OUTRER'S CALLEOR BUILDERS

Outlier Ventures

This work distils information from our program recruitment funnel, Base Camp operations, and ecosystem network into a digestible resource for founders, investors, and Web3 enthusiasts. It serves as a guide for understanding both the high-level narratives driving innovation and the microdevelopments happening on Web3.

At Outlier Ventures, we've worked with startups at the cutting edge of innovation for the past decade. A crucial part of our role in the ecosystem is identifying narratives and themes early on to position ourselves optimally to support companies building in these new and exciting areas. Promising new opportunities arise every cycle driven by technological or other breakthroughs, and this cycle is no different...

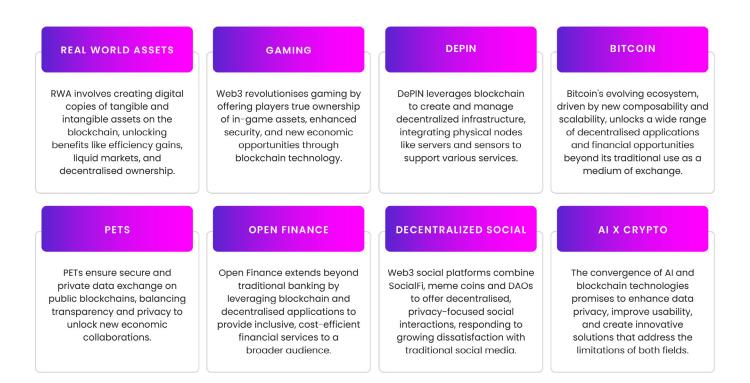


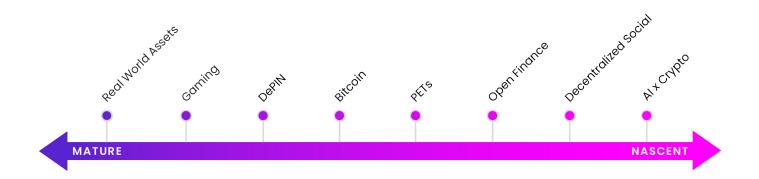
JASPER DE MAERE Head Of Research at Outlier Ventures

OUTLIER'S OUTLOOK

In this work, we look at some of the narratives that we believe are exciting areas where founders are building promising new Web3 primitives and where we, as the global leading Web3 accelerator and most active Web3 investor, can have significant impact in supporting founders at the beginning of their journey.

While this is not an exhaustive list, the below outlines verticals where we are expecting to run a program in the next three to six months:





Not all these themes are at the same stage in their life cycle. Some are more mature than others. Below is a quick timeline of how we think they stack up to one another:

Our excitement and belief that this is prime time for these verticals generally revolved around inflexion points in their developments. These can be based on new technological breakthroughs, regulatory clarity, increased mindshare and interest in the vertical, or the beginning of a longsought-after market fit. In the pages below, we dive deeper into the dynamics of each of these verticals. Alongside insight on the vertical, we share some calls for builders. This list should be a source of inspiration for anyone building in these areas but is by no means an exhaustive list of pockets we're looking to work with. That being said, if you are working on these, <u>get in touch</u>!



REAL WORLD ASSET TOKENIZATION



KATIE LUNDIE Accelerator Lead

"The tokenization of Real World Assets (RWAs) has gathered a lot of media attention recently, with major financial institutions now actively participating. While finance pioneers this trend, the applicability of RWAs' tokenization spans across sectors such as art, luxury, supply chain and much more. This innovation promises to transform industries and economies, heralding the next wave of mainstream blockchain and distributed ledger technology (DLT) adoption."

TLDR – WHY NOW?

- More mindshare & activity We see more mindshare and activity from a larger group of players actively trying out the technology.
- Tech stack & developer trading

 We see improvement in the infrastructure and tooling required for tokenization of RWA.
- Legal & regulatory clarity We see improvement in regulation towards digital representation of assets and their underlying ownership. We expect this only to accelerate.

REAL-WORLD ASSET TOKENIZATION (RWA) CREATES A DIGITAL COPY OF ANY ASSET AND STORES IT ON THE BLOCKCHAIN.

These assets can be tangible, like art or property, or intangible, like financial instruments and intellectual property. In doing so, the asset holder can unlock benefits such as efficiency gains, liquid market formation, and decentralization of ownership.

READ: Beyond The Hype Of Real World Assets

Half a decade after the initial hype, the opportunity for RWA tokenizaton looks very different. Since the initial excitement of scaling smart contract execution back in 2017, much has changed. Since then, there have been significant technological improvements, such as scaling and tooling. Secondly, we have seen greater regulation. Apart from the US, which is still grappling with regulatory clarity, many other regions across Europe, Asia Pacific, LATAM and MENA have been lenient in implementing blockchain-based systems. Lastly, there's just generally more mindshare and excitement about the opportunity. This has translated into large institutions, led by the financial industry, rapidly adopting blockchain-based systems.

When spending time on the ground, it becomes apparent that the financial industry is leading the charge on

blockchain-based asset tokenization. Across consumer finance, wealth management, investments, sales and trading, and tokenization are expected to add value. It's not a surprise if you take a closer look. Financial assets benefit enormously from all kinds of benefits like efficiency gains, liquidity and decentralisation of ownership. On top of that, financial assets represent 2/3rds of all value of global assets and are already digital, making them accessible, high-value assets to represent on-chain. Finally, the industry uses the same terminology as crypto, so there's less of a learning curve for financial professionals to find their way towards blockchain solutions.

We expect RWA to continue to see strong adoption by challenger and incumbent players in and outside the financial realm. It's exciting to see the rubber finally meet the road.



TRENDS

- Finance Leading The financial industry is leading in adoption, with T-bills being the main focus, followed by tokenization of private credit, ETFs, and other alternative investments.
- Sophisticated Marketplaces Marketplaces are becoming more sophisticated, leveraging smart contracts and blockchains to create new marketplaces with unique dynamics.
- **Tooling** Infrastructure and tooling makes tokenization easier than ever before.

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Institutional Proof Tokenization

Corporations operate under different rules, dealing with sensitive information that requires strict regulation and offers them an economic edge. Despite a growing interest in blockchain technology, these entities need privacy assurance before tokenizing assets and storing data on a transparent database. This can be achieved through privacyenhancing solutions, private ledgers, or other tools. We see a significant untapped opportunity in making tokenization more accessible for institutions.

Asset Segregation

Due to its programmable nature, tokenization can untangle nested assets. In plain English, an asset may have value locked within it. For example, farmland and its associated carbon credits have economic value, but are often traded together due to the high costs of separating them. Tokenization's programmability and smart contracts make treating them as distinct assets easy. We encourage users to see tokenization as an opportunity to untangle assets and unlock value.

Intellectual Property

Tokenization has the potential to completely reform the way IP is generated, financed, and monetized. By enabling capital formation to finance activities, increasing transparency, and fractionalizing ownership, tokenization can create a more efficient and equitable system. We believe that IP across some industries, such as healthcare, software, industrials, media & entertainment, and beyond, can greatly benefit from these advancements. Tokenization will not only democratise access to investment opportunities but also ensure creators receive fair compensation, enhance the traceability of IP rights, and streamline the management and transfer of IP assets.

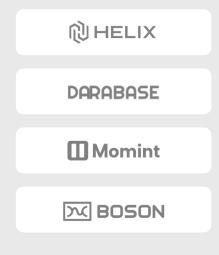
RWA Indexing Tools

Conservative estimates show that \$15Tr of value will be tokenized by 2030. This means an immense number of unique assets will be tokenized and in the ownership of an equally large number of asset holders. To ensure a base level of transparency and structure, RWAs need improved indexing tools to monitor the provenance and movement of these assets over time. While some of this data will be embedded directly into the token, we still need better indexing tools.

RWA Market Makers

An ongoing issue when tokenization of RWA is used for market formation is the liquidity of the assets. The more non-fungible underlying assets are, the more difficult it is to create liquid markets. If there isn't sustained demand from buyers and sellers of the underlying asset (which usually only happens with speculative- or non-durable assets), the bid-ask spread for the asset to switch hands becomes too big. Large bid-ask spreads render market formation around low-yielding assets economically unviable. If we want to make the tokenization of alternative assets a reality, we must see liquidity solutions and market makers stepping in to reduce this bid-ask spread. It's still largely unexplored, but we believe it will be critical to RWA's future.

SOME OF OUR PORTFOLIO COMPANIES



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MATTHIS HERBRECHT Token Design

"Gaming is a field shaped by the players themselves. Look at Minecraft, Roblox, and Fortnite, where gamers are at the heart of the creative process. Now close your eyes and imagine a permanent autonomous world where players have the cards in their hands to shape it in their own way. No cheating, no rules, just a vast, transparent sandbox where everyone is equal."

TLDR - WHY NOW?

- Infrastructure Infrastructure is a significant bottleneck for fully on-chain games. The rise of L2 and L3 solutions with gaming SDKs and a multichain approach highlights efforts to overcome these limitations.
- Porting Over Web2 gaming studios and incubators partner with tooling providers to transition them to Web3 infrastructure.
- Integrating Features Many Web3 games are now positioning themselves as Web2 with new features, a successful strategy for attracting new users.

GAMING SHOULDN'T BE NEW TO MANY, AS IT HAS EXISTED SINCE THE DAWN OF HOME COMPUTERS IN THE 1970S.

What is new is the way Web3 revolutionizes gaming. Casual and hardcore gamers, each with different drivers, benefit from the trustless, composable, ownership-centric approach that blockchain-based games can offer.



Web3 potentially revolutionises gaming by granting players unparalleled ownership of in-game assets through blockchain technology. Games use blockchain technology to add different layers of ownership, data storage, composability, and transparency or even to create permanent games, tailoring the DLT integration to their vision. This decentralisation enables seamless asset trading across games, fostering transparent, community-driven ecosystems and closer collaboration between developers and players. Enhanced security and transparency significantly reduce fraud, driving innovation and novel gameplay experiences. As Web3 continues to evolve, it brings a transformative shift in gaming, emphasising player empowerment, economic inclusivity, and collaborative creativity. This shift not only empowers players by giving them actual ownership and control over their digital assets, but also creates new economic opportunities and a more inclusive gaming environment where creativity and community thrive.

Due to the heavy tech requirements of getting an entire game, including the state and the game logic on-chain, infrastructure has been a bottleneck for Web3 game adoption. Recently, we've seen many L2s, L3s, game engines (Mud, Dojo, Argus), and plasma roll-ups improve the potential to run games. This, in combination with the more frequent multichain approach of Web3 gaming studios, gives us confidence that we're overcoming this hurdle. Beyond that, we're seeing Web3 games becoming more Web2 by abstracting away the technology, allowing them to syphon Web2 gamers. At the same time we're also seeing increasing partnerships between Web2 gaming studios and Web3 tooling to port these games over.

Unlike other trends, gaming in Web3 is a structural, longer-term trend that continues progressing regardless of the broader market environment. That said, we've seen some exciting developments recently, which makes us incredibly excited about the near-term developments in space. Keep a close eye on here.

TRENDS

- Blurring Lines The lines between Web2 and Web3 are slowly starting to fade as Web3 games adopt Web2 front-end and Web2 games explore blockchain backends.
- Sustainable Game Design Unlike the first wave of Play to Earn games, we're seeing more sustainable game design that prioritises player enjoyment over financial gains.
- Expanding Game Realm Increasingly, Web3 games are pushing into extended reality, focusing on immersive, AR/VR, and we expect Esports soon as well.sk spread. It's still largely unexplored, but we believe it will be critical to RWA's future.

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Al-driven NPC and Lore

Web2 and Web3 games face challenges with escalating costs and stagnant lore. These can be addressed by integrating Aldriven NPCs and lore, which autonomously create evolving storylines and character interactions based on player choices. This reduces the need for frequent developer updates, deepens the narrative, and customises player experiences, enhancing engagement. Al's role in lore and NPC behaviour also enables scalable, immersive game worlds within the blockchain, expanding game design and player interaction possibilities.

The Fog Of War

Many of the existing blockchain-based games are on Web2.5. While in-game assets exist in the form of NFTs and currencies, the game logic, state, and code exist on servers that the game developers operate. A true Web3 game has the entire game, including source code, logic, state, and assets, populated on the blockchain. As technological limitations are overcome, more elements of games should be populated on the blockchain as we move into full-on-chain games (FOCG).

Extended Gaming Realm

Many blockchain-based games focus on asset ownership. However, the potential to unlock new levels of governance, community, and immersive experience using blockchain is often left unexplored. Game developers should leverage and combine these elements to create meaningful experiences in and outside the gaming realm and turn them into real-world experiences such as community events, esports, and more.

Social Reputation Layer

This point feeds into the previous one. SocialFi is heating up, so we would love to see what is possible if it converges with gaming. Combining both should enrich the digital identity of users/players in both a social and a gaming context, serving as a social reputation layer in and outside games. Gamers spend hours grinding achievements for bragging rights, and allowing them to port that onto social platforms is a natural next step.

Speedrunning Meets Blockchain

Speedrunning is the art of completing a game as quickly as possible, utilising deep game knowledge, precise execution, and creative strategies. It epitomises innovation and player grit as they discover glitches, optimal routes, and new techniques to shave off precious seconds. As exciting as it is, speedrunning is also plagued by cheaters who use splicing, TAS, and seeded runs. Integrity is vital in speed running. While we wait for fully on-chain games, blockchain can still provide anti-cheating mechanisms by ensuring transparent, tamper-proof record-keeping and validation processes.

Mobile games/handheld device games

This one is highly straightforward, but the reality is that ever since the release of the iPhone in 2007, mobile has gathered market share in the gamer market to the point where it's estimated that today, almost four out of five gamers globally are mobilefirst. So, to find mass adoption, it's logical that Web3 also needs to focus on mobile first. There are still some hurdles regarding account abstraction, but some initial mobile-first web3 games look promising. We're excited to work with any projects that provide mobile-first developer tooling or platforms to host these suites of games on.

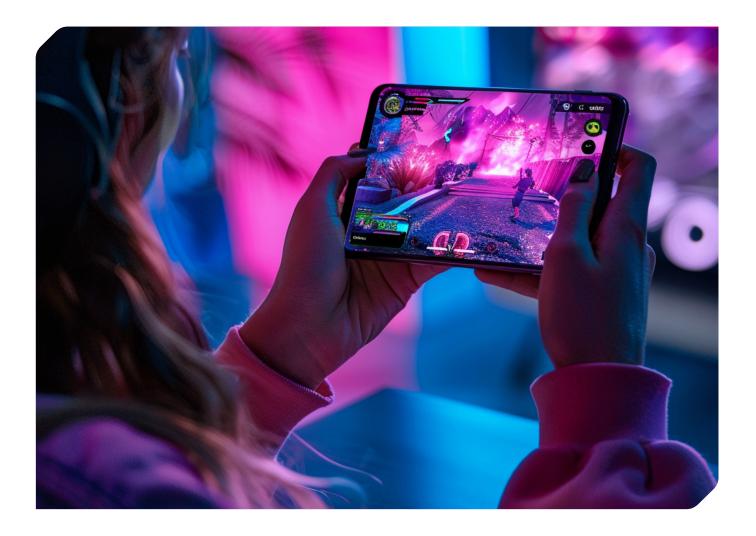
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ECENTRALIZE PHYSICAL NFRASTRUCTURE NETWORKS



JOSEPH OPFERKUCH Investments

"Distributed and Decentralised efforts to create value for Web2 businesses will be the core of DePIN, bootstrapping a decentralised Supply Side and offering unbeatable value to Web2 industries. One of the first Web3 offerings to provide value outside purely financial products."

TLDR - WHY NOW?

- Computing Cost Reduced
 computing costs make small scale nodes affordable, benefiting
 supply and demand.
- AI-Powered UX/UI AI-powered interfaces ease DePIN and token management, driving demand.
- Privacy Concerns Privacy and security concerns with AI spread push users to alternative solutions, increasing demand.
- Demand For Data Increased data generation from AI and open-source movements boosts demand.
- Utility Tokens Maturing Mature utility tokens create strong incentives, supporting DEPIN growth and enhancing supply.

DECENTRALIZED PHYSICAL INFRASTRUCTURE NETWORKS (DEPIN) ARE TURNING INTO A CATCH-ALL TERM.

In short, DePIN comprises physical and virtual infrastructure networks that serve as the framework for supporting operations, distribution, and management of services and resources. We classify a project as DePIN if it (i) uses blockchain to create and maintain decentralized infrastructure and (ii) relies on or impacts physical nodes such as servers, sensors, etc.

READ: DePIN And The Platform Economy



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WHY NOW?

DePIN found initial success in hosting digital infrastructure like storage, computing, wireless communication, etc. Traditionally, digital infrastructure has been centrally run and is marked by high entry barriers due to capital formation and upfront costs to enter the space. We've entered a second wave of DePIN excitement; this time, the scope is expanding into data collection, AI infrastructure and the platform economy. First, there's the move to data networks. The purpose of physical infrastructure is shifting from providing an explicit service to extracting data (weather data, images, traffic) from geographically important locations as real-time data becomes more valuable driven by AI. Second, there are the service networks. In Web2, society has built economic dependence on centrally managed service networks. DePIN is reimagining how these economic activities can be coordinated more efficiently through physically decentralised nodes.

Besides the apparent improvement in blockchain technology over the years, other drivers excite us about DePIN. (i) The costs of computing and hardware have dropped significantly, making it affordable to run small-scale nodes, benefiting both supply and demand. (ii) AI-powered interfaces are becoming available to consumers, making it easier to manage DEPINs and tokens and driving demand. (iii) As AI spreads to billions of users, concerns about privacy and security are rising, pushing users to seek alternative solutions and increasing demand. (iv) There is a surge in data generation across network nodes due to AI and open-source movements, further boosting demand. (v) The development of utility tokens has matured, creating a solid incentive structure that supports the growth of DEPINs and enhances supply.

We expect DePIN to continue challenging the status quo of centrally managed services across digital infrastructure, data generation, and social platforms, driven by strong tailwinds on the demand side for the services and an improving technology stack.

TRENDS

- Data Networks DePIN creates decentralised networks that merge connectivity with data generation, transforming traditional roles into data extraction.
- Service Networks DePIN is starting to include service networks, previously reliant on centralised entities (Web2), as DePIN integrates digital infrastructure into these networks.
- Edge Devices Rather than using special-purpose hardware, an increasing number of DePIN projects are leveraging existing hardware, such as edge devices.

CALL FOR BUILDERS

Gamification Of Contribution

DePIN heavily relies on network effects, which many new projects are trying to kickstart through point systems and airdrops. This is just the beginning of the gamification of individual users' contribution to the network effect. The point systems used today are blunt tools to incentivise. There is an opportunity here for more elegant and subtle gamification of contribution, driving contribution more organically and intrinsically by the users versus pure financial incentives, as points translate directly into the size of the airdrops.

Mobile First DePIN Applications

What piece of hardware is loaded with sensory equipment, owned by most of the population, and connected 24/7? That's right, smartphones. Mobile-first applications on these widely owned devices leverage existing paradigms to find shortadoption and long-term market fit. We are excited about innovative solutions that come in Web2-like apps, making adoption easy for the average user while leveraging the hardware capabilities of current smartphones. Additionally, network contribution should ideally be passive rather than active, so users only need to install the app and occasionally check in.

Renewable Energy Networks

DePIN, combined with RWA tokenization, has the potential to re-engineer the renewable energy business by rethinking how infrastructure is created, financed, and used. Since the early days of digital infrastructure, DePIN has been expanding its scope into other aspects. Renewable infrastructure is another area where DePIN could provide significant value around capital formation, ownership, access, and governance over this critical infrastructure. The modular approach of DePIN coming together to provide infrastructure is valuable when trying to scale, innovate, and improve the sustainability and efficiency of renewable energy networks globally.

Dynamic Token Model Tools

Token incentive structures are a critical component of DePIN, forming the backbone of user contributions to the decentralised network effects on which DePIN businesses are built. A dynamic approach to token incentives is needed to create sustainable user incentives and achieve network effects that reach escape velocity. We are seeking elegant solutions that can quickly answer this complex problem. We expect to see Al capabilities used in the solutions for on-chain monitoring, network modelling and feedback.

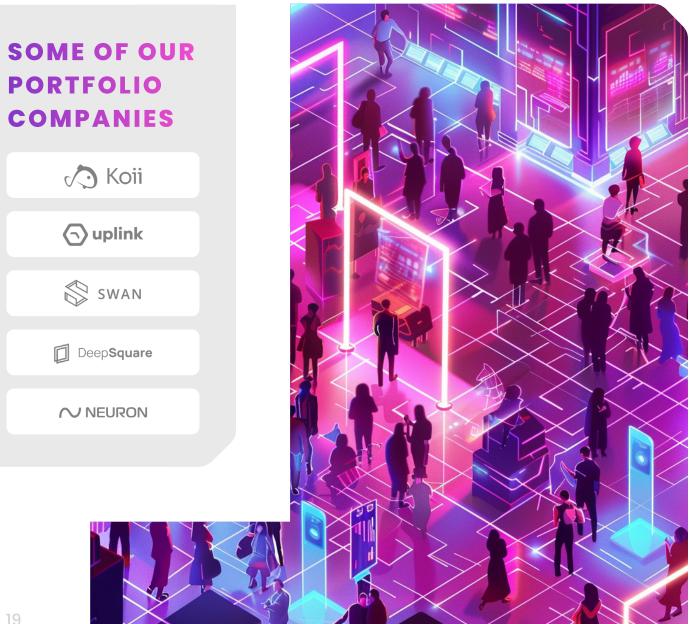


Agentic Support

DePIN is a promising solution for tackling some structural issues and infrastructure limitations. However, they also come with some new challenges. The additional complexity and decision-making required to run, participate in, and contribute to DePIN networks is big. (i) Users must make many micro-decisions around holding, selling, and buying utility tokens across different services. (ii) Contributors still need manual input, making it sometimes not worthwhile to contribute to the network

from a financial remuneration point of view. We believe that agentic systems are a critical piece in solving these challenges by automating decisions for users and making contributions to the network easier (passive vs active). We're excited for any builder active in agentic systems to solve this and supplementary tooling and services to make this all possible.

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BITCOIN ECOSYSTEM





HANAN NOR Investment Manager

"With breakthroughs in composability and scalability, Bitcoin is not just a store of value but a dynamic base-layer for decentralized applications. The emergence of ordinals, runes, and new layer-2 solutions opens up untapped opportunities, attracting top talents into the ecosystem and transforming idle BTC into powerful assets within a thriving digital economy."

TLDR - WHY NOW?

- Composability Composability is coming online in the form of ordinals, runes and more, allowing the creation of non-BTC native assets on the ledger.
 - **Developers return** We see exciting developers returning to BTC after a journey across other smart contractenabled blockchain platforms.
- **Bitcoin's unique value proposition** -Bitcoin is the ledger with the largest

network effect, highest integrity. A very strong and unique proposition for builders.

- Massive opportunity More than 99% of all BTC is sitting idle in HODLer wallets. Activating these assets with more functionality is a massive untapped opportunity.
- Scalability We're seeing a new wave of exciting L2s and sidechains approaching mainnet, allowing the scalability of the chain to truly come online.



TO ANYONE READING THIS, BITCOIN SHOULDN'T NEED AN INTRODUCTION. WHAT COULD BE NEW IS THE IDEA OF BUILDING AN ECOSYSTEM ON TOP OF THE WORLD'S MOST VALUABLE DISTRIBUTED LEDGER.

A new ecosystem of Bitcoin builders has emerged from recent breakthroughs in composability, bringing new assets outside of BTC to the ecosystem and unlocking many new and exciting opportunities.

READ: Bitcoin Unchained: The New Startup Goldrush

Since the start of 2023, Bitcoin has been shedding its skin. For a long time, it has been seen as a medium of exchange or a store of value, meant to sit centrally in a new monetary regime where Bitcoin plays a pivotal role. While this is all still true, the ledger is developing itself, showing its versatility in the shape of more functionality, composability and scalability of the network. Despite making up half of the digital asset market cap, less than 1% of BTC is used in dApps in the Bitcoin ecosystem. BTC holders should be more utilised in their assets by HODLing. We believe that bringing utility to the BTC ecosystem is the largest underexplored opportunity in digital assets today, with a lot of easy wins.

The new Bitcoin narrative is driven by the new composability in the form of inscriptions, ordinals, BRC-20s and, more recently, runes. This, combined with breakthroughs in scalability, unlock an entirely new dimension of decentralised applications to be built on top of BTC. Across decentralised finance, consumer, and more, we're seeing excitement from the Bitcoin community and abroad in building applications using insights and blueprints from previous iterations in other ecosystems like Ethereum, Solana, etc. Bitcoin's value proposition lies in its unmatched network effect, its unique positioning on the blockchain trilemma, its focus on security and decentralisation, and finally, the increasing adoption of BTC on balance sheets of corporations. This makes it an attractive foundation for founders aiming to build resilient and widely accepted digital solutions.

We see the Bitcoin ecosystem rapidly accelerating growth driven by breakthroughs in composability and scalability. Using blueprints from dApps in other ecosystems, the Bitcoin ecosystem can quickly build out its network across DeFi and other areas, utilising previous learnings. Besides porting existing dApps onto the BTC ecosystem, there is excitement about leveraging Bitcoin's unique features to develop new dApps with differentiated value propositions.



TRENDS

- Ecosystem Navigation The Bitcoin ecosystem is exploding, with many metalayers going to mainnet. Staying on top of the innovation is critical for builders.
- **DeFi** As the backbone of many other applications, DeFi capabilities are quickly being built out in the Bitcoin ecosystem.
- Fungible Token Standards With Runes being the latest successful token standard, we're seeing rapid changes in how fungible tokens are issued on BTC now that they are finally available.

CALL FOR BUILDERS

Institutional-Grade DeFi

We are excited about Bitcoin hosting Institutional Grade DeFi and believe it will materialise based on our current observations in the ecosystem. Bitcoin's ledger has the highest integrity, security, and decentralisation. Additionally, assets minted on the chain contain metadata on the Bitcoin blockchain, a unique feature that we believe is critical for institutional adoption. This creates a supportive environment for institutions to favour the Bitcoin ecosystem over other permissionless blockchains. On top of that, many large financial institutions disclose exposure to BTC or Spot ETFs, as their embrace of the underlying asset reduces the gap for adopting the chain for tokenization and DeFi.

Bitcoin Stablecoins

Stablecoins serve as the mechanism of exchange on distributed ledgers. So far, stablecoin adoption has been a prerequisite for RWA tokenization adoption. While Bitcoin can operate with its native asset, the reality is that the price is still too volatile to be considered an efficient mechanism of exchange for settling transactions involving RWA or other transactions. BTC-based stablecoins are needed to provide a resilient mechanism of exchange. We're already seeing initiatives on sidechains and L2s, such as the Lightning Network. We believe these need to be adopted by all layers serious about RWA and non-BTC native asset use cases.

Middleware & Tooling

Bitcoin's ecosystem is flourishing, with improvements in composability and scalability through network upgrades, sidechains, and Layer 2 solutions. Despite this progress, a critical need remains for more specialised middleware and tools, such as oracles, development frameworks, governance tools, identity layers, indexing and security auditing tools, designed to unlock Bitcoin's unique potential. We think there's still a long way to go until this part of the ecosystem fully matures. Unlike some application layers, middleware development can not rely on the blueprints of existing smart-contract ecosystems and comes with its unique challenges due to the fundamental architecture of the Bitcoin baselayer.

Cross-Chain Applications & Interoperability Since ordinals arrived on the BTC mainchain,

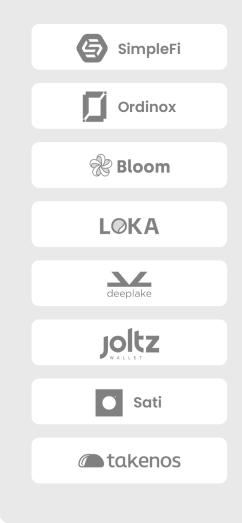
numerous sidechains and L2s focusing on security, EVM compatibility, and other features have emerged. Bitcoin is evolving beyond value transactions on L1, starting to resemble other smart contract, multilayer chains. As a result, many applications will likely leverage a multichain approach, using the best features of all chains in their aggregated value proposition. However, improvements in cross-chain interoperability are crucial to enabling secure asset and data transfer between layers. This represents a significant opportunity to expand Bitcoin's use cases by leveraging its security while facilitating complex functionalities on other chains. Additionally, it enhances efficiency and scalability, reduces transaction fees, and fosters innovative consumer-oriented applications.

Governance Tools

Ossification is an important and divisive topic in the Bitcoin community, referring to the debate over whether Bitcoin's protocol should become more fixed and resistant to change or remain adaptable. The reality is that the largest, most decentralized blockchain is going through a renaissance, leaving the community with numerous decisions to make about its direction of travel. Decisions on the base layer regarding upgrades on its numerous meta layers (sidechains and L2s) are critical for shaping the ecosystem's future. This highlights the necessity for robust governance tools, which are more crucial than in any other ecosystem, as BTC still makes up half of the total digital asset market cap.

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PRIVACY ENHANCING DECHNOLOGY

Hil Li



ELLIOT LEIMER Senior Accelerator Lead

"Privacy-enhancing technologies are vital for transforming business processes beyond Web3. They enable secure, private data exchange, ensure compliance, and protect end-user privacy while leveraging the trustlessness of public blockchains. These innovations bridge industries, support the transition to blockchain-based financial systems, and enhance data security and trust, ultimately changing how end users interact with online services and applications."

TLDR - WHY NOW?

- FHE Maturing Products like FHEvm and FHEnix are putting FHE capabilities into the hands of developers, making them more widely used in dApps.
- Cost Curves We're seeing hardware and compute cost curves come down rapidly, making heavy computation privacy solutions economically viable.
- Corporate Adoption Regulation, ETF approval, and other factors are driving corporate exploration of blockchain, with a need for PET solutions.

THERE'S A COMMON MISCONCEPTION ABOUT DISTRIBUTED LEDGERS OR BLOCKCHAIN IN THAT THEY ENHANCE THE CONCEPT OF PRIVACY. THE OPPOSITE IS ACTUALLY TRUE. BLOCKCHAINS ARE NATURALLY TRANSPARENT, ALLOWING THEM TO INCREASE TRUST.

For many potential use cases of blockchain, especially when dealing with sensitive data, a level of privacy is required. Privacyenhancing technology (PETs) like Succinct zero-knowledge arguments/proofs (ZK), fully homomorphic encryption (FHE), secure multiparty computation (MPC) and trusted execution environments (TEE) can help blockchain achieve the desired privacy. Trust is a critical element in business. Without a base level of trust, transactional economic activity becomes virtually impossible. This is especially true where the transaction involves sensitive data. The right balance between privacy and transparency is needed to unlock certain economic transactions in sectors like healthcare, finance, insurance and the public sector. This is what we call "trustless synergies", and we believe that they are the least explored and understood benefit, in contrast to the other benefits of innovation and efficiency gains of corporate adoption of blockchain technology.

Trustless synergies create synergies between economic actors with conflicting incentives, such as business competitors. For these to collaborate, they need to have a certain level of trust. While blockchain promises trustlessness through its transparency, it lacks the required sufficient privacy to give parties trust that the data they provide is handled with integrity. We have seen early initiatives that failed to integrate blockchain, partially due to a lack of trust in sharing data, like the freight project tradelens. Privacy-enhancing solutions, while not unique to blockchain technology, offer a compelling solution to find the perfect balance between transparency and privacy. It's still early days, and many technical and resource hurdles still need to be overcome. We believe many today are underestimating the potential of what PETs bring to the blockchain equation. They pave the way to truly unlock trustless synergies, a completely new paradigm of economic collaboration in the age of information.

Some pockets within the PETs like ZK are making rapid progress to the point

where broader based implementation is finally becoming viable. As PETs become mainstream, trustless synergy and the benefits of it will be appreciated by the market. Based on our experience of working closely with these cohorts we believe that this is the opportune inflection point.

TRENDS

- Security Concerns There are increasingly more security concerns around sensitive and confidential data, driving the adoption of PET.
- FHE is here Fully homomorphic encryption is rapidly being developed, offering an alternative to Z and MPC.
- Cheaper ZK The cost of compute for ZK, which has historically been considerable, is coming down quickly, making it a viable PET solution.

CALL FOR BUILDERS

Trustless Synergies

We believe an underexplored opportunity exists to create trustless synergies between economic participants by integrating privacy-enhanced, trustless databases such as blockchain. Trustless synergies allow for information-sharing synergies to be generated between participants with different economic incentives, such as competitors. Collaboration between these actors is only possible if transactional trust is established. We see blockchain combined

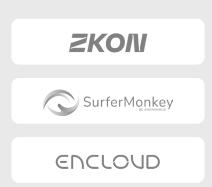
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with privacy-enhancing technologies (PET) as a tech stack that could make this a reality. We are looking for builders actively contributing to building out this stack and unlocking new levels of secure and trustless collaboration.

Privacy-preserving Social

Unlike the early days of MySpace and Facebook, social media users now seek greater control over their privacy. As social interactions move on-chain, allowing users to tailor their privacy levels according to their comfort is crucial. While blockchain technology is fundamentally transparent, privacy-enhancing technologies (PET) can help social platforms become a secure identity layer for more Web3 applications across industries. A privacy-first approach is essential to avoid the mistakes of Web2 social media, ensuring user data protection and trust while enhancing Web3 adoption across various sectors.

SOME OF OUR PORTFOLIO COMPANIES



Privacy-preserving Proof of Personhood

With the diffusion of Gen AI across society, the need for proof of personhood, a method that verifies whether a digital individual is real, is becoming very apparent. At the same time, this proof mechanism needs to be privacypreserving, keeping (parts of) their identity concealed if desired. This is crucial not only from a privacy and compliance perspective but also for security. In a future where bots make up the vast majority of digital activity, showboating personhood might be like sticking a target on your back for malicious activity. We're looking for solutions that can provide proof of personhood in a frictionless and privacy-preserving way for users.

Tailored Private Data Access Control

Everyone has information about themselves that they don't want the entire world to know. At the same time, there is information about an individual that the whole world should know. There are different shades of confidential information. Managing access to all of this can be a tedious task, and if the privacy paradox teaches us anything about privacy management, it is that individuals simply don't care. Managing privacy will only become more critical in a decentralized world where users are empowered to actively make choices about these things. We're looking for solutions that integrate data access control in a user-friendly way.

APPLY NOW

OPEN FINANCE





ROBERT MULLINS Token Design Lead

"Decentralized Finance has shown a clear productmarket fit but faces challenges due to its complexity, high barriers to entry, and fragmented attention across dApps and blockchains. As it stands, bringing DeFi to the masses is difficult. Open Finance aims to enhance the DeFi MVP and ease the transition between off-chain Open Banking and on-chain DeFi. It allows users to benefit from blockchain technology without needing deep technical knowledge."

OPEN FINANCE IS SEEN AS THE NEXT STAGE OF EVOLUTION FOR THE FINANCIAL INDUSTRY AFTER OPEN BANKING.

It is focused on breaking down the barriers to entry, such as central control, information

asymmetry, and more. The innovation for open banking is the adoption of a combination of DEX and dApps to offer fully decentralised services. Open Finance also moves beyond traditional financial services provided by institutions. It taps into new product offerings such as payments, remittances, save/earn, trading, etc.

TLDR – WHY NOW?

- Mechanism Of Exchange Stablecoins, which serve as the mechanism of exchange of Web3 financial dApps are seeing broad based adoption and regulatory approval.
- Scaling Scaling is coming online, lowering transaction costs and making low-value exchange use cases like payments economically viable.
- Smart Wallets Wallets are going through a renaissance with the embedding of AI, abstraction of accounts and more. We also recently saw the EIP-7702 being discussed.
- Neobanks Neobanks are moving towards semi-custodial solutions and crypto rails. Their existing platforms could serve as an aggregation layer to drive adoption.

Today's financial system fails to provide a base level of financial service to billions of people globally, severely limiting their economic participation. Blockchain technology fits the bill as a technology set to change this. So far, we've seen the majority of efforts happening on (i) the infrastructure side, which is DeFi and (ii) institutional adoption, which is driven by RWA tokenization of financial instruments by incumbents. The pocket that's missing is consumer finance, where trustlessness and smart-contract execution can have a meaningful impact in driving down costs, democratising access and protecting consumers. We see Open Finance as the next logical step in building out blockchain-based financial services.

We believe the entire Open Finance ecosystem, from onramp and compliance to consumer application and DeFi primitives, is set to flourish as more consumer-facing financial services continue to abstract complexity away. These services are starting to offer economic solutions in a more costefficient, seamless, and inclusive way than any centralised alternative.

We see two drivers behind the adoption. First, there is the broad adoption of stablecoins, which is the mechanism of exchange. Second, scaling solutions are maturing, lowering transaction costs to the point where many of these use cases become economically viable, especially in emerging markets with lower purchasing power. As a cherry on top, we see existing neobanks moving in this direction with their non/ semi-custodial wallets and crypto offerings, validating our suspicion. In every crypto cycle, there seems to be some kind of consumer-facing crypto narrative emerging. We believe that this time around, one of those will be dominated by financial applications. We are excited because this can be the trend that pulls together the elegant DeFi solutions built out over the past few years and puts them in the hands of the masses.

TRENDS

- Neobanks Neobanks increasingly incorporate open finance products into their offerings, improving customer access to a broader range of financial services.
- Empowering User There's an increasing emphasis on empowering users as they get more financially literate. Open Finance plays into this movement.
- Financial Inclusion In a digital-first society, financial inclusion is a key focus. Smart contracts lower the overhead cost of financial services, making them more accessible.

CALL FOR BUILDERS

Cross-Currency Compatible

Today, 99% of stablecoins in circulation are denominated in USD. Having stablecoins or at least a denomination of services in other significant currencies is crucial in driving the mainstream adoption of blockchain based consumer applications. The average finance application user is not financially literate enough to navigate Fx risk on transactions and in their wallets. From a UX perspective, there's also confusion about not having services denominated in native currencies. In the short term, having meaningful liquidity pools of any asset paired with anything outside of USD is impossible and will simply lead to liquidity splintering. That's why we're interested in seeing more elegant solutions that can work around the liquidity limitation, but still offer a locally denominated currency experience to the users of consumer Web3 finance applications.

Private Transactions

Blockchains are inherently transparent, something which is double-edged. Privacy is essential for several reasons in consumer finance, and by extension, open finance. First, it ensures the confidentiality of financial data, which is vital to ensure autonomy and control over financial activities. Second, it supports regulatory compliance, and third, it's necessary to foster trust and adoption of these new open finance systems. Using privacy-enhancing technologies or other primitives like mixers and privacy pools, users need to be given the option to have a baseline of privacy when it comes to performing on-chain transactions. We expect solutions to blend in a mix of the aforementioned technologies to achieve the desired privacy.

KYC and Compliance

Unlike traditional consumer finance, which players in the space vertically integrate, blockchain-based open finance is shaping into a modular system. Building on the trends seen in DeFi around micro or special-purpose applications, users of open finance can leverage benefits from different primitives to compose their ideal consumer finance app stack. As users will be custodians of their assets, they must also ensure compliance with KYC and other regulations. There is still a lack of clarity, so the working assumption is to go with a regulation-first approach, applying the highest compliance principles. We need the solutions to seamlessly integrate with the entire modular stack, allowing a high degree of freedom across all applications without the friction and red tape that typically accompanies this process.

Aggregation Layer

Providing users with frictionless, easy, and understandable financial services has been a critical factor in the economic moat of open banking. Open finance needs to build upon that. To achieve this, we must see aggregation layers abstracting away the modular technology stack, providing users with the same level of frictionless financial services with even more functionality than before. These aggregation layers will likely be mobile-first and almost indistinguishable from neobanks' existing product offerings. It's also likely that these same neobanks will participate in this aggregation layer as they start to offer services like (semi) custodial wallets, etc.

Credit Score & Title Enforcement

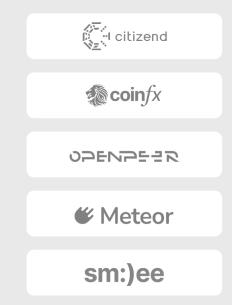
Credit scoring and title enforcement are standard practices in today's world of consumer finance. They improve the security and efficiency of the system. Despite the increased level of trust due to blockchain integration, we still believe

OPEN FINANCE

these are necessary parts of open finance. Credit scoring assesses borrower reliability for secure lending, while title enforcement ensures clear, enforceable asset ownership to protect against fraud and disputes. Both sit close together with an on-chain reputation. We would like to see some solutions bringing credit scoring and title enforcement together while preserving a base level of on-chain privacy for its users.

APPLY NOW

SOME OF OUR PORTFOLIO COMPANIES



DECENTRALIZED SOCIAL (DESO)





LORENZO SICILIA Head of Engineering

"DeSo Networks can replicate the same 'DeFi Lego' paradigm we saw succeed in the last cycle. We see an improvement in user onboarding, accompanied by an increasing number of new permissionless primitives (e.g., frames, open actions, etc.) released to builders. Solving the infrastructure issues as well could finally unveil a healthy native distribution channel for Web3 founders."

TLDR - WHY NOW?

- Growing unhappiness After a decade of stability, we see growing discontent of existing social media platforms around privacy, censorship, algorithmic control, etc.
- **Memecoins** Memecoins are proving to add intrinsic value to the ecosystem regarding community building and social coordination.
- Scalability Social in a highly interactive vertical, requiring throughput and scalability of the blockchain. We're seeing proof that the technology is mature enough to support this.

WE'RE OBSERVING HEALTHY DEVELOPMENTS IN POCKETS OF WEB3 SOCIAL, WHICH WE BELIEVE COMBINES SOCIALFI, MEME COINS, AND DAOS.

As a highly transactional industry, social lends itself well to being hosted on blockchain infrastructure, which is becoming more efficient. At the same time, initial growing pains like private key management and the lack of mobile-first solutions are also being overcome. We're excited about these developments, which come at an exciting point in time as users of Web2 social platforms are churning at an unprecedented rate, looking for something better...

READ: <u>The Rise of Decentralized Social</u> <u>Networks: Why Web3 Founders are</u> <u>Paying Attention to the Next Wave of</u> <u>Peer-to-Peer Platforms</u> For a few years, we've seen growing discontent with existing social media platforms due to concerns over privacy, censorship, misinformation, and algorithmic control. Users are increasingly aware and concerned, leading to a willingness to explore alternatives and an unprecedented rise in challenger platforms, especially among the younger generation. This creates an opportunity for Web3 social initiatives to capture users' desire to connect and selfexpress in the digital realm. Blockchain technology, which brings trust to transactions, fits exceptionally well as a technology layer. Besides financial markets, the social market is the most transactional industry. These social interactions generate meaningful data and insights. Storing them on the blockchain while returning ownership of data, culture, and interactions marks a natural paradigm shift after a decade and a half of value extraction by a few large platforms.

For us, Web3 social is made up of three key trends that we see happening. Firstly, there is SocialFi, integrating DeFi into social to enable user rewards, asset trading and participation in financial activities through social interactions. Second, there are memecoins inspired by memes and internet culture. They leverage social graphs to build community and drive engagement to value for their token holders in new and unconventional ways. Finally, there are DAOs, a construct popularised during the previous cycle that leverages smart contracts and community voting to unlock cost-efficient and fair governance over organisations. Today, SocialFi, memes and DAOs are often seen as separate trends. We believe they are set to converge and create a new paradigm for digital social interaction and value creation as we transition away from the existing, flawed Web2 era of social.

TRENDS

- Rapidly Evolving Looking at what happened in DeSo over the past year, it's apparent that we are in the early innings, and things are changing quickly.
- Strong backing From Web3 venture capital to traditional industry players like Telefonica, DeSo is gaining much interest from large backers as it tries to capture engagement.

CALL FOR BUILDERS

Memecoins To Kickstart Network Effects

Fundamentally, all Web3 applications are built on network effects, where the platform's value is derived from the users' contributions. Early on, network effects are notoriously difficult to kickstart and require strong financial or social incentives to attract users to platforms with low initial value. We believe that memecoins can be a solid basis to socially incentivise people to join a network before the product is fully built. Traditionally, financial incentives or product quality are the main drivers for attracting users, but memecoins have the unique ability to create

OV.

social gravitas around a platform. This can generate a network effect that precedes product development. This approach turns the traditional model on its head, and we expect to see more of this as memecoins mature and build out community products across social and other Web3 verticals.

Governance Management Tools

We are looking for solutions that improve the existing governance practices of DAOs and other organisations that require social coordination. As organisations mature, governance should become more efficient and effective. While we have seen improvements, these are mainly around short-term decision-making. Like any organisation, DAOs need a clear longterm direction to ensure sustainability and resilience. We expect governance tools to improve across all aspects of organisations, from finance to legal and compliance. Assuming that smart contracts can completely replace the intricate workings of centralised organisations is a pipedream. For large decentralised organisations to thrive in the future, we need better tools that drive clarity in both short and long-term decision-making and enhance governance participation among members.

Cross-Platform Socials

One benefit of owning your social interactions and contributions is the ability to take them anywhere. As a result, we expect a crucial feature of Web3 social to be the portability of social data across different platforms and even into other areas like gaming, finance, education, and professional contexts. Social data will form an on-chain identity layer, enriching users' profiles with each activity recorded on the blockchain. A significant aspect of this will be voluntary privacy, allowing users to obscure parts of their lives to their own liking while still maintaining credibility. This credibility can be validated with privacy-enhancing technologies if necessary. We are looking for projects that are aiming to expand the utility of socials across different Web3 verticals.

APPLY NOW



AIX CRYPTO





RUTH GALVIN Senior Accelerator Lead

"To many, the intersection of AI and Crypto may sound like buzzword bingo, a far-fetched idea. The opposite is true. We find ourselves at the beginning of exploring this exciting new space. The strong, natural fit becomes apparent when looking at the underlying asset they deal with, namely data. Blockchain technology deals with data storage, while AI revolves around data value extraction. Simply by their proximity within the data value chain, there are strong synergies, which we're starting to uncover. "

READ: Al x Crypto

TO MANY, THE INTERSECTION OF AI AND CRYPTO MAY SOUND LIKE BUZZWORD BINGO, A FAR-FETCHED IDEA. THE OPPOSITE IS TRUE.

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natural fit becomes apparent when looking at the underlying asset they deal with, namely data. Blockchain technology deals with data storage, while AI revolves around data value extraction. Simply by their proximity within the data value chain, there are strong synergies, which we're starting to uncover.

TLDR – WHY NOW?

- It's Urgent As blockchain and Al are falling into the hands of millions of users, we feel a strong sense of urgency to solve the technological shortcomings.
- Solving The Web3 UX The functionality of Web3 dApps is maturing, but the UX/UI still needs

improvement. Al-enhanced front ends and Al Agents can change this. There is a vast, untapped opportunity in solving the Web3 usability problem.

 Mindshare - Builder on the intersection of two verticals considering "deep tech" is no easy task. We're finally seeing excitement and talent flowing in from both sides. Al x Crypto is an extremely broad trend with lots of potential as blockchain technology can improve AI and vice versa. To understand the direction of travel and the potential opportunities, it's essential to understand the drivers behind this trend. We believe three core factors drive the convergence of AI and Crypto. First, user expectations are shifting as Web2 integrates advanced AI capabilities, raising the bar for UX/UI and pushing Web3 to innovate to remain competitive. Second, the current state of the internet is plagued with centralised control, biases and other issues. A collaborative effort between AI and blockchain is required to solve this. Lastly, as adoption grows, the technological limitations of both AI and blockchain are becoming evident. Both technologies can solve each other's shortcomings.

We believe there is a sense of urgency to convergence. That's why there's no better time than today to support founders in building their solutions. Blockchain technology, and especially generative AI, are falling into the hands of billions of users. With this diffusion, shortcomings of the technology are becoming more apparent. Blockchain has limitations regarding usability, efficiency, and scaling, while AI raises concerns about data privacy, security, and the governance of these large models. To address these issues, founders are building across a whole spectrum of solutions. Areas like Agentic AI systems, ZK & decentralised machine learning, Al-powered smart-contracts and more are all showing promise albeit at different stages of maturity.

While projects have been working on this intersection for half a decade, this is the first cycle in which we are seeing broad-based excitement from both AI and blockchain about the intersection. This is a multidecade trend that is finally stepping into the limelight. It's a core pillar of the convergence thesis at Outlier, and we believe it's a space worth watching closely.

TRENDS

- Demand for storage There's a strong wave of demand for data storage. As a result, decentralised storage is seeing increased interest from traditional and Web3 players.
- **Regulation** The industry is still waiting for a supranational AGI framework, which creates uncertainty about how the sector can self-regulate through blockchain integration.
- Agents There's apparent excitement and an increasing appreciation for the necessity of agentic systems to navigate complexity and find mass adoption across Web3.

CALL FOR BUILDERS

Smart Content Licencing

Content licensing is crucial for the economy, ensuring creators are rewarded for their intellectual property (IP) and providing the economic incentive needed for innovation. As Gen AI becomes widely adopted, major industry players like the New York Times, Nvidia, and Universal Music are defending their IP. Blockchain is being explored to revolutionise how rights owners publicly announce their licence information. Closing the loop with AI is necessary to foster a future where innovation and creativity are rewarded and respected. By combining AI and crypto, technology can self-regulate and uphold IP rights before regulators intervene and stifle innovation.

Navigating Hyper Financialization

Given the current trajectory, we will soon enter a state of hyper-financialization, where every aspect and asset of our daily lives will be influenced by or tied to financial markets. Trends like real-world asset (RWA) tokenization are driving this forward. Despite the increasing financial literacy among younger generations, this shift will bring more significant complexities. As with many areas of Web3, we believe that the finance sector will be one of the first to adopt AI agents. We also believe that users will need assistance navigating the increasing complexity of having liquid markets, financial opportunities, and yield-generation capabilities around more assets than ever.

AI Agent Market Places

Only some AI agents can be expected to perform every task with high success and accuracy. Skills required for specific actions change over time, and efficiency depends on factors like the user, involved parties, and regulatory regime. Therefore, AI marketplaces are necessary to offer specialised skilled agents. These marketplaces enable the exchange and borrowing of AI agents trained in unique skills, ensuring high expertise. Standardised practices within these marketplaces ensure the integrity and reliability of AI agents, which is crucial for tasks with significant financial implications. This structured environment facilitates access to specialised skills and guarantees that agents operate with high ethical and performance standards, benefiting users with trustworthy and proficient AI services tailored to their needs.

APPLY NOW

SOME OF OUR PORTFOLIO COMPANIES



At Outlier Ventures, we are eager to hear from and work with startups falling under these verticals. Of course, this is not an exhaustive list of companies, themes, and areas that we're interested in.

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