V2 Litepaper

Making Crypto Safer

Welcome to InsurAce, the leading decentralised insurance protocol.

Your security is our highest priority, we want to make crypto a safe place so that you're protected anytime, anywhere.

InsurAce Team March 2022

Version 0.1

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1. Executive Summary

InsurAce is a leading multi-chain DeFi Insurance protocol with a mission to make crypto safer for everyone. Our protocol protects DeFi users against risks to their Investments and interactions in Web3.

InsurAce V1 has been live for over 10 months experiencing notable growth whilst being at the forefront of innovation. This litepaper outlines the key challenges from V1 and the relevant solutions, then combines them with forward-thinking architecture to bring InsurAce to the next level – InsurAce V2.

InsurAce V2 aims to bring insurance to the forefront of Web3. With the explosive growth in exploits in 2021, insurance projects must rapidly innovate to protect investors and be well on their way to securing Web3 **prior** to onboarding the next billion users.

The status quo is a far cry from the extensive nature of insurance in traditional finance and has yet to substantially improve relative to other DeFi verticals. Web3 and DeFi's expansion will continue and thus our services and infrastructure must adapt.

InsurAce V2 is an **ambitious** endeavour to achieve this mission through revised tokenomics, increased capital efficiency and releasing innovative new insurance products, all in a multi-chain setting.

These leaps forward will be deployed asynchronously with new product initiatives to address coverage gaps in more fields such as wallets and NFTs.

This is the dawn of insurance 2.0.

2. Introduction

2.1. Recap on V1

InsurAce's journey started during DeFi summer in 2020, when we spotted the need for better and more insurance products as crypto continued to boom. InsurAce Protocol was founded as the first multi-chain insurance protocol, providing insurance to crypto users, regardless of their economic status and chain of choice. We continued to build alongside the growing industry, launching on Ethereum mainnet at end of April 2021, subsequently expanding to Binance Smart chain (BSC), Polygon, and Avalanche.

Since inception, InsurAce V1 has achieved exceptional growth with key performance indicators listed below (time of writing March 2022).

- $290M+ total assets covered, with consistent $70M+ active covers.

- 120+ protocols and products offered, distributed on 20 public chains.
- 4 risk types covered, including smart contract vulnerability, stablecoin de-peg, IDO risk and custodian risk.
- $1.7M premium earned, with increasing monthly premiums
- $45M total value locked, 40K+ total users and 15K+ token holders.
- 60 partnerships, with a global community of over 100K participants.
- Launch of a proprietary cross-chain bridge.
- Development of insurance-as-a-service API for widespread integration.

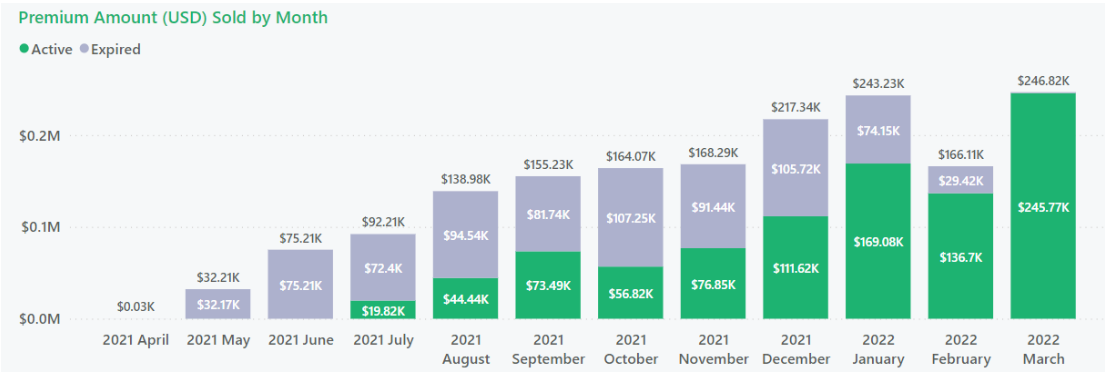

Figure 1 Monthly Premium Earnings Since Launch to Ethereum Mainnet

InsurAce V1 marks a "0 to 1" development and has enabled InsurAce to take lead position as a multi-chain insurance protocol.

This V2 paper addresses our plans for growth, our vision for financial safety and our ambition to make a difference.

2.2. The Problems

In the process of building and operating InsurAce V1, we have seen strong and rapidly growing demand for insurance. This is not surprising as almost $3B has been recorded lost due to smart contract vulnerabilities in 2021, yet less than 5% were covered by insurance. In the meantime, alternative risks are also on the rise such as front-end, centralized exchange and NFT exploits. As the industry develops at an ever-increasing pace, more and more risks will be revealed.

Insurance can play a key role in managing these risks, yet InsurAce V1 is unable to fully accommodate industry needs, given existing challenges of:

- Misaligned token incentives

- Insufficient cover capacity
- Demand for broader product offerings
- Wider and seamless access for more users

These problems are not separate, but rather interconnected. InsurAce V2 is a systematic approach to address these issues, which will be illustrated in detail in the subsequent chapters.

Addressing these challenges is paramount as it strengthens the symbiotic relationship between InsurAce's growth from "1 to 100" and value preserved within the whole crypto ecosystem.

3. Protocol Upgrades

3.1. Tokenomics Enhancements

InsurAce was founded in an era where the “protocol meta” involved liquidity mining, an approach born during DeFi Summer. This revolutionary distribution method quickly became and remains the norm.

InsurAce V1 adopted a similar mechanism and INSUR has played a critical role in rewarding risk underwriters, cover buyers, partners and our community so far, but in hindsight, it is a dual-edged sword.

Liquidity mining left INSUR with few use-cases besides staking to earn more INSUR. Nonetheless, our first order priority to bootstrap the insurance business has been met and now it is time to add utility and value accrual mechanisms to the INSUR token.

The problem of capital impermanence in DeFi necessitates a re-design to re-align interests with users and allow InsurAce to thrive in the years to come.

InsurAce V2 will bond L1 and stablecoin assets to protect underwriting users. These bonded tokens serve as capital protection for staked capital. In other words, when insurance events occur, an intermediary layer exists to protect staked capital.

Token emissions will continue to play a part in INSUR distribution; however, this will be reduced over time in favour of sustainable initiatives like bonding. Native token rewards will be replaced with revenue-sharing arrangements, which over time are projected to dwarf the size of current INSUR emissions rates.

Equally as important, InsurAce V2 will introduce the veTOKEN model. The veTOKEN, popularized by Curve Finance, introduced an exciting system for governance token holders to be rewarded and stablecoin projects to increase liquidity. Users will receive veINSUR by locking their INSUR tokens. The longer they lock INSUR for, the more veINSUR they will receive. Naturally, the longer-dated capital requirements of an insurance protocol relative to a DEX creates the need for patient capital and governance, hence veINSUR will be adopted. This shifts InsurAce's token rewards and voting power to our longest-term token holders.

In exchange for locking in INSUR tokens, users with veINSUR will access the majority of:

- Boosted revenue sharing and future token emissions
- Governance power for InsurAce's future expansion and risk buffer allocations
- Discounts to reduce cover costs

Our iterations do not stop there.

InsurAce V2 will give INSUR token holders the opportunity to protect underwriting capital via the insurance gauge, which will be illustrated more in Section 3.3. At its core:

- Underwriters provide staked capital
- INSUR token holders vote on where InsurAce's capital buffers are distributed to maximize user protection

In addition, protocols receive a way of incentivizing INSUR token holders to protect the very users responsible for securing their protocol.

3.2.Multi-Chain Insurance Aggregator

With the prosperity of new public chains beginning in Q2 2021, DeFi quickly evolved and took shape on alternate chains, pulling in more capital, users, and builders into these new ecosystems.

We spotted this trend and quickly executed on a multi-chain strategy, expanding to BSC, Polygon, and Avalanche in a few months. This in turn helped InsurAce acquire more TVL, cover sales and new users. As most participants believe now, the future is multi-chain, and we will continue to build to more chains in V2, quickly bringing our services to the incumbent users.

However, deployment on these chains are segregated in nature. Although InsurAce has already built a proprietary bridge to bridge INSUR across multiple chains, other insurance elements such as staking, capacity and claims are still not connected, leading to a few problems:

- **Fragmented insurance markets on multiple chains**. A certain insurance product might be sold out on chain A with users demanding more capacity, while surplus capacity on chain B is idle. This leads to low capital efficiency and inadequate distribution.

- **Unbalanced staking yield across multiple chains**. The APY for the same asset (e.g. ETH) should remain equivalent across chains, but may currently fluctuate by chain.
- **Segregated claims lead to imbalanced underwriting liability.** If there is a claim filed on chain A, it should be voted on by claim assessors across multiple chains, but is currently isolated to chain A.
- **High operational costs and poor user experience.** Users have to switch to different chains to purchase and access InsurAce's full suite of covers and claim multiple times if insurance policies are triggered. Alternatively, they may need to bridge their assets across multiple chains, adding extra risk in the process.

To solve these problems, InsurAce V2 is releasing an internal insurance aggregator whereby **insurance operations are synchronized across multiple chains in the backend and user experience is chain agonistic on the frontend**. To be more specific, this aggregator will allow:

- Aggregated insurance capacity from multiple chains to provide maximum and optimized capacity efficiency.
- Claims distributed such that one claim can be voted on across multiple chains and garner collective participation.
- An improved user experience as the chosen chain is simply an entry point and the insurance services they can access are identical regardless of which chain they are in.
- Data analysis to be conducted on an aggregated, multi-chain basis.

Insurance branches are thus built on deployed chains, with insurance services being managed holistically in the backend. With the aggregator in place, capital efficiency will be greatly improved and cover sales are expected to achieve new records.

This change creates wins all around as users get to operate in their chain of choice, stakers benefit from reduced dilution and InsurAce enhances its underwriting efficiency.

After the insurance aggregator is released, we will quickly expand to public chains that we have engaged with such as Near, Harmony, Fantom, etc.

3.3.Underwriting Capacity Expansion

Since inception, InsurAce has grown from $0 in capital to an underwriting capacity of over $40M. This growth in 9 months is representative of the confidence risk underwriters have in insurance as Web3 financial infrastructure. However, the lack of sufficient insurance capacity remains a major challenge compared to the high insurance demand. Coverage is quickly sold out, with users continually requesting for more capacity, which we are unable to offer due to risk management considerations. For InsurAce to grow to the next level, scaling capacity, is the most critical task.

Compared to other DeFi protocols, where billions in TVL can be sourced, insurance projects have greater difficulty due to:

A. Risk in Capital Provision

Insurance underwriting carries an inherent risk of losing capital due to the risk pooling mechanism, where insurance claims are paid from.

To understand the risks that underwriters are exposed to and its solution, one must first understand the journey of an underwriter's capital.

When users stake their capital on the InsurAce platform,

1) They contribute to a common pool of capital.
2) This underwriting pool is then used to provide insurance cover to users who wish to protect themselves against various loss events.
3) When a valid claim materializes and an insured user must be paid, users' staked capital is at direct risk of loss.

In reality, this loss is spread across many users and the number of protected users may be small; however, the loss of capital remains real.

This problem lies at the core of all insurance protocols, creating an unsustainable proposition for underwriters, and exposing them to loss. Due to this risk of loss, insurance protocols are undervalued relative to their borrow/lending and trading peers in DeFi.

B. Reward Structure

Incentives need to be attractive to entice capital from other protocols, while remaining sustainable. Rewards are currently provided in the form of pure governance tokens, which is subject to token price changes and dilution. This easily leads to a downward spiral in the project's perceived value, a common problem for all DeFi 1.0 projects offering liquidity mining.

Solutions to expand capacity will come from different angles:

1) Mitigate the risk of capital loss, with our Protocol Underwriting Buffer (PUB) and Insurance Gauge (IG) mechanisms.
2) Set up whitelisted underwriters to open up avenues to capital sources, such as other DeFi protocols and TradFi institutions with needs for yield generation.
3) Add premium-sharing and investment returns to the reward structure to create a sustainable and competitive APY.

The updated design for 1) and 2) are illustrated below and 3) will be addressed in a later section.

3.3.1. Protocol Underwriting Buffer and the Insurance Gauge

The PUB leverages a portion of the treasury for underwriting protection, giving capital security and creates the underpinnings of a loss-minimization framework.

A proportion of underwriting and investment revenues will be directed to InsurAce's treasury according to the formula:

$$PUB_t = PUB_{t-1} + Z*Revenue$$

Z is a parameter that will fluctuate over time, but has initial value of 70% until the time at which InsurAce's PUB reaches a critical mass.

The critical mass is determined by reverse-engineering the appropriate PUB that causes underwriters to lose capital (i.e. PUB allocated to that protocol is depleted) in the majority of economic environments. It will be dynamically calibrated based on the level of underwriting capacity, active policy exposure and existing PUB size.

In the short-term, InsurAce's primary objective will be developing its Protocol Underwriting Buffer (PUB) to provide underwriters with an added layer of protection during future loss events. A visual of the capital protection mechanism is displayed below.

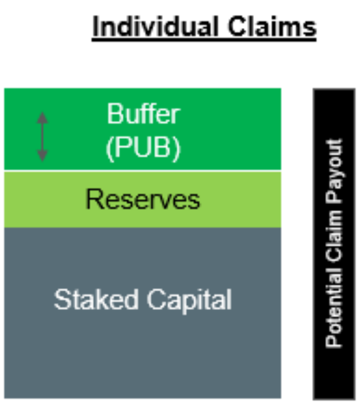

Figure 2 Hypothetical Claim Payout

	Current State	Future State
Staked Capital	$100	$100
Claim	($20)	($20)
PUB	$0	$20
Net Capital After Claims	$80	$100

Table 1 PUB = $20

Longer-term, InsurAce will focus on building out its insurance-as-a-service model, giving stakers the power to divert protection into their pool of choice to minimize potential losses for all underwriters.

For those unfamiliar with InsurAce, it should be noted that InsurAce's underwriting model is aggregate in nature. In other words, a communal pool of capital is used to provide capacity to all protocols (i.e. a dedicated market is not set up for each individual protocol). This benefits the community by allowing lesser-known protocols to have immediate access to underwriting capacity instead of waiting for underwriters to allocate capital to their pools.

This creates both an additional avenue for premium revenues, and increased risk exposure to potentially more nascent protocols. Amongst other solutions like capacity reduction, allocation of InsurAce's PUB is a remedy for underwriting losses.

These fundamental changes in capital structure and governance place the power of capital protection directly in the hands of InsurAce users. Users have the opportunity to decide where capital buffers are deployed to manage risk to their own staked capital. As a by-product of this, the broader InsurAce ecosystem becomes more secure and underwriter-protocol incentive alignment is achieved.

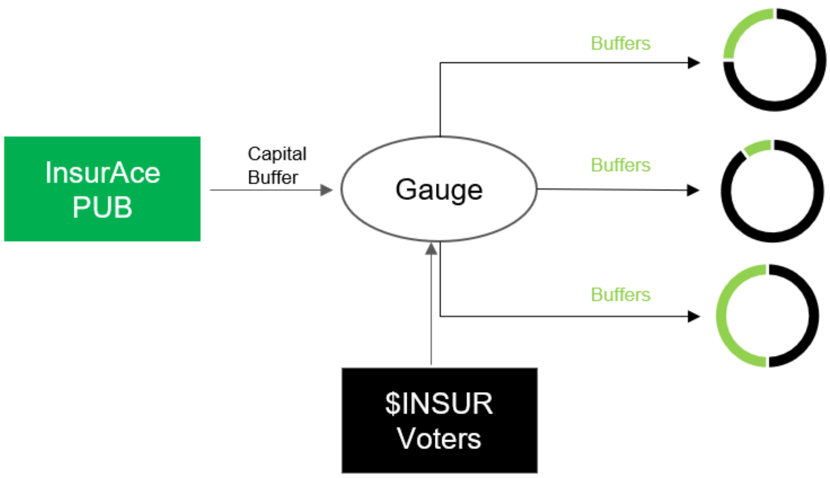

Figure 3 The Insurance Gauge – PUB vs. Staked Capital

With the advent of our new design, InsurAce aims to provide underwriters with an improved risk-reward proposition that accelerates the insurance flywheel. Rewards and protection for underwriters creates additional staking, allowing for increased underwriting and premium revenue, and so on.

Our focus on user safety (for both insurance buyers and insurance providers) is the catalyst for InsurAce V2 and our commitment to innovations in safety will continually serve as a key growth driver going forward.

So in addition to InsurAce's original mission to provide the lowest cost premiums on the market, **InsurAce V2 adds in an added layer of protection with the lowest potential loss to insurance underwriters**.

3.3.2. Whitelisted Underwriters

To generate additional underwriting capacity that is necessary for InsurAce's expected product expansion, we will work jointly with leading DeFi protocols to secure capital commitments.

This will be achieved via an insurance whitelist, giving underwriters access to premium revenues without staking their capital into the platform. This increases capital efficiency for designated protocols whilst giving users direct lines of credit to some of the largest and most credible counterparties in both DeFi and TradFi.

Additional details surrounding the insurance whitelist will be released as the development of new insurance product offerings is finalized.

The combination of these solutions and organic capital growth will allow InsurAce to dramatically increase the robustness of its underwriting capital base.

3.4.Investment Arm

InsurAce's investment arm was introduced in V1 as a core platform module; however, as the multi-chain trend prevailed after V1 was launched, multi-chain expansion took temporary precedence over other product developments.

In V2, we turn our attention back to investments, an essential component in InsurAce's growth. As a Web3 insurance operation, creating a base of knowledge around smart contracts, protocol risks and governance was a critical first step in our development. Going forward, we will leverage this knowledge in our treasury management and extend the same services to our users.

Our priority will be on safe, sustainable rewards from the DeFi ecosystem.

This calls for an investment approach that distinguishes between the various risk levels across protocols and leverages a useful investment framework from legacy financial institutions – capital tiering.

Rather than allocating based on credit worthiness, InsurAce will create asset tiers based on smart contract risk.

- *Base Capital = Same tokens InsurAce receives premiums in (e.g. ETH)*
- *Tier 1 = Staking in battle-tested protocols*
- *Tier 2 = Participation in yield-farming strategies of major protocols*
- *Tier 3 = Opportunistic strategies and venture investment*

Investment strategies for both native token (e.g. ETH, BNB, MATIC, AVAX) and stablecoin assets will be deployed to optimize for risk-reward from both a traditional investment and technological security lens.

Not only do these proposed enhancements create an additional stepping stone for InsurAce's PUB development, it creates the pathway for underwriters to participate in yield-generating activities.

Regardless of collateral type, users who underwrite on the InsurAce platform will thus be rewarded with multiple layers of rewards:

- Base APY from INSUR tokens and premium-sharing rewards
- Bonus APY from investment returns, protocol bribes and other revenues

These revisions create value for users while reducing reliance on pure governance token emissions, acting in unison to create a sustainable ecosystem.

3.5.Treasury Management

As a growing protocol, active treasury management is critical to our value capture and re-distribution. In InsurAce V1, a total of over $1.3M premium has been earned, with other fees from bridging and un-staking. Revenues collected from these activities form the treasury's foundation. InsurAce's annualized treasury earnings are approximately $2.5M based on current V1 setup.

As the insurance business has now been bootstrapped and generates continuous premium income, treasury management is a necessary feature in V2. Treasury income will be derived from:

- Premiums from cover sales
- Investment returns
- Asset bonding
- Platform fees from bridging, un-staking, etc.
- Bribes from protocol listings and PUB allocations

By scaling out underwriting capacity, earnings will be multiplied given the strong existing insurance demand from our sales network. In addition, projected investment returns and other revenue creates the potential to grow into a $10M+ revenue protocol in the near future.

Incoming funds for the treasury will be allocated for the following purposes:

- X% will be used for PUB as a claims reserve and continue to be invested.
- Y% will be used to buy back INSUR tokens of which Y1% will be used and distributed as rewards in the veINSUR model and (1-Y1%) will be burned.
- Z% will be used as development reserve to support the protocol's future expansion.

A preliminary allocation is X% = 70%, Y% = 30%, Y1 = 75% and Z% = 0%, subject to governance voting. This will be the first governance proposal after V2 is launched to be discussed and approved by the InsurAce community.

4. Products Upgrades and Innovation

Apart from structural upgrades, InsurAce V2 will also incorporate a series of enhancements to offer innovative insurance offerings and application features.

4.1. New Product Offerings

InsurAce's journey into 2022 and beyond are ripe with forward-thinking innovation. Behind the scenes, we have been developing numerous solutions that are poised to change the insurance landscape on numerous fronts.

InsurAce has been at the cutting edge of insurance, offering new primitives such as custodial risk and stablecoin de-peg risk to its existing suite of products in 2021. Our continued expansion into these protocol-driven covers along with our announced structural designs remains a top-priority in the coming months.

Concurrently, we will produce a series of new crypto-native solutions including NFT insurance and wallet-based insurance.

4.1.1. Wallet Insurance

Since our Mainnet launch, users have continuously asked InsurAce to provide embedded wallet insurance. There were several challenges that we had to address – chief of all – how do you prove loss of funds are legitimate? And more importantly, how do you perform these checks in a trustless way that is able to scale with decentralization?

Significant improvements still need to be made at the intersection of zero knowledge proofs, user identity and social credit to build out the solution the way users envision it.

Though there are shortcomings in technology, that does not prevent InsurAce from building a solution to address some of the concerns users have whilst interacting with other protocols. In this way, users are protected and wallets are secure from some of the attack vectors that are known.

The first version of wallet insurance leverages InsurAce's exposure to its partner protocols and gives users the opportunity to finally receive a base level of protection in their wallets.

4.1.2. NFT Insurance

NFTs and Metaverse assets have grown significantly over the last year with the added benefit of onboarding millions of new crypto users. There remains a significant portion of user wealth that remains on hot wallets and is at risk of loss. Our NFT insurance will allow users to claim insurance on their favourite holdings in the event of theft or hacks.

While still in development, our NFT product offering will provide holders with coverage on their favourite NFT(s). This type of policy coverage will be first of its kind and allows InsurAce to help secure investors' assets in a multi-billion dollar market.

Looking forward, this insurance product has the potential to integrate with and protect GameFi and Metaverse projects.

More details will be released to the public as we continue to work through the finer details to create a seamless user experience.

4.1.3. Rug Pull Insurance

The community has spoken and InsurAce is responding. The demand for a product that protects users from rug-pulls has never been higher. As part of our Insurance Marketplace, users can receive rug pull coverage for listed protocols.

InsurAce will work with industry partners to leverage their risk analyses and create listing opportunities for newer protocols. For protocols that are more nascent, this presents an opportunity to demonstrate risk awareness and provide protection for their userbase.

In addition, protocols within the Insurance Marketplace have the opportunity to apply for a listing on the main InsurAce protocol page provided they meet certain growth and community milestones.

Details of new product offerings will be disclosed at the time when the products are launched.

4.1.4. Other Products

Other products in our product pipeline include cross-chain bridge and price volatility insurance. While these products have high demand, they also carry higher risk. As always, we will research and build a product in due time.

Users should also expect InsurAce to expand into products for non-crypto users (e.g. catastrophe insurance) as the opportunity to collaborate with traditional institutions open up. This is an area we are actively investigating and more details will be available in our regular community updates.

4.2.Insurance Marketplace

Have a protocol that you need coverage for that doesn't exist on the InsurAce platform? InsurAce will begin to offer all users the ability to create their own customized bundles and insurance markets for their coverage needs. Capital providers will then be given the opportunity to bid and assign premiums that they are willing to receive for that coverage.

InsurAce will let participants leverage its risk underwriting tools to automate this process and generate a premium fair range. We then match insurance purchasers and underwriters based on the fair range and will provide a window of opportunity for either party to exit from the terms of the deal.

The smart contract then enforces the payout terms of the contract (e.g. smart contract insurance on Ape Protocol) and creates a binding obligation for both parties to fulfil their duties of payment.

For added protection, underwriters have the opportunity to leverage InsurAce's PUB and make requests for capital buffers (which may or may not be denied).

This permissionless marketplace creates a new wave of opportunities for both non-developers and developers to use the InsurAce platform and further security in the broader Web3 space.

While creating an insurance market is potentially lucrative and gives underwriters upfront premiums that they can use to invest, there is also the potential for loss. As a result, we strongly advise that only advanced users undertake this risk.

4.3.New Application Features

Apart from launching new products, another area of improvement is to increase the ease of use and improve our users' experience when they interact with the InsurAce platform.

The first step in InsurAce's development was to build out its integrations with various DeFi protocols via API programs, increasing its reach across the crypto ecosystem. This is one of the main reasons behind InsurAce's significant partnership growth over the last several months.

Users have vastly different preferences in the protocols they interact with. As such, two users that interact with InsurAce may have varying objectives and seek coverage for different use-cases.

There are several features that InsurAce will seek to implement as soon as possible to enhance our users' experience (in order of priority):

- Opt-in for automatic cover renewal – in line with the same terms of the original engagement that the user purchased cover for

- Additional cover options (amendment, cancellation, etc.) to help users correct errors in an increasingly self-sufficient manner
- Cover recommendations upon connection – giving users a customized experience as they navigate various coverage options available
- Chain recommendation – users will be routed to purchasing coverage on the cheapest possible chain to minimize gas fees and help InsurAce diversify its risks across several chains

These integrations should significantly enhance InsurAce's platform experience, minimize frictional costs and create a seamless insurance experience.

5. Conclusion

Four core problems were raised in the beginning of this paper, which we have addressed with leading edge solutions and Web3 innovations. veINSUR

- Misaligned token incentives: new tokenomics with veINSUR and asset bonding models.
- Insufficient cover capacity: insurance aggregator, PUB and whitelisted underwriters.
- Demand for broader product offerings: planned product offerings and new application features.
- Wider and seamless access for more users: multi-chain insurance aggregator and future chain expansion.

Beyond these core problems, InsurAce V2 is an ambitious venture to change the insurance landscape, accelerate capital efficiency and protect users.

Insurance has and always will be a path ripe with disasters and chaos. Challenges are abundant and getting rekt is not a black swan, but the norm.

For us, the opportunity to help protect users and promote a safer Web3 environment amidst this chaotic backdrop is the highest calling.