organizations.

DECENTRALIZED AUTONOMOUS ORGANIZATION ("DAO"): a group of people who agree to follow a set of rules that are encoded on the blockchain; decisions are made collectively (e.g., via governance tokens that provide voting rights).

MINERS/VALIDATORS: individuals or organizations who approve blockchain transactions.

METAVERSE: a simulated digital environment that incorporates virtual reality, augmented reality, and blockchain.

WHAT IS

The industry refers to Web3 as a new version of the Internet that is inspired by blockchain technology, often with the purpose of enabling decentralized processes (e.g., validation of crypto transactions) and decision-making (e.g., without a central counterparty).

We prefer to use the concept of the Web3 economy, which represents the broader financial ecosystem associated with Web3. This economy exists in parallel with the "traditional" economy, including many areas of overlap (e.g., using digital currency to purchase real-world goods).

THE WEB3 ECONOMY?





	STAKEHOLDERS *Who needs to be insured?*	MONETARY ASSETS *In what currencies are transactions made?*	NON-MONETARY ASSETS *What could require insurance?*	INFORMATION TECHNOLOGY *What is the technical infrastructure behind it?*	FINANCIAL SERVICES PROVIDERS *What is the financial infrastructure behind it?*
TRADITIONAL ECONOMY EXAMPLES	Individuals or corporations	Fiat (e.g., USD, Euro)	Houses Cars Warehouses Business operations	Phone Internet Email Servers	Banks Insurers Stock markets
WEB3 ECONOMY EXAMPLES	Individuals or corporations holding digital currencies and/or Web3 assets (e.g., NFTs)	Digital currency (e.g., cryptocurrencies stablecoins, CBDCs)	Non-fungible tokens (NFTs) tied to physical or digital assets Web3-enabled operations (e.g., DAO infrastructures)	Blockchain Smart contracts Oracles Decentralized applications	Centralized exchanges Decentralized finance (DeFi) platforms Web3-enabled insurers

IT'S TIME TO PAY ATTENTION

While there remain many scenarios for how the Web3 economy will evolve, in the last year there has been a step change in terms of customer demand, venture capital (VC) and institutional involvement, and government focus. Insurers are also increasing their engagement with Web3, including exploring the development of innovative products and services.

Customer demand: Customer awareness and the use of digital assets has increased significantly over the last few years. **One 2021 survey found ~40 million adults in the US have used cryptocurrencies (vs. 5 million in 2015).[4] In parallel, the market value of digital assets has increased from ~$5 billion in 2015 compared to nearly $1 trillion in 2022;[5]** however, less than 1% of these assets are insured today.[6] Retail and institutional investors or businesses who want to participate in the Web3 ecosystem face significant risks, both financial (e.g., volatility of crypto assets) and non-financial (e.g., theft, fraud, regulatory issues, technology/cyber risk). These risks represent a commercial opportunity for insurers, assuming that they can be managed prudently.

VC and institutional investment: Venture capital (VC) investment in companies that are part of the Web3 economy grew to more than $30 billion in 2021 (double the combined investment from 2018 to 2020).[7] More than 40% of this funding is focused on building the emerging financial infrastructure around digital assets — particularly trading, exchange services, investing, and lending.[8] In parallel, institutional adoption is growing. Last year, institutions traded more than 1 trillion of cryptocurrencies on Coinbase, a leading digital currency exchange, more than double the total for retail investors (and 10x the 2020 amount).[9]

"Web3 native insurer" Nexus Mutual launched in 2019, and provides ~$400 million in cover today

Regulation: Regulators are also beginning to provide more clarity around Web3, with a wider range of approaches across countries — from China banning cryptocurrency trading and mining, to countries like El Salvador, where bitcoin has been declared legal tender.[10] Nine countries have launched central bank digital currencies (CBDCs), and nearly 100 countries are investigating in doing so.[11] In March 2022, President Biden issued an executive order outlining key priorities to regulate digital assets and cryptocurrencies, with a focus on balancing responsible innovation with mitigating risks around customer and investor protection, national security, financial stability, and climate.[12]

Competitive landscape: Several insurers have entered the Web3 space so far; however, capacity remains limited (both in terms of companies offering insurance and the risks covered). There may be significant competitive advantages for early adopters, including against fast-growing "Web3 native insurers" (e.g., Nexus Mutual launched in 2019, and provides ~$400 million of cover[13]). Early entrants also have the opportunity to play an outsized role in shaping the market infrastructure and enabling more widespread adoption of digital assets.

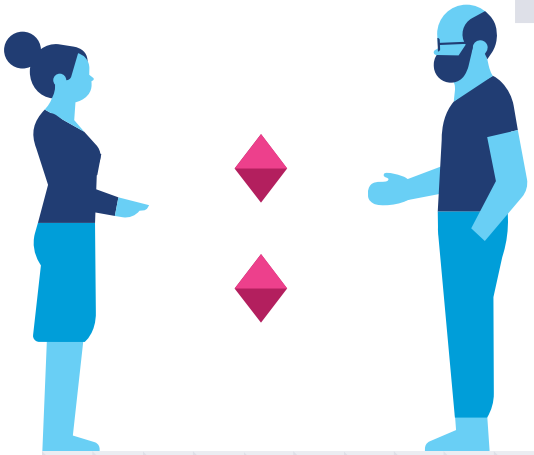
More than 100 countries are exploring central bank digital currencies

Innovative products and services: Web3 and blockchain-based technology offers exciting new possibilities to innovate across the value chain and create new customer value propositions. For example, Lemonade recently announced a partnership to provide blockchain-based weather insurance to farmers in Africa.[14] Farmers can purchase a parametric "smart contract" (vs. a traditional insurance policy) using either local currency or stablecoins. The contract automatically pays the claim amount if there is a certain amount of rainfall, evaluated based on a third-party data sources (referred to as oracles). Using Web3 enables transparency, fully "permissionless" contracts, and makes it easy and more cost-effective to offer low denomination policies.

VC investment in Web3 companies doubled in 2021, to more than $30 billion

HAVE YOU USED BITCOIN CRYPTOCURRENCIES?

YES



2015	1%
2021	16%

Increased from ~5MN to ~40MN adults

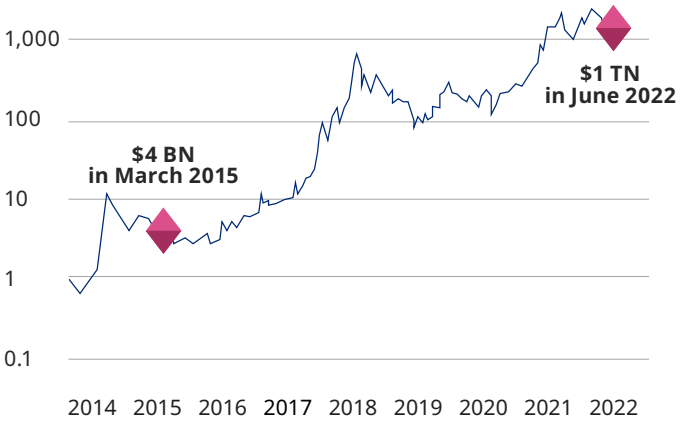
INTERNET USERS WITHIN THE UNITED STATES 1990–2008

1990	1%
1996 +6 years	16%
2002 +12 years	59%
2008 +18 years	74%

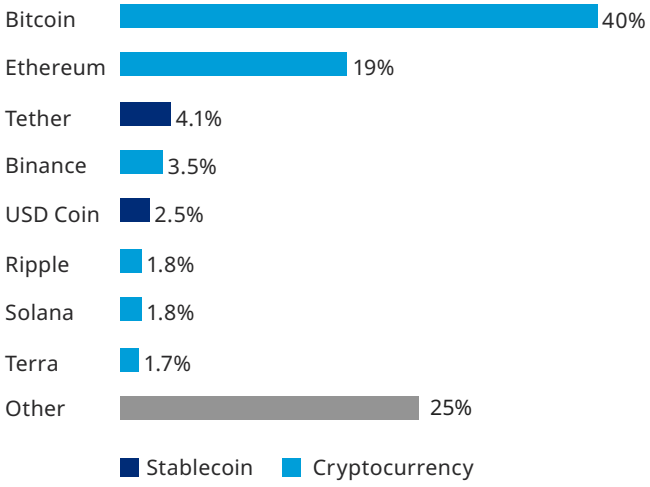
To date, there have been parallels between Internet adoption and Web3 adoption rates

RAPID INCREASE IN WEB3 ASSETS

Cryptocurrency Market Capitalization
Logarithmic scale, 2014–2022, US$ BN



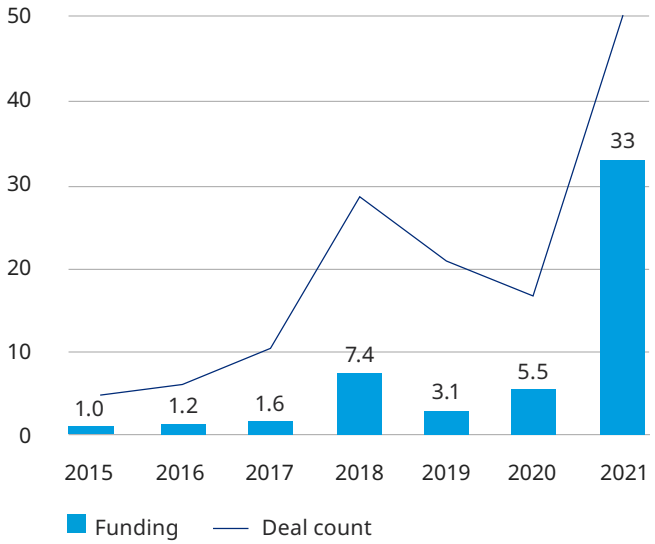
Market share for top cryptocurrencies, April 2022
Based on market capitalization



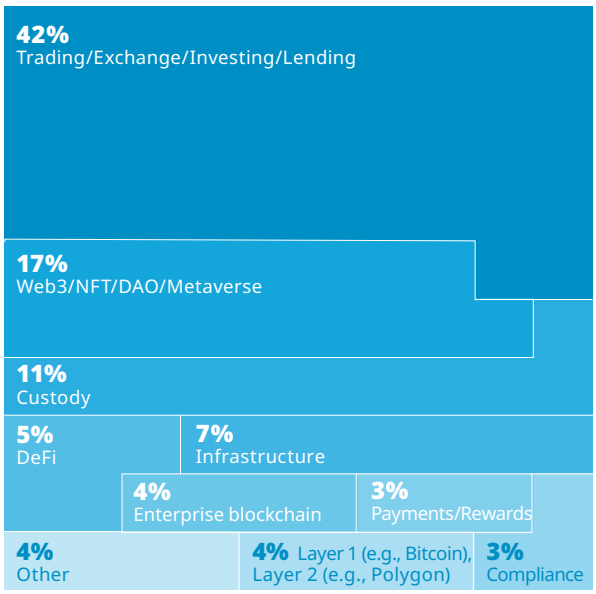
Source: CoinMarketCap, CoinGecko

GROWING VC INVESTMENT IN THE WEB3 ECONOMY

VC investment in Crypto/Web3 companies, 2015–2021
Funding (US$ BN) and deal count



2021 VC investment in Crypto/Web3 companies by category



Source: PitchBook, Galaxy Digital Research

WEB3 PRIMER
FIVE KEY QUESTIONS

1

WHAT EXACTLY IS WEB3?

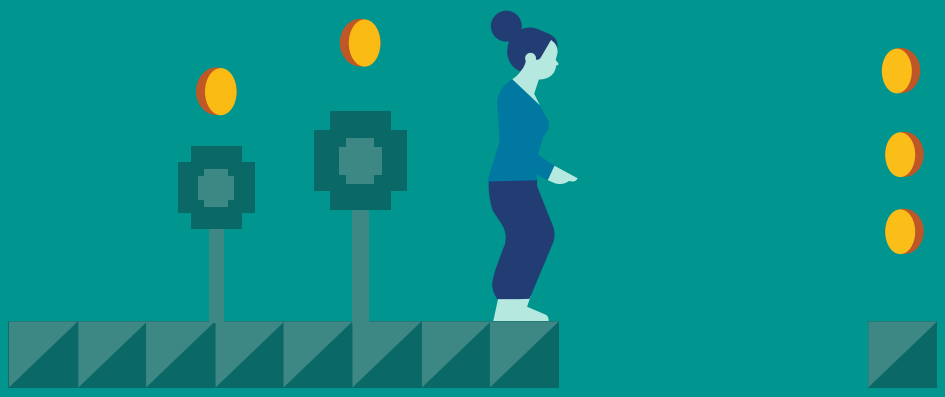
Web3 refers to a new iteration of the Internet that is built on blockchain technology

Although the term has been used quite expansively, Web3 most simply refers to a new iteration of the Internet that is built on blockchain technology. Within a business context, Web3 is often discussed as an enabler of decentralized economic activity, including digital assets (e.g., NFTs) and cryptocurrencies.

In the public discourse, Web3 is often described as a way of shifting power away from centralized authorities, such as big tech companies, by enabling users to own and govern assets in a collective, decentralized manner. A prime example is the use of decentralized autonomous organizations (DAOs), entities that are governed by their members through rules enforced digitally, based on the votes of members on the blockchain.

In the context of developments over time, Web1 in the 1990s was ‘read;' Web2 was ‘read-write;’ and led to the development of social media and Big Tech. Web3 is ‘read-write’ plus ‘own, exchange, and 'execute'. Users take control of their identities and exchange value which is held independently of central repositories through self-executing smart contracts.

It remains to be seen whether the impact of Web3 and the degree of decentralization on social and economic activity will be as broad as its advocates strive for. As with any new technology, the exact parameters of Web3 will become more sharply defined as individuals, companies, and governments discover the optimal ways to leverage Web3.



2

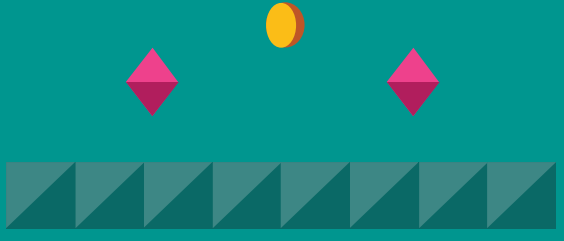
IS WEB3 HERE TO STAY?

While there is some hype, Web3 technology is here to stay.

Critics of Web3 assert that it is more hype than reality, and that the wave of euphoria and attention Web3 has received will slowly recede if and when cryptocurrencies fall out of favor with investors.

Cryptocurrencies do play a critical role in the Web3 ecosystem as a store of value and a medium of exchange, and many of the most popular Web3 use cases have focused on cryptocurrency trading. However, the potential use cases of Web3 are potentially much broader and could encompass other facets of financial services. Ultimately, the technology of Web3 does not rely on the value of any one use case or cryptocurrency, just as the first iteration of the Internet did not depend on the success of any single website.

It's hard to imagine a world in which Web3's technology doesn't lead to innovation in financial services given the massive influx of talent and capital that has been poured into the space. However, it also seems unlikely that Web3 will completely upend the financial system as we know it. While there are many possible scenarios for how Web3 will evolve, regulation will likely play a key role in defining the "rules of the game," and the ultimate degree of decentralization.



3 WHAT'S CHANGED, DIDN'T WE TALK ABOUT BLOCKCHAIN FIVE YEARS AGO?

Web3 has attracted significant attention in the last few years, which has driven market activity and growing consumer adoption.

Since the introduction of blockchain over a decade ago, decentralized ledger technology has received considerable attention from financial services companies for its potential to disintermediate and disrupt the industry. In response, incumbents have taken individual and collective action to study blockchain's potential and harness its power to generate efficiencies and find new sources of growth.

Several early projects by incumbents focused on blockchain-enabled parametric insurance products, such as travel cancellation insurance. Many of these products struggled to hit commercial targets, contributed to in part by limited distribution channels for Web3-related offerings. These experiments also highlight the importance of developing value propositions that address specific customer problems (vs. developing a Web3 product just because its possible).

Meanwhile, industry consortia dedicated to exploring blockchain technology, such as the Blockchain Insurance Industry Initiative (B3i) have attracted a broad set of market participants. B3i has explored several different use cases, most notably reinsurance settlements,[15] but its scope has largely remained focused on blockchain-based applications (vs. the broader Web3 economy).

Since this initial wave of efforts, the Web3 economy has significantly expanded and matured. The past two years has featured massive growth in the adoption of digital assets and currencies, as well as new applications and use cases. The decentralized finance (DeFi) ecosystem has also matured, with a range of applications and use cases (including exchanges, payments, lending, derivatives, and insurance). In addition, the number of developers working on Web3-related efforts has increased, with double the number of monthly active developers from 2020 to 2021.[16]

4 HOW BIG IS WEB3 ANYWAY?

Web3 is currently relatively small, but has the potential to grow quickly if Web3 expands beyond early adopters.

The Web3 economy has a large and quickly expanding user base when taking into consideration the number of people engaging, using, trading, or investing in cryptocurrencies. There are approximately 300 million owners of cryptocurrency owners globally.[17] In parallel, the market value of digital assets has increased from ~$5 billion in 2015 as compared to nearly $1 trillion in 2022.[18]

The percentage of US adults who reported using cryptocurrencies increased from 1% in 2015 as compared to ~15% in 2021.[19] Interestingly, this mirrors the rate of adoption of the Internet from 1990 to 1996 (there was a similar increase from 1% to 16%).[20] If cryptocurrency adoption continues at the same pace, it is possible that the majority of Americans will have used cryptocurrencies by 2026. However, in order to do this, the current user base will need to diversify (which is currently disproportionally young and male).[21]

5 WHAT ARE THE CHALLENGES?

The average consumer has yet to engage with the Web3 economy, but this is as much an opportunity as a challenge.

To sustain its momentum and achieve even a fraction of its potential, the Web3 economy will need to address some of the most significant barriers to widespread adoption.

Foremost among these is the fact that Web3 is still challenging to navigate for many prospective users. The onboarding process for a typical user (even on a centralized exchange like Coinbase) is moderately complex — including setting up and securing a 12-digit password ("key"); providing a separate identity verification process; and funding the account (which can be subject to transaction or "gas" fees). The technical sophistication required increases rapidly for users who want access to more sophisticated use cases (such as decentralized finance — DeFi).

Web3 also continues to be plagued with security issues — with more than $3 billion stolen from individuals and services in 2021 alone.[22] And the industry must continue to mitigate its outsized environmental impact, as every Bitcoin transaction requires the same amount of power as more than 1 million credit card transactions.[23]

While some view these hurdles as major risks to the Web3 survival, other incumbents and startups see them as opportunities. These firms will be at the forefront of shaping the future Web3 economy and developing new use cases that can drive broader interest and adoption.

THE WEB3 OPPORTUNITY FOR INSURERS

Web3 is going to be an increasingly large opportunity for insurers, and we see two main dimensions painting the Web3 opportunity landscape.

Dimension 1

INSURING THE WEB3 ECONOMY.

There is a substantial opportunity to insure the fast-growing Web3 economy. This includes a wide range of Web3-related assets (e.g., digital currencies, NFTs) and liabilities (e.g., business liability, professional liability of Web3 companies and risks). The taxonomy of potential risks awaiting cover is also broad.

Dimension 2

USING WEB3 TO REINVENT THE INSURANCE VALUE CHAIN.

The second dimension is the opportunity to develop new Web3-based propositions and business models. It's worth noting that Web3 technology and capabilities can also be used to provide insurance in the "traditional economy," as well as in the "Web3 economy."

Insurers have already begun experimenting across both dimensions. For example, a number of cryptocurrency exchanges have contracted large theft insurance policies that protect them and their users (for a limited number of risks). Insurers have also begun using "smart contracts" to automate policies for certain types of risks where third-party data can be used for the real-time evaluation of claims (for example, travel insurance).

In the future, we expect the scope of "insurable" Web3 assets and risk types to increase as insurers deepen their understanding of the risks involved. We are starting to see examples of insurance for smart contracts, but it would also be possible to imagine providing insurance for houses in the metaverse. There are also significant opportunities for business model innovation. For example, imagine creating a fully decentralized insurance platform similar to the Apple App Store where anyone could submit their own insurance product.

Dimension 1

INSURING THE WEB3 ECONOMY

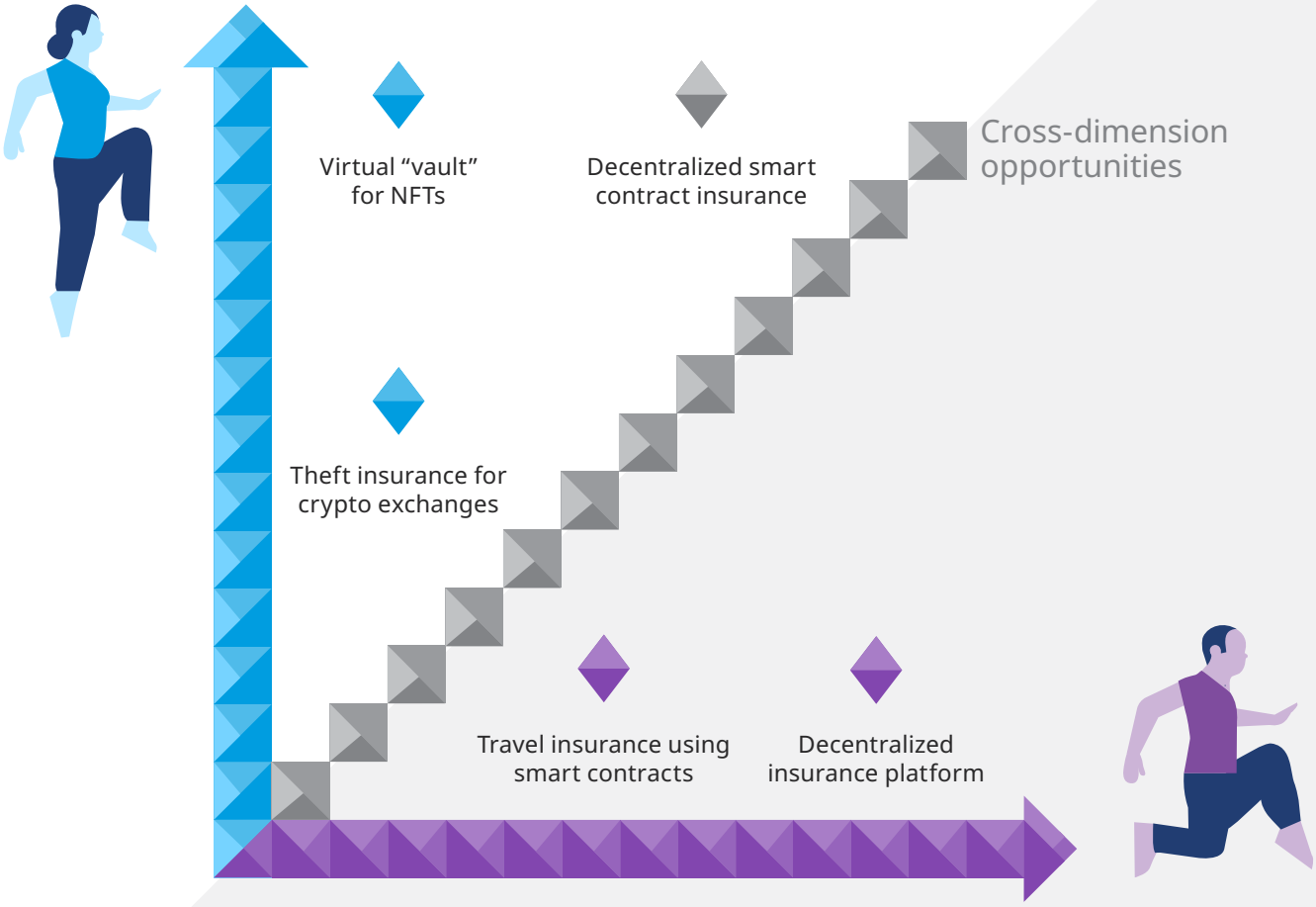
Why insurance for Web3 has attractive growth potential

1A Significant unmet demand for insurance from retail/ institutional investors and businesses +

1B Evolving landscape of Web3 assets and liabilities that can be insured +

1C Scope of "insurable" Web3 risks are expected to increase over time +

1D Many players are beginning to launch coverage; who will win the race to achieve scale?



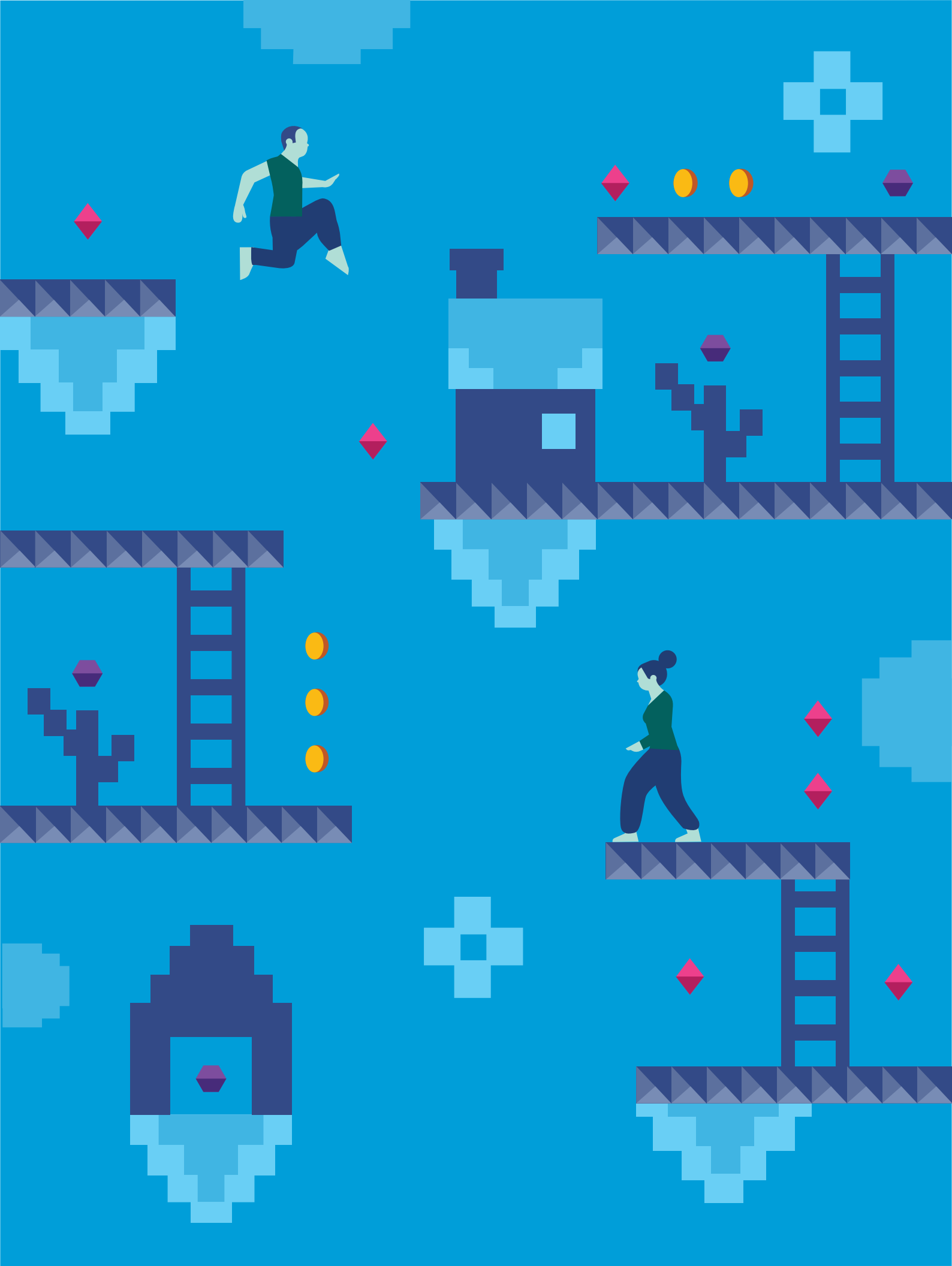
Dimension 2

USING WEB3 TO REINVENT THE INSURANCE VALUE CHAIN

2A Web3 can potentially make existing insurance products and processes better, faster, and cheaper +

2B Insurers can develop new customer-focused value propositions using Web3 capabilities +

2C The longer-term potential to imagine new Web3-based business models



Dimension 1

INSURING THE WEB3 ECONOMY

Why insurance for Web3 has attractive growth potential

1A Significant unmet demand for insurance from retail/ institutional investors and businesses +

1B Evolving landscape of Web3 assets and liabilities that can be insured +

1C Scope of "insurable" Web3 risks are expected to increase over time +

1D Many players are beginning to launch coverage; who will win the race to achieve scale?

The Web3 economy is currently under-insured and has huge **potential for future growth**

There is a significant market opportunity for insurers to provide coverage for the Web3 economy, assuming the risks can be managed prudently. Today, out of $1 trillion in Web3 assets, fewer than 1% are insured (one recent study estimated ~$6 billion Web3 assets insured today[24]).

Insurance can also play an important role in increasing broader adoption of Web3. As referenced earlier, approximately 15% of people in the US have used cryptocurrency (what technologists typically refer to as "early adopters"). Increasing the safety and security of Web3 could make it more accessible to mainstream consumers (e.g., particularly the next 40% of people who make up the "early majority," who are more pragmatists than visionaries).

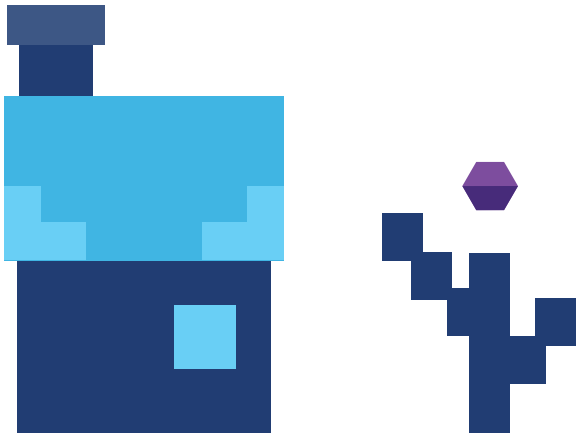
1A Significant unmet demand for insurance from retail/ institutional investors and businesses

We expect there will be two main customer groups — investors and businesses — interested in obtaining protection against Web3-related risks.

First, an increasing number of retail and institutional investors have Web3 assets in their portfolios. These stakeholders are exposed to both financial risks and non-financial risks associated with digital assets and currencies and have limited access to insurance coverage today. Interestingly, there are also a number of companies who hold cryptocurrencies on their balance sheets (for example, MassMutual announced a $100 million bitcoin investment in 2020[25]).

Second, a wide range of companies are exposed to Web3-related risks. Today, there are a number of large cryptocurrency exchanges that have purchased crime insurance policies. However, this is just the tip of the iceberg. Several early areas of demand have emerged, including property (particularly directors and officers — D&O liability insurance coverage that protects Board members from personal financial losses), and legal/regulatory risk (particularly around KYC/AML identity verification requirements).

As the policy and regulatory landscape emerges, we expect there to be a divergence between companies that want to operate within a strict framework (in exchange for increased security and access to institutional/ mass market assets), and those that want to remain independent. This type of customer analysis will be helpful for insurers in identifying and prioritizing segments to target.



1B Evolving landscape of Web3 assets and liabilities that can be insured

The first (and largest) type of Web3 asset is digital currencies, which include "traditional" cryptocurrencies like bitcoin, as well as stablecoins and central bank digital currencies.

Cryptocurrencies are the largest Web3 asset class, particularly Bitcoin (~$400 billion) and Ethereum (~$140 billion), which have ~70% combined market share.[26]

Stablecoins, which are set to a fixed value (typically the US dollar), have grown quickly. They are currently valued at ~$160 billion, of which the top two issuers compose the majority of the market (Tether at $70 billion and USD Coin — USDC at at $50 billion).[27]

And while more than 100 central banks are exploring digital currencies, less than 10 have been launched, and their value today is limited (for example, the market cap of eNaira, the Nigerian central bank digital currency is currently ~$2 million[28]).

Two additional emerging areas are smart contracts for decentralized finance ($75 billion),[29] and nonfungible tokens (NFTs) ($20 billion).[30] Both are expected to grow significantly in the coming years. Smart contracts are particularly interesting in the context of decentralized finance (e.g., smart contracts are key to enable decentralized borrowing/lending platforms, or exchanges). NFTs have mainly been referenced in terms of digital artwork or property but have a broad range of use cases (e.g., NFTs can represent "tokens" — from "shares" of companies to governance voting rights and even insurance contracts). There is also potential to insure NFT items in the metaverse.

From a business insurance perspective, there are more than 50 crypto "unicorns" with a valuation of more than $1 billion. For example, one of the largest companies, Coinbase, has a market cap of ~15 billion.[31] These companies will also need professional liability, property and casualty, health and life insurance.

1C Scope of "insurable" Web3 risks are expected to increase over time

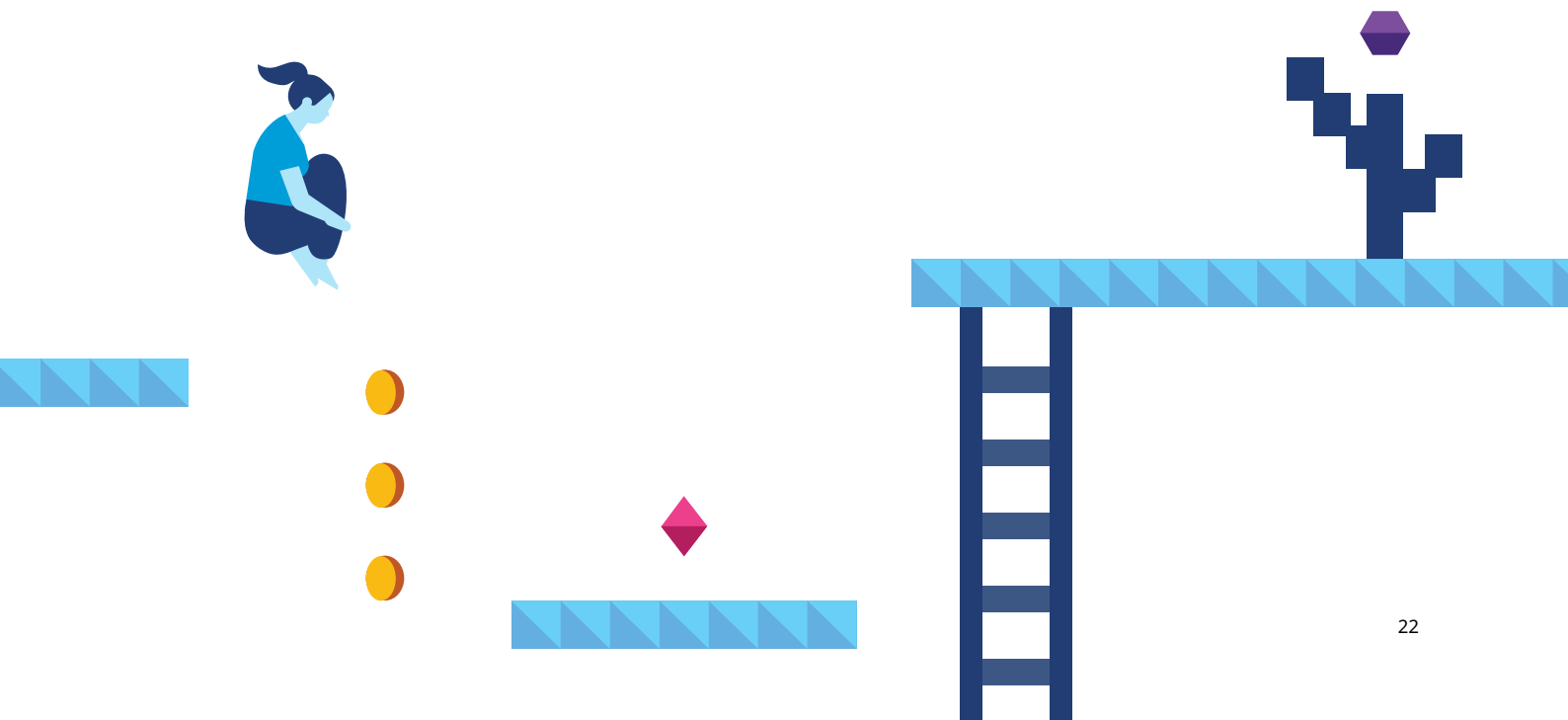
There are a broad range of financial and non-financial risks that Web3 asset holders are exposed to.

On the following page, the Web3 Risk Taxonomy table provides a detailed overview of many different risk types, as well as illustrative examples of how those risks could be realized. In practice, many of the most common (non-financial risks) associated with digital assets are operational, such as lost keys, hacking, or fraud.

However, the frequency and severity of these risks will differ based on the type of asset (as well as the type of customer) being insured.

Many of the Web3 insurance products available to investors today are fairly narrow and focus on technical risk (for example if your crypto wallet is hacked). Over time, as more loss experience data becomes available, we expect the range of insurance products offered to increase, as well as the liquidity available to cover them. For risks that are less "insurable" (for example, human error), there may be opportunities to provide risk management solutions combined with insurance offerings (e.g., data security tools/best practices).

Finally, it is worth emphasizing that there is a strong need for education around the frequency and severity of risks associated with Web3 — for customers and regulators, as well as internally within insurance companies. Given the likelihood of "narrow" policies in the near-term, clear communication with customers is critical to manage expectations and build trust.



WEB3 RISK TAXONOMY

Category		Description	Associated risks	Illustrative examples
Financial		Depletion of funds due to transactional behavior of users	Market risk	Asset value declines (e.g., Bitcoin)
			Counterparty risk	Counterparty defaults (e.g., Coinbase, Compound)
			Liquidity risk	Insufficient funds (e.g., Coinbase, Compound)
Non-financial risks	**Technical**	Failure of software systems used to support transaction execution, pricing, and integrity	Transaction risk	Network failures (e.g., Solana), Failure moving funds from one blockchain to another (e.g., Bitcoin to Ethereum)
			Smart contract risk	Code does not execute as intended
			Miner risk	Transaction processing failure (e.g., similar to settlement risk)
			Oracle risk	Data feeds not updating (e.g., Chainlink)
	Operational	Failure of human systems for key management, protocol development or governance	Routine maintenance/ upgrades	Network connectivity issues
			Forks	Risk that platform parameters change
			Key management	Lost or stolen keys
			Governance mechanisms	Subset of users influence platform rules
			Redress of disputes	Appeals process is biased
	Legal compliance	Use of Web3 assets to engage in illicit activity or to evade regulatory obligations	Financial crime	AML/KYC failures
			Fraud and market manipulation	Deliberate scams (e.g., “rug pull scams”)
			Regulatory arbitrage	Ignoring requirements across borders
Emergent		Macro-scale crashes or undermining of the financial system	Dynamic interactions	Unexpected systemic risks
			Flash crashes or price cascades	High price volatility

Source: World Economic Forum DeFi policymaker toolkit,[45] Oliver Wyman Analysis

1D Many insurers are beginning to launch coverage. Who will win the race for scale?

The most developed part of the Web3 insurance market today is coverage for cryptocurrency exchanges. Several exchanges have $200 to 300 million policies, (see the case study below on Coinbase), typically split across multiple insurers — however, there are also many exchanges that do not have coverage/self-insurance. It's worth noting that many of these policies have significant restrictions, for examaple, only covering hot vs. cold storage (e.g., online vs. offline wallets), and excluding fraud or user error.

In parallel, several companies have begun offering (limited) coverage for individuals. In the US, Coincover (currently provides $300 million in coverage[32]) and Breach Insurance[33] offers policies for individuals in the one thousand dollars to the one million dollars range. Evertas, recently approved as a Lloyd's Coverholder, offers policies of more than one million dollars in coverage for companies and high-net worth individuals.[34] There are also several "Web3 native" players, such as Nexus Mutual (currently provides ~$400 million coverage), and offers a decentralized platform where users can provide liquidity and buy insurance for digital assets.[35]

CASE STUDY: COINBASE

Coinbase is among the world's largest cryptocurrency exchanges, with ~90 million users collectively holding ~$280 billion in assets on their platform.[36] While the company has had insurance policies covering crypto assets on its platform since 2013, the company has increased cover to $320 million with a policy provided by a group of US and UK insurers.[37]

CASE STUDY: EVERTAS

Evertas is a US-based digital asset insurance company that provides insurance and risk management solutions. They provide coverage for digital asset holders and businesses, including custodians, exchanges, traditional financial institutions, high-net-worth individuals, family offices, and market utilities.

Types of coverage offered includes:[38]

- Theft/loss (e.g., if someone steals your cryptocurrency, stablecoins, or NFTs, or you lose access to them),
- Technology (e.g., "errors and omissions" coverage if your technology doesn't do what it is supposed to do),
- Business continuity (e.g., based on blockchain infrastructure failure),
- Property (e.g., coverage for crypto miners or data centers)
- Smart contracts (e.g., if smart contracts do not work the way they were intended to)

Evertas requires a minimum policy size of $1 million, and offers B2B2C models (for example, for exchanges or custodians). Evertas started in 2017, received a Bermuda license in 2020, and were approved as a Lloyd's Coverholder in 2022 (in partnership with Arch Insurance and Marsh).[39]

CONSIDERATIONS FOR INSURERS

- What is our ambition around providing insurance for Web3? Do we plan to focus on near-term ("today's") opportunities, or longer-term out ("future") opportunities?
- What do we think are the most attractive potential customers (e.g., retail/institutional investors, businesses, etc.)? What are their needs and pain points?
- How do we want to engage with other players in the Web3 insurance ecosystem (e.g., brokers, crypto-focused MGAs, IT cyber-security firms)?
- What is our risk appetite? Are there certain customer types, assets, or risks that we are or are not willing to consider? How do we expect our risk appetite to evolve over time?
- How do we assess and manage risks? Do we manage this ourselves, via a trusted third-party, or in a decentralized way? How much do we focus on insurance provisions vs. risk mitigation? (e.g., requiring users to follow security best practices)
- How do we most effectively communicate our strategy with customers, internal stakeholders, distribution partners, and regulators?

Dimension 2

USING WEB3 TO REINVENT THE INSURANCE VALUE CHAIN

2A Web3 can potentially make existing insurance products and processes better, faster, and cheaper

+

2B Insurers can develop new customer-focused value propositions using Web3 capabilities

+

2C The longer-term potential to reimagine new Web3-based business models

2A Web3 can potentially make existing insurance products and processes better, faster, and cheaper

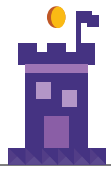
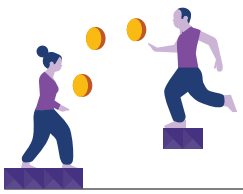
Insurers have been exploring use cases for blockchain for several years. However, **the Web3 "technology stack" includes several additional capabilities insurers can leverage:**

- **Smart contracts,** with the terms of the agreement between buyer and seller directly written into code that can be automated to be "self-executing."
- **Oracles,** which bring third-party or real-world data onto a blockchain, allowing smart contracts to execute.
- **Decentralized applications (dApps),** which enable financial services (e.g., borrowing, lending, exchanges) without a central counterparty, interacting with smart contracts
- **Dedicated tokens** (cryptocurrencies), which can reward users who actively engage in the ecosystem. For example:
  - Governance tokens allow users to vote on governance proposals
  - Utility tokens allow users to be compensated if they perform tasks (e.g., risk assessment, claims evaluation)
  - Liquidity tokens allow users to contribute to a risk pool to pay out claims

We see significant opportunities to use Web3 capabilities to make insurance better, faster, and cheaper. For example:

Smart contracts can make it easier for insurers to customize policies.
Oracles can help automate claims assessment (reducing the time to payout and increasing efficiency).
Web3 can help to rethink the cost base for insurers by making the claims assessment more efficient. For example, oracles can help to provide auto-adjudication and payouts — significantly impacting claims organizations' cost structures.

WHAT BENEFITS CAN WEB3 PROVIDE INSURERS? A LOOK INTO INSURANCE VALUE CHAIN COMPONENTS

	Web3 capabilities	Opportunities for insurers	Key considerations
Products/offerings 	Insurers can develop **"smart contracts" with defined conditions** under which policies are paid out	Increased **transparency** for customers **Easier to customize** policies (insurer defines smart contract framework/ conditions)	Smart contracts are transparent but not necessarily easily understood by customers Accuracy of third-party data/ oracles will be critical
Underwriting/pricing 	Insurers can create mechanisms for **supply-and-demand based pricing**, or leverage data from **oracles**	**Improved access to coverage** for high-risk customers **Pricing accuracy** (if based on third-party data)	Many Web3-related risks are new and difficult to quantify (particularly systemic risks)
Claims/operations 	Insurers can create **decentralized claims management frameworks** (e.g., voting, assigned experts, etc.)	**Speed** to resolution (if based on external data) **Lower** cost-base/reduced operating expenses	Determining how to incentivize accurate and consistent claims assessment (if decentralized) will be key
Investments/reinsurance 	Insurers can enable **decentralized liquidity provision** (also opportunity to automate investments)	**Ability to participate** in additional parts of insurance value chain	Determining how to incentivize liquidity provisions (while managing concentration risk) will be key
Governance 	Insurers can allow users to **vote/participate on governance decisions**	Increase **customer trust** by providing opportunities to engage on governance topics	Governance incentives Identity verification (e.g., KYC/AML) requirements
Distribution 	Insurers can embed **smart contracts** onto external websites	Streamlined B2B2C **distribution** potential	Access barriers for potential customers (e.g., Web3 understanding/ digital asset ownership)

Source: Oliver Wyman Analysis

2B Opportunities in the short-term
Insurers can develop new customer-focused value propositions using Web3 capabilities

We expect that near-term opportunities to develop Web3-based customer value propositions will focus on policies that are easy to translate into smart contracts — particularly parametric insurance and claims that can be evaluated using data from oracles. For example, this may include low denomination policies (e.g., crop insurance for farmers in emerging markets).

As insurers consider developing new Web3-based value propositions, it will be important to focus on the specific customer problems that are being addressed, and why Web3 capabilities are necessary. Insurers will also need to consider their distribution strategy, including the tactical details for how these policies can be purchased and how claims will be paid. For example, we expect that offering embedded insurance may be powerful (e.g., linking seed purchases with insurance in the Lemonade case study illustrated below).

CASE STUDY: LEMONADE CRYPTO CLIMATE COALITION

Lemonade recently launched the Lemonade Crypto Climate Coalition to provide at-cost, instantaneous, parametric weather insurance for subsistence farming in emerging markets.[40]

The group's first climate insurance offering will be developed as a decentralized Web3 application on an eco-friendly blockchain (e.g., that uses "proof of stake," rather than "proof of work"). Farmers are able to sign up for policies and receive payments from their mobile phone. They can pay for policies using local currencies or global stablecoins. Smart contracts automatically pay claims based on real-time weather information. The Lemonade Foundation provides the initial capital (the objective, in time, is to allow other digital asset investors to fund the liquidity pool as well).

As part of the coalition, Lemonade is partnering with a number of insurance and Web3 organizations, including: Hannover Re (a reinsurer), Pula (an agricultural insurance and technology company), Etherisc (a platform for decentralized insurance/smart contracts), Avalanche (a climate-friendly blockchain), Tomorrow.io, (a weather technology company - providing real-time weather data), and Chainlink (a third-party data provider/oracle).

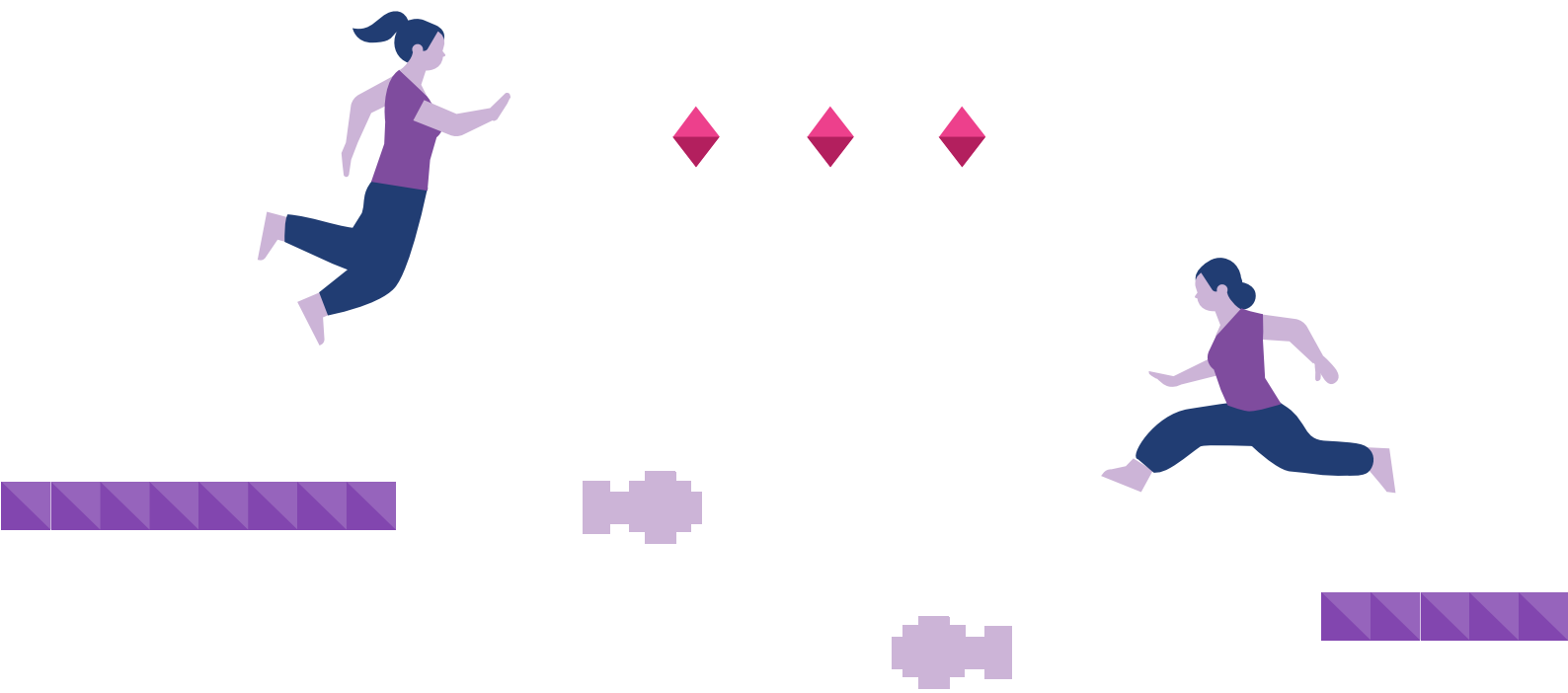
2C Opportunities in the longer-term
The potential to reimagine new Web3-based business models

Web3 offers the potential to reimagine what insurance companies can look like. Today, there is a rapidly evolving ecosystem of "Web3 insurers," ranging from nascent platforms to emerging players.

Below, we feature two case studies that illustrate examples of Web3 insurance business models:

Etherisc illustrates "what if" an insurer adopts the platform model. In this scenario, the insurer defines the framework for insurance provisions (including roles and responsibilities), and orchestrates an ecosystem of third-parties (e.g., third-party data providers/oracles). Insurers can also decide if they want to specialize in providing specific value chain services (e.g., "claims adjusting as a service").

Nexus Mutual illustrates "what if" a community of people insure themselves via a mutual model. In this model, the community members themselves provide liquidity, buy cover, assess claims, and vote on governance questions. There can be different governance models (or different forms of democracy), but nearly all aspects of the value chain are either automated or decentralized.



CASE STUDY: ETHERISC

Etherisc is a nonprofit with the goal of expanding the Web3 insurance ecosystem. Etherisc operates as an insurance/smart contract platform. They offer a framework to define insurance policies using smart contracts, as well as a decentralized insurance protocol.[41]

Etherisc partners with other ecosystem players (including Lemonade as we described earlier) to offer a range of Web3-based insurance products, including crop insurance, hurricane insurance, flight delay insurance, and digital wallet cover.

The Etherisc platform uses Web3 to decentralize key roles, governance, and decision making in the insurance value chain (see example below).

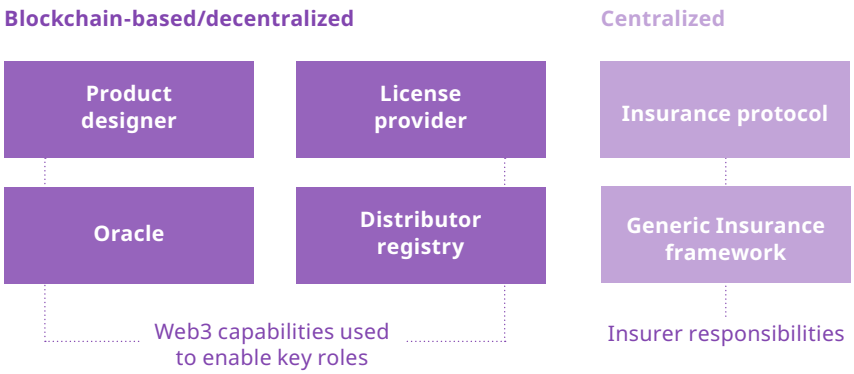
Product designer: Ability to assign a "product designer" role, who earns a certain percentage of the premium and underwriting profit.

Oracle: External data source, earns fees per oracle call, API call, or processed claim.

License provider: Earns a percentage of premiums for renting licenses, filing compliance reports.

Distributor registry: Earns a percentage of premiums or fixed fees for distributing product to customers.

What could a Web3 insurer look like? Illustrative Etherisc example.



CASE STUDY: NEXUS MUTUAL

Nexus Mutual is a blockchain-based "mutual" that offers decentralized insurance products for digital asset holders. Founded in 2017, the company is registered as a "limited by guarantee" business in the UK.[42]

Anyone can become a Nexus Mutual member if they pay a membership fee and go through an identity verification process. Nexus Mutual members hold NXM tokens, which allows them to vote on claims assessment and governance issues (see illustrative example below). They can also become risk assessors and earn rewards by staking their tokens (essentially, contributing tokens to a pool that is used when a payout occurs). In less than five years, the company has exceeded $400 million in coverage.[43]

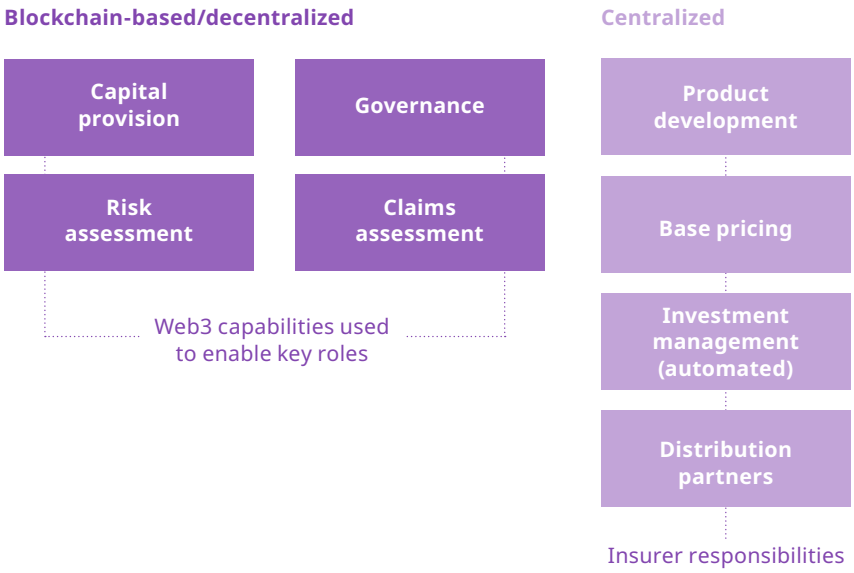
Coverage can be customized by amount, time period, and currency (policies can be denominated into cryptocurrencies or stablecoins). Policy types include:[44]

Custodian cover (e.g., if the custodian is hacked or withdrawals are halted for more than 90 days)

Yield token cover (e.g., the yield-bearing token drops in value by more than 10%)

Protocol cover (e.g., cover failure in protocol code, economic design, governance set-up or oracles)

What could a Web3 insurer look like? Illustrative Nexus Mutual example.



RECAP: EXAMPLE WEB3 INSURER MODELS

	Description	Value created	Example
Platform model	Provides a technical framework to allow users to define their own insurance products Typically defines specific roles (e.g., product designer, oracles, license providers, distributors, investors)	Democratization of insurance/"choose your own adventure" model Easily able to plug into new ecosystem capabilities Opportunity to specialize in specific value chain elements (e.g., provide "claims adjustment as a service"	**Etherisc** Most elements decentralized via blockchain-based technology Governance may be partially centralized
Mutual model	Allows a community (most typically Web3 users) to pool risk for a given product type Typically bounded by the amount of capital invested by the group	Decentralization enables significantly lower cost base Mutual model can create sense of community, potentially reducing fraud risk Marketplace-based pricing can enable coverage for hard-to-insure risks	**Nexus Mutual** Products and governance fully or partially centralized Pricing, claims, investments are decentralized via blockchain-based technology

CONSIDERATIONS FOR INSURERS

- Who is our target customer base? How will we communicate our value proposition to them?
- Would it be possible to offer this proposition without using Web3 technology? What is the unique (customer) value generated by using Web3?
- How will customers purchase our product? How familiar will they need to be with Web3 capabilities?
- What elements of the value chain do we plan to own/partner/outsource (e.g., data, claims, pricing, governance)?
- Should we be legally registered as an insurer or offer registered products? What regulatory/compliance guidelines will apply, particularly around identify verification (e.g., KYC/AML)?
- How should we engage with our policyholders? What decisions will they be able to contribute to (e.g., governance)?

CONCLUSION: 4 KEY TAKEAWAYS

Based on what we have observed to-date and what we believe the Web3 economy can become, we see four key takeaways for insurers.

Takeaway 1: Investors and businesses who want to participate in the Web3 ecosystem face significant risks, both financial and non-financial. These risks represent a commercial opportunity for insurers, assuming that they can be managed prudently. Currently, the market is underinsured (less than 1% of digital assets are insured) and there is room for growth with increased adoption. The ability to access insurance coverage may also **contribute to more widespread adoption of digital assets.**

Takeaway 2: When insuring the Web3 economy, prudent underwriting will be critical. Insurers will need to be thoughtful about what risks are covered, and to communicate this to internal and external stakeholders. The most successful insurers are likely to take an active role in understanding the workings of the digital assets space and smart contracts, and ensuring risk management and code audit standards (e.g., "predict/prevent model") to drive profitability.

Takeaway 3: Insurers can leverage Web3 technology for innovation but need to focus on how they will create customer value. In many cases, just because you can use Web3 technology, does not necessarily mean that you should. Many of the benefits for insurers around Web3 include the opportunity to provide coverage for today's unmet customers needs.

Takeaway 4: Web3 offers the potential to reimagine new insurance business models — including new forms of mutuals or platforms. Companies do not need to restrict themselves to replicating traditional insurance in a Web3 context.

In short: it is time to pay attention. The weeks, months and years ahead are bound to present unprecedented opportunities for insurers.

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ENDNOTES

1. Perrin, Andrew. “16% of Americans say they have ever invested in, traded or used cryptocurrency.” Pew Research Center, 11 November 2021, www.pewresearch.org/fact-tank/2021/11/11/16-of-americans-say-they-have-ever-invested-in-traded-or-used-cryptocurrency/
2. “FACT SHEET: President Biden to Sign Executive Order on Ensuring Responsible Development of Digital Assets.” White House Briefing Room (whitehouse.gov), 9 March 2022, www.whitehouse.gov/briefing-room/statements-releases/2022/03/09/fact-sheet-president-biden-to-sign-executive-order-on-ensuring-responsible-innovation-in-digital-assets/
3. Alison, Ian. “The Crypto Insurance Market May Total $6 Billion. That's Nowhere Near Enough.” CoinDesk, 21 November 2018, www.coindesk.com/markets/2018/11/21/the-crypto-insurance-market-may-total-6-billion-thats-nowhere-near-enough/
4. Perrin, Andrew. “16% of Americans say they have ever invested in, traded or used cryptocurrency.” Pew Research Center, 11 November 2021, www.pewresearch.org/fact-tank/2021/11/11/16-of-americans-say-they-have-ever-invested-in-traded-or-used-cryptocurrency/
5. “Historical Snapshot.” CoinMarketCap, 4 January 2015, coinmarketcap.com/historical/20150104/
6. Alison, Ian. “The Crypto Insurance Market May Total $6 Billion. That's Nowhere Near Enough.” CoinDesk, 21 November 2018, www.coindesk.com/markets/2018/11/21/the-crypto-insurance-market-may-total-6-billion-thats-nowhere-near-enough/
7. Melinek, Jacquelyn. “Report: VCs Invested $33B in Crypto and Blockchain Startups in 2021.” Blockworks, 6 January 2022, blockworks.co/report-vcs-invested-33b-in-crypto-and-blockchain-startups-in-2021/
8. Thorn, Alex. “Galaxy Digital Research: Crypto VCs biggest year ever 2021.” Galaxy Digital, 10 January 2022, ncfacanada.org/wp-content/uploads/2022/01/1641761460972.pdf
9. Vigna, Paul. “Wall Street Takes Lead in Crypto Investments.” The Wall Street Journal, 22 February 2022, www.wsj.com/articles/wall-street-takes-lead-in-crypto-investments-11645927004
10. “Regulation of Cryptocurrency Around the World: November 2021 Update.” The Law Library of Congress, November 2021, tile.loc.gov/storage-services/service/ll/llglrd/2021687419/2021687419.pdf
11. Atlantic Council Central Bank Digital Currency Tracker, www.atlanticcouncil.org/cbdctracker/
12. “FACT SHEET: President Biden to Sign Executive Order on Ensuring Responsible Development of Digital Assets.” White House Briefing Room (whitehouse.gov), March 9, 2022, www.whitehouse.gov/briefing-room/statements-releases/2022/03/09/fact-sheet-president-biden-to-sign-executive-order-on-ensuring-responsible-innovation-in-digital-assets/
13. Nexus Mutual Tracker. Accessed 25 April 2022, nexustracker.io/
14. Wininger, Shai. “Introducing the Lemonade Crypto Climate Coalition.” Lemonade Blog, www.lemonade.com/blog/crypto-climate-coalition/
15. Foggan, Laura. Stassen, Maeerten. Tsai H., Kelly. "World's First" Reinsurance Contract Bound Using Blockchain Technology.” Crowell & Moring LLP, 8 April 2022, www.crowell.com/NewsEvents/AlertsNewsletters/all/Worlds-First-Reinsurance-Contract-Bound-Using-Blockchain-Technology
16. Shen, Maria. “Electric Capital Developer Report (2020).” Medium, 29 April 2021, medium.com/electric-capital/electric-capital-developer-report-2021-f37874efea6d
17. “Cryptocurrency Around The World.” Global Cryptocurrency Ownership Data 2021. TripleA, 14 October 2021, triple-a.io/crypto-ownership/
18. “Check Cryptocurrency Price History For The Top Coins.” CoinMarketCap, Accessed 20 April 2022, coinmarketcap.com/historical/20150104/
19. Perrin, Andrew. “16% of Americans say they have ever invested in, traded or used cryptocurrency.” Pew Research Center, November 11, 2021, www.pewresearch.org/fact-tank/2021/11/11/16-of-americans-say-they-have-ever-invested-in-traded-or-used-cryptocurrency/
20. “St. Louis Fed, Fred Economic Data.” Economic Research, Accessed 22 April 2022, fred.stlouisfed.org/series/ITNETUSERP2USA
21. Perrin, Andrew. “16% of Americans say they have ever invested in, traded or used cryptocurrency.” Pew Research Center, November 11, 2021, www.pewresearch.org/fact-tank/2021/11/11/16-of-americans-say-they-have-ever-invested-in-traded-or-used-cryptocurrency/
22. “The Crypto-Crime Report.” Chainalysis, February 2022, go.chainalysis.com/rs/503-FAP-074/images/Crypto-Crime-Report-2022.pdf
23. “Bitcoin Energy Consumption Index.” Digiconomist, Accessed 20 April 2022, digiconomist.net/bitcoin-energy-consumption/

24. Alison, Ian. “The Crypto Insurance Market May Total $6 Billion. That's Nowhere Near Enough.” CoinDesk, 21 November 2018, www.coindesk.com/markets/2018/11/21/the-crypto-insurance-market-may-total-6-billion-thats-nowhere-near-enough/

25. Nelson, Danny. “Mass Mutual Buys $100M in Bitcoin, Bets on Institutional Adoption with $5M NYDID Stake.” CoinDesk, 10 December 2020, www.coindesk.com/markets/2020/12/10/massmutual-buys-100m-in-bitcoin-bets-on-institutional-adoption-with-5m-nydig-stake/

26. CoinGecko. Cryptocurrency Prices by Market Cap, www.coingecko.com/

27. CoinGecko. Cryptocurrency Prices by Market Cap, www.coingecko.com/

28. The Bit Times. Coins Listing, Accessed 20 April 2022. thebittimes.com/token-ENAIRA-BSC-0xd29009666F2b620f290E8DFab7fF64Ca7834dea8.html

29. CoinGecko. Cryptocurrency Prices by Market Cap, www.coingecko.com/

30. “The NFT Market Report.” Chainalysis, January 2022, go.chainalysis.com/nft-market-report.html

31. “2021 Market Overview: Crypto Exchanges Market Activity, Venture Financing, Crypto Unicorns, M&A.” Scalable Solutions, 19 April 2022, scalablesolutions.io/news/blog/2021-market-overview-crypto-exchanges-market-activity-venture-financing-crypto-unicorns-ma/

32. “Lloyd's Launches New Cryptocurrency Wallet Insurance Solution For Coincover.” Lloyd's press release, www.lloyds.com/about-lloyds/media-centre/press-releases/lloyds-launches-new-cryptocurrency-wallet-insurance-solution-for-coincover

33. “Breach Launches Crypto Shield, the Industry's First Regulated Insurance Product for Retail Crypto Investors.” GlobeNewswire News Room, 15 February 2022, www.globenewswire.com/news-release/2022/02/15/2385260/0/en/Breach-Launches-Crypto-Shield-the-Industry-s-First-Regulated-Insurance-Product-for-Retail-Crypto-Investors.html

34. Allison, Ian. “Crypto Insurance Firm Evertas Wins Lloyd's of London Approval.” CoinDesk, 3 February 2022, www.coindesk.com/business/2022/02/03/crypto-insurance-firm-evertas-wins-lloyds-of-london-approval/

35. “Nexus Mutual: TVL and stats.” Defi Llama, defillama.com/protocol/nexus-mutual

36. Coinbase, www.coinbase.com/about

37. Coinbase, www.coinbase.com/custody/faq

38. www.evertas.com/insurance/

39. Allison, Ian. “Crypto Insurance Firm Evertas Wins Lloyd's of London Approval.” CoinDesk, 3 February 2022, www.coindesk.com/business/2022/02/03/crypto-insurance-firm-evertas-wins-lloyds-of-london-approval/

40. Wininger, Shai. “Introducing the Lemonade Crypto Climate Coalition.” Lemonade Blog, www.lemonade.com/blog/crypto-climate-coalition/

41. Etherisc, etherisc.com/

42. Karp, Hugh., Melbardis, Reinis. “Nexus Mutual: A peer-to-peer discretionary mutual on the Ethereum blockchain.” Nexus Mutual, nexusmutual.io/assets/docs/nmx_white_paperv2_3.pdf

43. Nexus Mutual, Accessed 26 April 2022, nexusmutual.io/

44. “Types of Cover.” Nexus Mutual, nexusmutual.gitbook.io/docs/users/types-of-cover

45. “Decentralized Finance (DeFi) Policy-Maker Toolkit - World Economic Forum.” World Economic Forum, June 2021, www3.weforum.org/docs/WEF_DeFi_Policy_Maker_Toolkit_2021.pdf

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