India Web3 Landscape Report 2024

Report by

Knowledge Partners

Foreword

As we release the third edition of India's Web3 Landscape Report by Hashed Emergent, it is evident that India's web3 ecosystem has not only weathered the global storms but has emerged stronger and more resilient. Despite the challenges faced by the broader web3 space, India's unique blend of technological prowess, entrepreneurial spirit, and growing digital adoption continues to propel remarkable progress.

Last year, we highlighted India's leading position in global web3 adoption, signaling a digital renaissance powered by decentralized technologies. This year, that potential is rapidly materializing, showcasing tangible advancements and opportunities within the global web3 landscape led by Indian innovators.

India's advantages are clear: a large and expanding economy, a vast pool of skilled tech talent, and favorable demographics. Beyond these macro factors, several key developments are accelerating India's web3 trajectory. The startup ecosystem has expanded significantly, now encompassing over 1,200 startups and attracting over $3B in funding, driving innovation across finance, infrastructure, and entertainment.

We are witnessing a resurgence in retail participation, evolving investor preferences, and increasing integration of web3 solutions by both enterprises and the government.

Notably, India has cemented its position as a global leader in web3 development, contributing the highest number of new developers to the space in 2024. India retains its top position in global crypto adoption, with blockchain powering critical systems such as land registries, digital certifications, and supply chain management across multiple Indian states.

Private enterprises like Reliance, Bajaj and Tata are integrating blockchain at scale, demonstrating its practical value across diverse use cases. While challenges persist, including the need for clearer regulatory frameworks and greater understanding of the industry by traditional investors and the public at large, the overall outlook is positive. The industry has steadily grown over the past few years with India not just participating in the web3 revolution but also leading it.

We extend our sincere gratitude to our knowledge partners CoinDCX, Pi42, Devfolio, Lysto, and Trilegal for their invaluable contributions and insights in preparing this report.

At Hashed Emergent, we back early-stage founders and provide capital, strategic mentorship, and access to a global network to accelerate growth. We are deeply invested in empowering the next generation of Indian web3 pioneers and accelerating the nation's ascent as a global web3 leader.

Tak Lee

CEO and Managing Partner
Hashed Emergent

Table of Contents

1. Startup and Investment Landscape
2. Consumer and Enterprise Adoption
3. Developer Ecosystem
4. Regulatory, Tax and Policy

Executive Summary

Startup and Investment Landscape

The web3 startup ecosystem continued to expand in 2024, with over 1,200 startups driving innovation across finance, infrastructure, and entertainment. The sector has attracted over $3B in cumulative funding. After a tepid H2 2022 and 2023, investor interest rebounded as Indian founders raised $564M in 2024, growing 109% over 2023. This growth was led by infrastructure and finance though entertainment investments continued to decline. Deal activity was also up on a volume basis up 43% over 2023 though activity remained concentrated at the pre-seed and seed stage.

AI, Real World Assets (RWAs) and staking solutions attracted significant investor interest led by a global increase in AI infrastructure spend by corporates and nations, technological advancements optimising for tokenizing assets cost effectively at scale and anticipated regulatory developments on account of Trump's victory.

Despite increased investment activity, domestic investors remained cautious and deployed in select portfolio assets. However, this funding gap was bridged by ecosystem funds and global web3 funds.

Access to scale capital continues to be a key hurdle for Indian entrepreneurs as is evident from several entrepreneurs looking to crowd sales to secure capital for growth. However, the outlook for investments is bright as several jurisdictions now provide a comprehensive blockchain framework to support entrepreneurs while India is on the path of firming its policy stance in accordance with these global developments.

Consumer and Enterprise Adoption

India's web3 adoption accelerated in 2024, driven by renewed retail participation, evolving investor preferences, and deeper enterprise and government integration. Centralized exchanges saw a resurgence in growth as the increase in asset prices brought several new investors to the cryptocurrency universe.

New products including futures and options have found favour among investors as they mature and look for asymmetric risk reward opportunities. Web3 gaming has been a great medium to onboard users to the on-chain world though most web3 games are only able to retain users with the promise of future rewards and need to invest heavily in player experiences beyond play to earn mechanics to truly compete with traditional games.

India continues to lead the world and outperform developed nations in blockchain adoption securing the top rank for crypto adoption as per Chainalysis for a second consecutive year as measured by several on-chain metrics.

Blockchain products have steadily gained popularity among government and private enterprises with several government departments embracing the technology particularly across supply chain management, education and governance records. Additionally, large Indian conglomerates including Reliance, Bajaj and Tata are utilizing the technology across multiple use cases partnering with emerging web3 startups and leading global blockchains. The next wave of enterprise adoption will be led by integration of stablecoin rails and compliant RWAs that will unlock previously untapped asset markets.

Executive Summary

Developer Ecosystem

India's presence in the global web3 developer landscape continues to strengthen, now accounting for 8% of full-time developers and 12% of total web3 developers worldwide. In 2024 alone, India contributed 17% of all new developers entering the space—the highest of any country.

Our survey findings reveal that a majority of developers in India are early in their web3 journey, with over 50% joining in the past two years. While Ethereum remains the leading choice for developers for building infrastructure and DeFi projects, Solana and Base have gained significant traction due to improved developer and user experiences. Meanwhile, newer ecosystems like Aptos and Avalanche are attracting developers in gaming and RWA sectors respectively.

Hackathons remain a primary entry point for Indian developers, with over 87% of respondents having participated in at least one. These events, along with strong developer communities and mentorship programs, continue to foster collaboration, skill-building, and early exposure to web3.

Appropriate incentive structures are a key hurdle in onboarding experienced developers from the web2 world as tier 1 talent is lured by high remuneration and financial growth prospects offered by big tech and companies building in sectors such as AI. Several blockchains have identified this gap and have started allocating dedicated resources and teams for India.

We foresee several large infrastructure projects enter India to attract developer mindshare in the near future due to its sheer developer base and growth prospects.

Regulatory, Tax and Policy

The regulatory landscape of India's web3 sector has undergone significant evolution. Initially driven by a 'ban crypto' mindset, the approach has shifted to a more nuanced understanding and acceptance of web3, with the overarching objective of regulating the sector in step with international consensus. Regulatory challenges persist, including perceived concerns over virtual digital assets (VDAs) acting as a 'parallel currency', lacking intrinsic value, operating as disintermediated/decentralized software, enabling pseudonymous transactions, its reported use in illicit activities, susceptibility to hacking and its issuers and providers often being offshore.

As a first step, Indian regulators introduced an onerous tax regime for VDAs, followed by the inclusion of virtual asset service providers (VASPs) under anti-money laundering (AML) laws. That said, a lack of guidance and unclear interpretation of extant laws creates ongoing friction. As a consequence, VASPs face a challenging compliance pathway for serving the Indian and international consumer audience. Hence, despite onshore regulatory advancements, many Indian projects, especially decentralized finance (DeFi) protocols, have moved offshore due to regulatory ambiguity and negative attitudes and/or adverse actions from the traditional finance system (TradFi), including banks, payments providers and its regulators.

Looking ahead, India will likely adopt a two-pronged approach to web3 regulation: (i) addressing domestic regulatory challenges by (hopefully) shifting from a restrictive to an enabling regulatory approach that fosters onshore innovation, and (ii) harmonizing its regulatory approach with international consensus driven by the G20, Financial Action Task Force (FATF), and the Financial Stability Board (FSB).

Startup and Investment Landscape

By

#HASHED EMERGENT

1: Startup and Investment Landscape

Table of Contents

1.1	Startup Landscape
1.2	Fundraising
1.3	Sector Overview: Finance
1.4	Sector Overview: Entertainment
1.5	Sector Overview: Infrastructure
1.6	Key Highlights and Trends
1.7	Investor Landscape

1.1 Startup Landscape

India stands at the forefront of the global web3 ecosystem with a network of over 1,200 startups spanning diverse sectors. Collectively, these Indian web3 startups have secured funding exceeding $3B, reflecting the country's robust growth and investment potential.

FINANCE

DEX
kuru, kanalabs, tanX, TEGRO, Velar, kriya

CEX
CoinDCX, giottus, coinswitch, Delta. Exchange, zebpay, Pi42, UNOCOIN, density

Staking
nexus, Kelp, RENZO, PERSISTENCE, StakeEase

Payments
Transak, ZEEBU, ONMETA, Alpyne, ONRAMP.money, PARTIOR, Credible, P2P.me

Tokenization
alt.DRX, BRÜ, Qiro, NAKAD, ZOTH, COMDEX, POLYTRADE, RODEA

Asset Management
InstaDApp, rabble., Mudrex, YieldFi

Taxation and Others
KoinX, TAXnodes, sharpe.ai

Derivative
LOGX, Syndr, OVERLAY, EX ETHOSX, avantis, PARADEX, getrabbit

Institutions
FALCONX, BrownRice Capital, PARADIGM, FUZE, alts

INFRASTRUCTURE

AI
mira, Sentient, Open Ledger, Bagel, RITUAL, elsa, PLAYAI, Heurist

DePIN
NodeOps, HUDDLE 01, WitnessChain, Dabba, proto, DeCharge, pyte

Custody and Wallets
THEYA, Obvious, FRONTIER, MetaKeep, Liminal, Leap, CYPHERock, PROPINE

Middleware
EigLayer, Spheron, Biconomy, ROME, airstack, Reclaim, arcana, AXIOM

L1/L2
polygon, 5ire, Self Chain, okto

BaaS
Catalysis, TRUEZK, Vistara, zeeve

Data and Tooling
PYOR, COVALENT, avail, unmarshal, bitsCrunch, Hyperline, zbyte

Security
CRED SHIELDS, SILENCE LABORATORIES, QuillAudits, Defy

Interoperability
Push, SOCKET, router

ENTERTAINMENT

Studio
MAYHEM STUDIOS, MonStudios, Bullieverse, RAGE, Rush, CLASH, xtremeverse, SUPER GAMING, COINFANTASY, TEVAERA

Prediction Markets
TradeX, TradingLeagues, probo., griffy

Collectible
FanCraze, GUARDIANLINK, COLEXION, \z/

Gaming Community
LYSTO, XGEN, STAN, !glip, TURF, HULT GAMES, FLOC

Metaverse
Shemaroo Verse, VYUG Metaverse, BHARATBOX, PARTYNITE

Social
Chingari, 0xPPL, FLOC, Rizztech

Music, IP and Art
FANTV, atrium, Artfi, Rush

Fitness
GROWFITTER, fitmint, GOQii

Advertisement
Intract, PERSONA

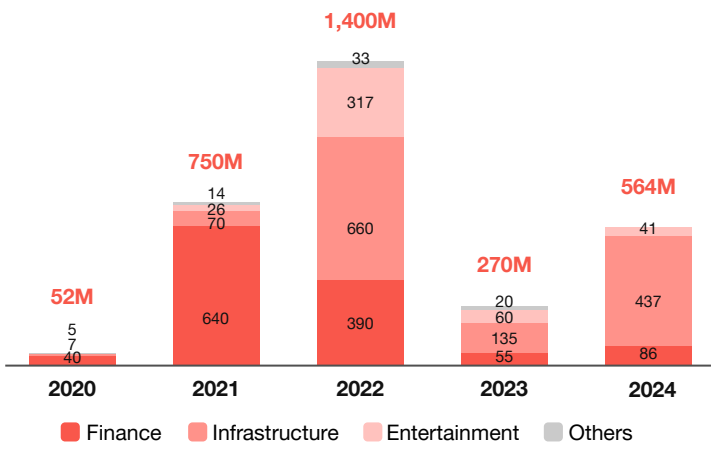
Note: Indian startups include startups led by founders who have held an Indian passport.

Data source: Hashed EM

1.2 Fundraising

Indian startups raised $564M in 2024 as investment activity rebounded from 2023 on both value and deal count basis.

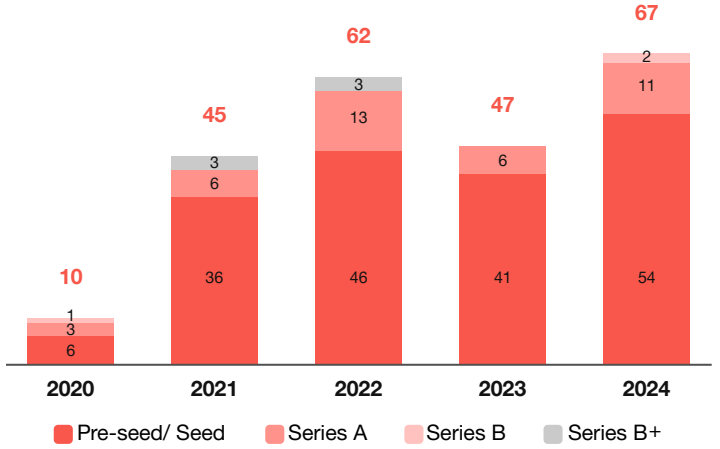
Sector Allocation



2024 saw funding by Indian web3 founders double to $564M up 109% from $270M in 2023.

Infrastructure was the most popular sector followed by finance although investments in entertainment declined.

Stage Allocation



Deal volume picked up 43% over 2023, and this surge was led by accelerators, L1/L2 ecosystems and global web3 funds.

While deal activity has picked up there is a lack of scale capital with no mega rounds ($100M+) raised since 2022.

Note: Indian startups include startups led by founders who have held an Indian passport.

Data source: Tracxn, Hashed EM

1.3 Sector Overview: Infrastructure

The web3 infrastructure sector garnered $437M in 2024, accounting for lion's share of the overall funding. Investment activity shifted from L1s/L2s towards projects building middleware infrastructure, AI and scaling solutions.

Industry Landscape

AI
mira, Sentient, Open Ledger, elsa, GPU.NET, Bagel, Heurist, auradine, PLAYAI, Fraction AI, CLUSTER PROTOCOL, BlockMesh, RITUAL, nani

Custody & Wallets
THEYA, Santa, Obvious, MetaKeep, Leap, piena, CYPHEROCK, FRONTIER, Liminal, PROPINE

Interoperability
SOCKET, Push, router

DePIN
NodeOps, HUDDLE 01, WitnessChain, Dabba, proto, DeCharge, pyse

Security
Defy, CRED SHIELDS, SILENCE, QuillAudits

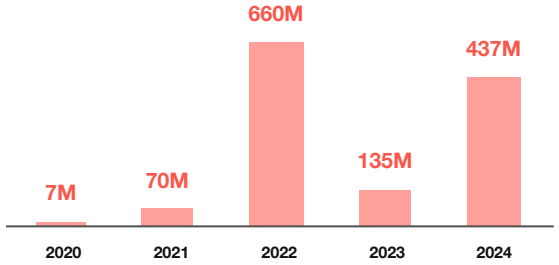
BaaS
Catalysis, Vistara, TRUE2K, zeeve

Middleware
EigenLayer, Spheron, Biconomy, ROME, airstack, Reclaim, AXIOM, arcana, SURGE, Electron

L1/L2
5ire, LYNC, HAVEN1, BINARY, okto, polygon, Shardeum, Self Chain

Data & Tooling
PYOR, avail, unmarshal, zbyte, COVALENT, Hyperline, bitsCrunch

Investment Activity



The infrastructure sector raised $437M in 2024, a 224% increase from $135M in 2023. While Layer-1 and Layer-2 solutions dominated past funding cycles, this year saw AI-driven infrastructure, middleware, and data tooling emerge as key focus areas.

This sector saw Indian founders who have settled abroad raise funding for global category defining companies such as Eigen Layer, Sentient and Avail. Additionally, other emerging areas such as DePIN and BaaS also raised funding as investors increasingly view a decentralized future for several industries particularly in the age of AI where costs of coordination are likely to compress.

Note: Indian startups include startups led by founders who have held an Indian passport.

Data source: Tracxn, Hashed EM

1.4 Sector Overview: Finance

In 2024, Indian founders delved into new DeFi applications, including staking, liquid staking and restaking products across ecosystems as well as perpetual DEXs, RWA and tokenization platforms.

Industry Landscape

DEX
kuru, kanalabs, tanX, TEGRO, Velar, kriya, Portal, PANORA

Staking
nexus, Kelp, RENZO, PERSISTENCE, StakeEase

Payments
Transak, ZEEBU, ONMETA, GOSATS, Credible, P2P.me, ONRAMP .money, PARTIOR, BIMA, Alpyne, TYLT

CEX
CoinDCX, giottus, coinswitch, Delta Exchange, zebpay, Pi42, UNOCOIN, density

Institutions
FALCONX, BrownRice Capital, PARADIGM, FUZE, alts

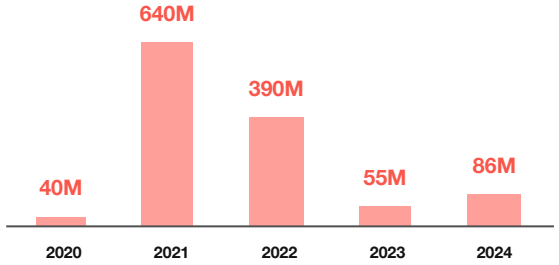
Asset Management
rabble., InstaDApp, horizon, Joule Finance, Mudrex, YieldFi

Tokenization
alt.DRX, BRÚ, Qiro, NAKAD, ZOTH, Newrl, COMDEX, SPYDRA, POLYTRADE, ROOBA FINANCE

Taxation and Others
KoinX, TAXnodes, sharpe.ai

Derivative
LOGX, Syndr, OVERLAY, getrabbit, PARADEX, ETHOSX, avantis

Investment Activity



Funding in the finance sector saw strong growth in 2024, increasing to $86M from $55M in 2023, though still far below the highs of $398M in 2022 and $640M in 2021. This growth signals a gradual recovery, with investors focusing on emerging areas of decentralized finance.

The year saw a push toward liquid restaking, real-world asset tokenization, and multi-chain financial tools, with projects like Renzo, KelpDAO, and Spydra driving the shift. Indian founders are developing protocols to enhance staking, tokenize assets like loans and commodities, and improve liquidity access for DeFi, moving toward more structured financial solutions.

Note: Indian startups include startups led by founders who have held an Indian passport.

Data source: Tracxn, Hashed EM

1.5 Sector Overview: Entertainment

The web3 entertainment sector saw investment activity drop to its lowest levels since 2022 as investors await traction on previously well funded themes such as collectibles and gaming studios while focusing on specific pockets such as gaming communities and prediction markets.

Industry Landscape

Gaming Studio

Mayhem Studios, Bullieverse, Super Gaming, MonStudios, xtremeverse, Rage Effect, Rush Gaming Universe, CLASH, COINFANTASY, TEVAERA

Prediction Markets

TradeX, Kryzel, probo., TradingLeagues, griffy

Collectible

FanCraze, GUARDIANLINK, COLEXION, Zo World Follow Your Heart, JUMP.trade

Gaming Community

LYSTO, KGeN, HULT GAMES, STAN, !glip, FLOC, TURF

Social

Chingari, 0xPPL, App World Beta, FLOC, Rizztech, Rise in

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Intract, PERSONA

Music, IP and Art

FANTV, atrium, Artfi, Rush!, BOWLED.io

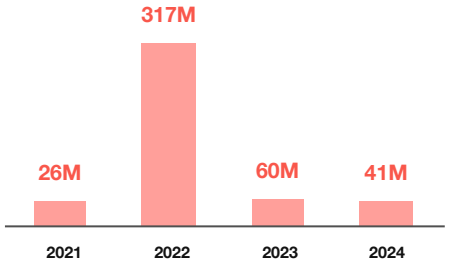
Fitness

GROWFITTER, fitmint, GOQii

Metaverse

Shemaroo Verse, VYUG Metaverse, BHARATBOX, PLAYMADE

Investment Activity



The entertainment sector continued its declined in 2024, dropping to $41M from $60M in 2023 and $317M in 2022. While previous years saw strong investments in digital collectibles and gaming studios, 2024 funding was concentrated in gaming infrastructure, and prediction markets. Esports platforms and AI-driven gaming solutions also gained traction, reflecting a shift towards monetizable gaming experiences.

Despite the decline, investor interest remained in select high-growth areas. KGeN raised $10M for their game reputation engine, Stan secured $5M for esports, and Probo attracted $7M highlighting continued momentum in prediction markets.

Note: Indian startups include startups led by founders who have held an Indian passport.

Data source: Tracxn, Hashed EM

1.6 Key Highlights and Trends

India is a global hub for founders and developers driving innovation across multiple web3 domains.

Startup Ecosystem in India

2nd Largest Developer Market
- 12% of crypto developer base.

3rd Largest Founder Base
- 5% of global web3 founder base.

Prominent Projects by Indian Founders

polygon	Sentient	avail
Biconomy	Transak	EigenLayer
CoinDCX	coinswitch	FALCONX

Trending Sectors

Infrastructure		
Scaling Solutions	AI	DePIN

Finance		
DEXs	RWAs	Staking Restaking

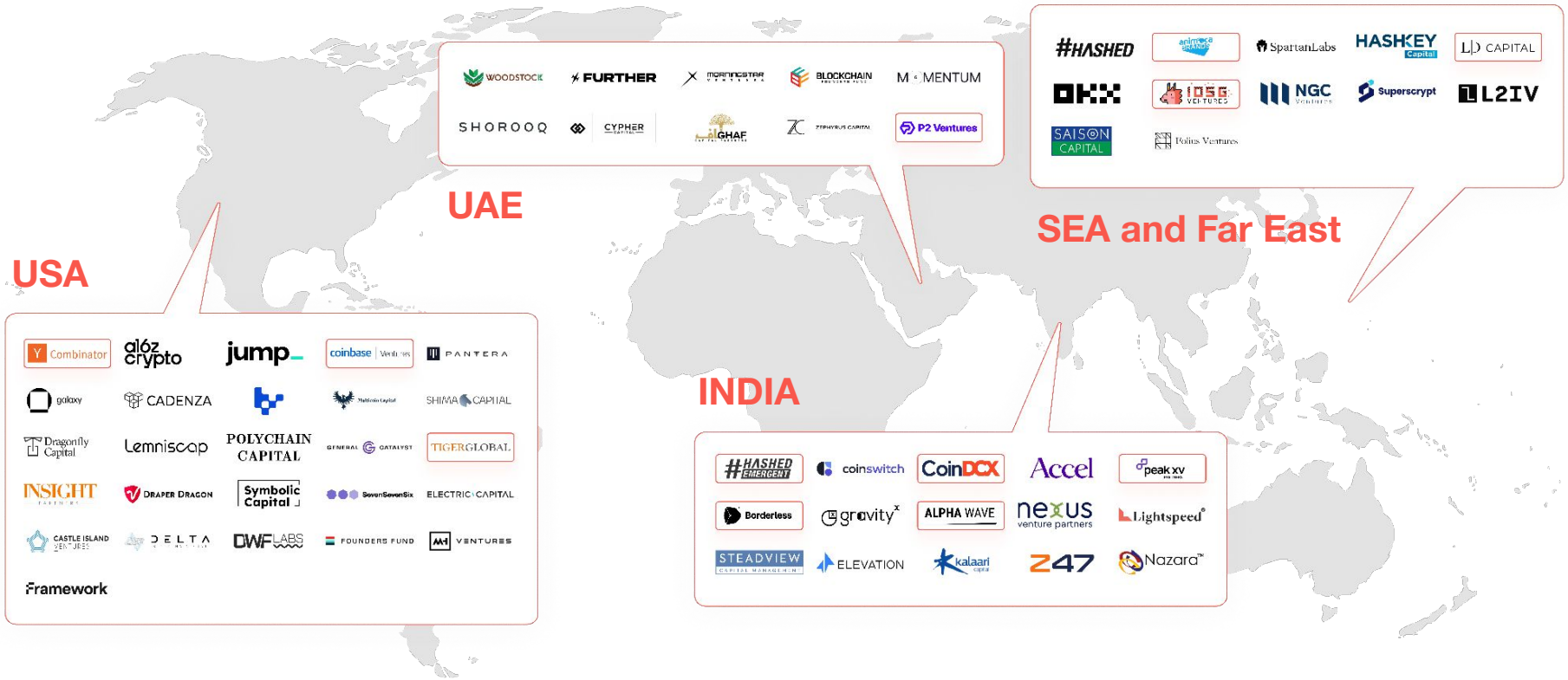
Entertainment		
Prediction Markets	Gaming Guilds	Gaming Studios

Note: Indian startups include startups led by founders who have held an Indian passport.

Data source: Hashed EM

1.7 Investor Landscape

Global funds have been actively investing in Indian founders, complemented by investments from India-based funds.



Note: Highlighted investors are the most active investors from those regions over the past four years.

Data source: Pitchbook, Hashed EM

1.7 Investor Landscape

Funds that are actively investing in India represent a good mix of local funds, ecosystem funds, and corporate venture arms of leading exchanges.

Name	#HASHED EMERGENT	polygon	Borderless	coinbase | Ventures	1059 VENTURES	CoinDCX
Location	INDIA	UAE	INDIA	USA	HONG KONG	INDIA
Focus Stage	Pre-seed to Series A	Pre-seed to Series A	Seed to Series C	Seed to Series C	Seed to Series A	Stage Agnostic
Web3 Activity Since	2021	2021	2018	2018	2017	2021
Web3 Portfolio Size in India	20+	12+	12+	12+	10+	15+
Select Web3 Portfolio	Leap, LOGX, reclaim, XTREMEVERSE	bitsCrunch, KGEN, Cypher, TEGRO	Open Ledger, Dabba, Biconomy, Fraction AI	polygon, CoinDCX, FALCONX, coinswitch	Transak, LOGX, polygon, EigenLayer	Stader, Push, router

Note: Location refers to the base of the team responsible for India related opportunities, India portfolio includes Note: Indian startups include startups led by founders who have held an Indian passport.

Data source: Pitchbook, Hashed EM

Consumer and Enterprise Adoption

By

2: Consumer and Enterprise Adoption

Table of Contents

2.1	Consumer Adoption: Centralized Exchanges
2.2	Consumer Adoption: Crypto Futures
2.3	Consumer Adoption: On-chain Metrics
2.4	Consumer Adoption: Web3 Gaming
2.5	Enterprise Adoption: Government and Public Enterprise Adoption
2.6	Enterprise Adoption: Private Enterprise Adoption

2.1 Consumer Adoption: Centralized Exchanges

2024 saw a resurgence in crypto investing across centralized exchanges led by new centers of growth and emerging categories.

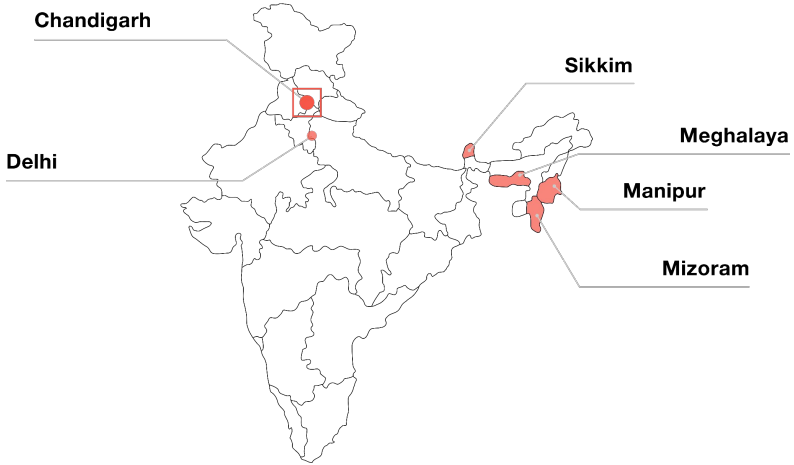
Portfolios focused on bluechips, with interest in emerging assets

45% of retail portfolios comprise blue-chip cryptocurrencies, making them the cornerstone of most investment strategies.

5x increase in growth across meme coin trading volumes relative to other crypto asset categories showcasing evolving retail preferences.

27-40 age group dominates token investments, leading adoption across all demographics owing to higher income and awareness.

Northeast emerges as the leader in per capita crypto adoption



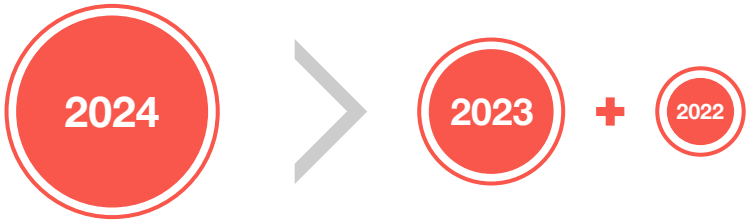
Chandigarh and Delhi lead in crypto adoption among cities, while the Northeast has excelled regionally albeit on a lower base.

Data source: CoinDCX

2.1 Consumer Adoption: Centralized Exchanges

Crypto adoption surged in 2024 driven by Gen Z and Millennials though mature investors dominated trading volumes.

2024 witnessed massive growth in the new crypto investor base



Growth in 2024 outpaced the combined growth of 2022 and 2023.

Most of the cryptocurrency adoption came from young investors indicating awareness and appreciation of the asset class which also coincided with the increase in market prices and corresponding returns of cryptocurrency investors.

Mature investors boost engagement while Gen Z drives user growth

3x higher per-user investment value is demonstrated by investors in their 40s compared to other age segments.

35% of crypto investor base is Gen Z, making it a critical demographic group for adoption of cryptocurrencies.

Higher risk tolerance exhibited by investors aged 40-45 via large trades, while Gen Z focuses on short term gains via exposure to memecoins.

Data source: CoinDCX

2.2 Consumer Adoption: Crypto Futures

India's cryptocurrency market is evolving rapidly, with a more sophisticated investor base increasingly participating in futures trading.

Millennials dominate futures market with expertise and risk appetite

66% of traders are below the age of 35 with the largest portion (~37%) belonging to the age group of 26-35.

59% of traders use stop-loss, indicating a more strategic and risk-conscious trader base.

1 in 10 futures' traders are females indicating significant headroom for growth for participation by women.

Traders prefer small, frequent trades albeit with medium leverage

96% of traders maintain positions <$12, indicating a low ticket, retail-driven market as larger investors still building comfort around cryptocurrencies.

11x-20x leverage is preferred by most traders demonstrating moderate exposure and calculated risk-taking.

45% trade on a daily basis, reflecting high market engagement and active participation.

Data source: Pi42

2.3 Consumer Adoption: On-chain Metrics

India retains top position leading crypto adoption among 150+ countries over the past several years.

India leads global adoption consistently ranking above developed nations

Ranking by crypto adoption	2021	2022	2023	2024
INDIA	2	4	1	1
USA	8	5	4	4
UK	-	17	14	12
CHINA	1	1	3	5
NIGERIA	6	4	2	2

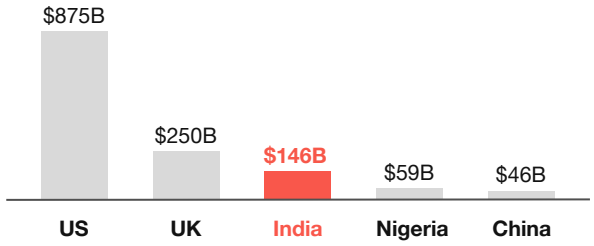
India ranks top 3 in 4 of 5 parameters measuring global crypto adoption

#1 Centralized service value received.
Retail centralized service value received.

#2 DeFi value received.

#3 Retail DeFi value received.

Cryptocurrency value received in 2024

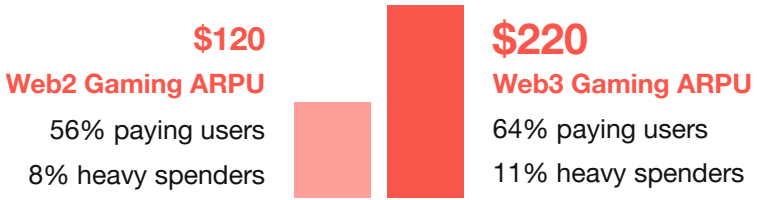


Data source: Chainalysis Geography of Cryptocurrency Report 2021, 2022, 2023, 2024

2.4 Consumer Adoption: Web3 Gaming

India's gaming industry will reach $9.2B over the next five years with web3 gaming emerging as a key contributor driven by higher ARPUs.

Web3 gamers' spending power makes them a key audience for web2 and web3 games



Web3 gamers' annual spend is double that of web2 gamers with significantly higher proportion of gamers (38%) spending over $500 annually.

Web3 games have Gen Z as a significant user base with strong engagement post onboarding

50% of gamers are less than 25 years old indicating strong participation by Gen Z players.

38% of web2 gamers have experienced web3 games, revealing significant crossover from traditional gaming as a natural user pool.

60% of gamers who have tried web3 games continue to engage with them though retention hinges on expectation of rewards vs quality of gameplay.

Note: Heavy spenders have an annual spend of $240+, ARPU based on survey conducted by Lysto.

Data source: Lysto

2.5 Enterprise Adoption: Government and Public Enterprise Adoption

India's blockchain adoption has been steadily rising over the years anchored by government participation or public-private partnerships.

Government participation led by an organized National Blockchain Framework

NATIONAL BLOCKCHAIN FRAMEWORK

Vishvasya Stack

- Praamaanik
- NBFLite

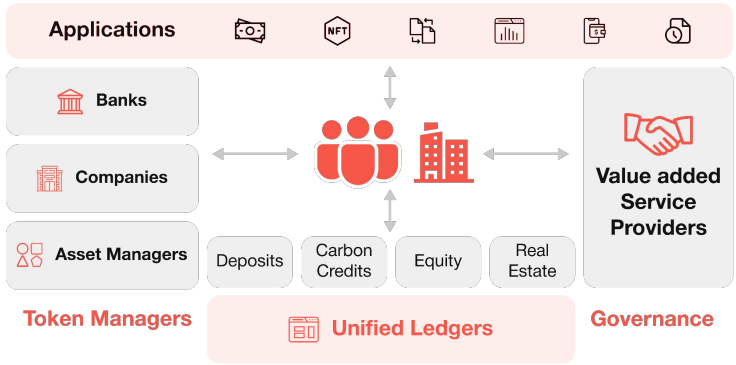
CBDC Trial

- 5M users
- 16 participation banks

The National Blockchain Framework aims to enhance security, transparency, and trust in citizen-centric applications with key components being Vishvasya Blockchain Technology Stack (Blockchain as a Service), NBFLite (sandbox platform designed for startups and academia to facilitate rapid prototyping and research), Praamaanik (verifying authenticity of mobile applications) and National Blockchain Portal. Additionally, the RBI led CBDC trial touched 5M users with 16 participating banks to explore blockchain based payment solutions.

Strong public-private adoption envisaged through interoperable solutions

Finternet



Finternet aims to expand financial inclusion by increasing transparency and efficiency through a blockchain-powered financial ecosystem designed to integrate banks, enterprises, and asset managers through unified ledgers. It enhances liquidity in financial markets by tokenizing multiple assets while unlocking functionalities through its governance-driven architecture that ensures regulatory compliance and seamless interactions between traditional finance and blockchain-based services.

Data source: TechCrunch, Cointelegraph, National Blockchain Strategy, MEITY, Business Standard, YourStory

2.5 Enterprise Adoption: Government and Public Enterprise Adoption

Central and state governments, local government bodies and other publicly funded entities are embracing blockchain across multiple use cases.

Several departments have utilized blockchain solutions at scale

Use Cases	Product	# of Records
Education	Certificate Chain	35M
Governance	Document Chain	32M
Real Estate	Property Chain	20M
Logistic	Drug Chain	3M
Judiciary	Judiciary Chain	198

Secular participation across state governments, central agencies and union territories

- उपभोक्ता मामले विभाग DEPARTMENT OF CONSUMER AFFAIRS
- न्याय विभाग DEPARTMENT OF JUSTICE
- Central Board of Secondary Education (CBSE)
- Government of Andhra Pradesh
- Government of Chhattisgarh
- Government of the National Capital Territory of Delhi
- Government of Karnataka
- Government of Maharashtra
- Government of Manipur
- Government of Puducherry

Data source: blockchain.gov.in, Hashed EM

2.6 Enterprise Adoption: Private Enterprise Adoption

Private enterprises are employing blockchain solutions to enhance business processes and to reimagine interactions with their target users.

Private organizations have partnered with leading blockchains to implement innovative solutions

Jio x polygon	Reliance Jio and Polygon Labs are bringing web3 to **450M** users, enhancing loyalty programs, digital transactions, and data management.
Mother Dairy x Spydra	Mother Dairy integrates Spydra's blockchain for real-time supply chain tracking, improving traceability and consumer trust of their high end products that require proving provenance.
Fire Drops x polygon	Flipkart's FireDrops integrates **3.6M+** blockchain wallets for gamified shopping and NFT-based loyalty rewards.
Nazara x Lysto	Nazara and Lysto launched Growth Protocol, a Layer-1 blockchain leveraging Avalanche's technology to create a decentralized marketing platform for games and gamers discovery.
KGEN x Aptos	KGEN partners with Aptos to enable proof of gamer reputation engine and a decentralised ad network with **10M+** users
RGV DEN Music x reclaim	RGV DEN Music leverages Reclaim for verifiable data ownership and Story Protocol for IP rights management.
FANTV x Sui	FanTV is leveraging Sui Blockchain's high throughput infrastructure to onboarding **1M+** new users while enhancing scalability and user engagement.
Jetking Technologies x bitcoin	Jetking became India's first listed company to hold Bitcoin as part of its treasury paving the way for Indian corporates to hold Bitcoin on their balance sheet like several global companies and countries.

Data source: Hashed EM, Polygon, CNN, Indianexpress

Developer Ecosystem

By

3: Developer Ecosystem

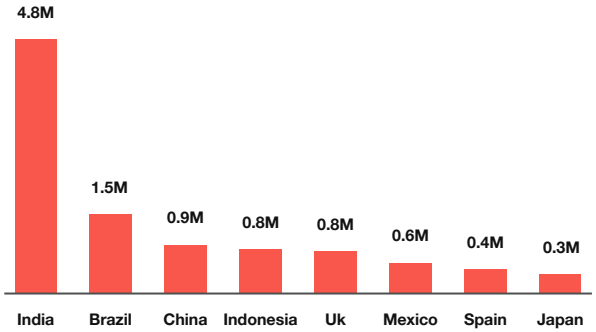
Table of Contents

3.1	Developer Growth
3.2	Developer Demographics
3.3	Developer Contributions and Salary Expectations
3.4	Sector and Ecosystem Trends
3.5	Ecosystem Activity
3.6	Builder Initiatives and Community Support

3.1 Developer Growth

India's developer ecosystem continues its remarkable growth trajectory, solidifying its position as a global tech powerhouse.

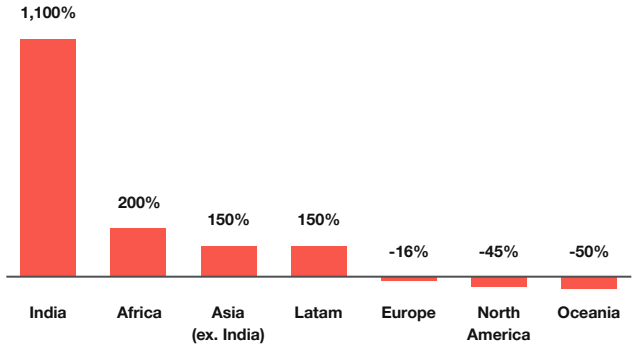
Number of Open Source Developers



India saw a YoY growth of 28% adding more than 4.5M developers to Github in 2024, making it the fastest growing developer community in the world. India is now expected to leapfrog the US and have the largest developer community by 2028.

Government initiatives like the Smart India Hackathon have played a crucial role in nurturing talent and fostering innovation, contributing to the surge in developers by providing opportunities to solve real-world challenges.

Growth in Share of web3 developers since 2015



India's share of global web3 developers has also seen significant growth in the past decade, increasing from 5% to 12% making India the second largest blockchain developer hub in the world.

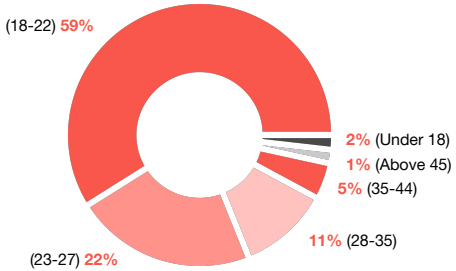
In 2024, the country led the way in onboarding new talent, contributing 17% of all developers entering the web3 space—more than any other nation. India now accounts for 8% of the world's full-time web3 developers.

Data source: Electric Capital Report, Github Report, Hashed EM

3.2 Developer Demographics

Our survey of 500+ developers highlights India's flourishing web3 ecosystem, driven by a dynamic mix of young talent, entrepreneurial energy, and growing global exposure, with ecosystems supporting growth through university partnerships and flexible work models.

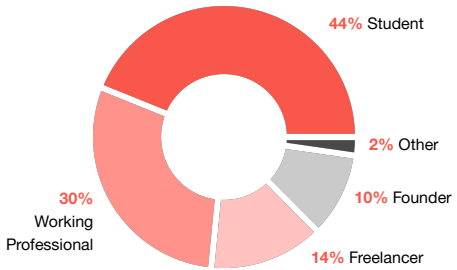
Age



There is a strong presence of young developers in India, with 59% between 18-22 and an additional 22% in their mid 20s. This demographic represents a growing and vibrant talent pool that is eager to explore emerging technologies and contribute to the evolving web3 space.

To tap into this talent, ecosystems have started forming partnerships with universities. These initiatives introduce students to web3 technology early, providing hands-on learning and opportunities to build within the ecosystem.

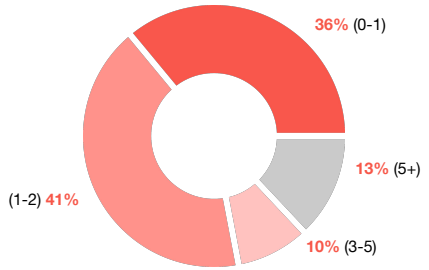
Profession



While most respondents are students, more than 10% are founders, showcasing the vibrant entrepreneurial spirit within the Indian developer community and their drive to innovate in the web3 space.

In addition, 35% of respondents are open to working in a part-time capacity, with 55% having accepted crypto as a mode of payment at least once, showcasing a willingness to embrace flexible and remote work opportunities in the web3 world.

Experience (in years)



Significant number of developers are in the early stages of their careers. However, nearly a quarter of the respondents have over three years of experience in both professional and web3 domains, showcasing a mix of emerging talent and seasoned contributors.

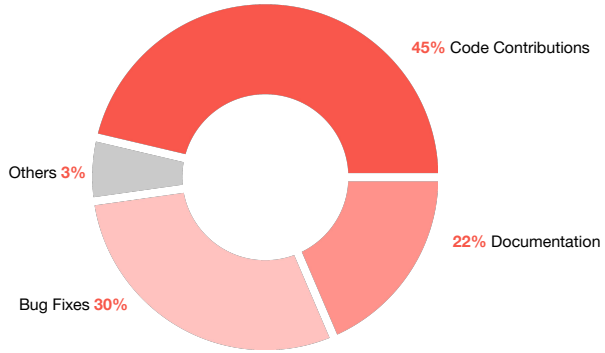
A notable trend is the increasing global exposure of Indian developers. An impressive 69% of respondents indicated that they worked with international teams, reflecting India's growing prominence in the global web3 ecosystem.

Data source: Hashed EM

3.3 Developer Contributions and Salary Expectations

Indian developers are emerging as key contributors to the global web3 ecosystem, yet a gap in competitive compensation highlights the need for better alignment with their growing expertise and impact.

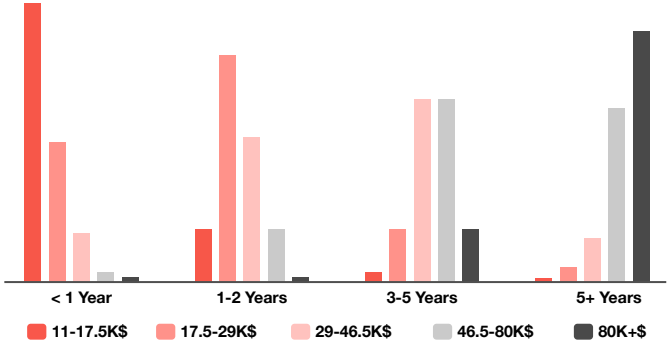
Developer Contributions



Indian web3 developers are making notable contributions to the global ecosystem, with 45% engaged in code contributions, 30% in bug fixes, and 22% in documentation efforts.

These figures reflect the active involvement of Indian developers across critical areas of project development, showcasing their technical expertise and commitment to advancing the web3 space. This data suggests that Indian developers are not only participating in projects but are also playing a pivotal role in strengthening the ecosystem's foundation.

Annual Salary Expectations



As a growing number of developers get international exposure, 51% of the developers still say that the salaries are not in line with global standards.

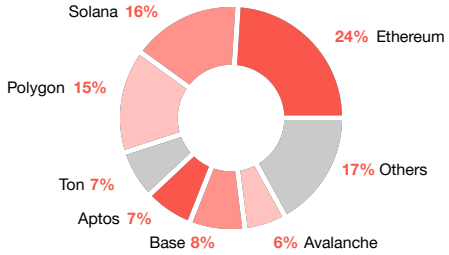
The findings suggest that while Indian developers are increasingly participating in global projects and contributing to the web3 space, ecosystems and employers may need to reevaluate compensation structures to match the skillsets and expertise these developers bring to the table. Additionally, bridging this gap is imperative to onboard developers from web2 in India who are already well paid in order to further position India as a hub for good quality web3 talent.

Data source: Hashed EM

3.4 Sector and Ecosystem Trends

Solana has become the go-to blockchain for developers working in DeFi, Payments, AI, and SocialFi, reflecting its versatility and strong developer support. Meanwhile, emerging ecosystems like Ton, Aptos, and Base are steadily gaining momentum across other key sectors.

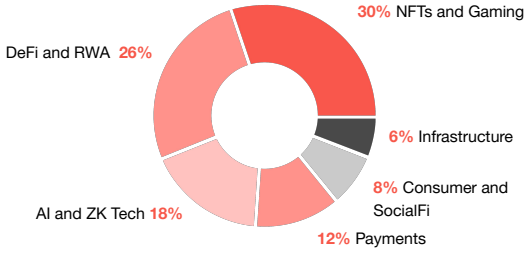
Chain of Choice



Our survey reveals that Ethereum continues to be a popular choice among developers, accounting for 24% of preferences, though this marks a decline from 33% last year.

The shift has largely been driven by Solana and Base, which have gained significant traction thanks to their higher throughput and improved experience. Emerging ecosystems like Aptos and Avalanche have also captured attention in the last year, further diversifying developer activity.

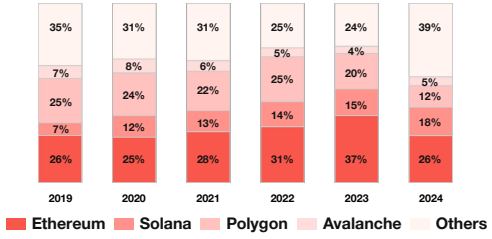
Sector



Gaming and NFTs continue to dominate as the most popular sectors among developers, with 30% expressing interest, closely followed by DeFi and RWAs at 26%. With the growing influence of AI, its intersection with crypto has also sparked significant activity in this emerging sector.

Solana has solidified its position as the preferred ecosystem for payment-focused solutions, while other networks like Aptos and Avalanche continue to attract developers building in the gaming and RWA domain respectively.

Market Share of Ecosystems



Ethereum remains a dominant choice in terms of developer adoption, despite its share dropping from 37% in 2023 to 26% in 2024. This shift highlights the growing appeal of emerging ecosystems, which offer more cost-effective development and deployment options.

The "Others" category has grown from 24% in 2023 to 39% in 2024. This can be attributed to the rise of ecosystems like Base and Aptos, which have captured developer interest while Solana has continued its steady growth trajectory, climbing from 12% in 2020 to 18% in 2024.

Data source: Hashed EM

3.5 Ecosystem Activity

#HASHED EMERGENT

The Indian developer market is witnessing a surge in activity, driven by the expanding presence of L1/L2 ecosystems. These ecosystems are empowering developers to build solutions with a long-term vision providing significant financial and technical resources to scale their ideas.

Ecosystem Presence in India

avalanche, APTOS, polygon, SUPRA, STARKNET, ethereum, Sui, NIBIRU, SOLANA, TON, XDC, Polkadot

Grants have emerged as a powerful strategy for ecosystems to attract and retain developers. Increasingly these ecosystems are launching bootcamps and milestone based grants to onboard new talent and foster long-term engagement within their communities led by Avalanche, Aptos, Polygon, Base, and Solana who have large India dedicated teams and budgets.

Avalanche, for instance, has hosted bootcamps in colleges to introduce blockchain to young minds, while Base's "Base Builds" program disburses 2 ETH weekly to builders, content creators, community leaders, or artists — supporting diverse contributions to bringing the world on-chain.

Grants Distribution

Ecosystem	Avalanche	Aptos	Polygon	Base	Solana
Amount Deployed in 2024	$3M	$1.5M	$1M+	$210K	$235K
Typical Cheque Size	$250K	$50K	$50-200K	$5-7K	$1.6K
Turnaround Time	~28 days	~21 days	~15 days	~7 days	~4 days
Total Projects	10+	40	8	30	142
Prominent Projects	GROWFITTER, Quboid	KGEN	Cypher, TruScholar	12R (Twelve Rounds), bitsCrunch	BlockMesh

3.6 Builder Initiatives and Community Support

Hackathons and developer communities have become integral to the growth of India's web3 ecosystem, providing builders with hands-on experience, mentorship, funding opportunities and global exposure. As participation rises, these platforms are shaping the next generation of developers.

Major Hackathons and Events

Hackathons are a key starting point for Indian developers, with 87% of survey respondents having participated in at least one. Notably, 23% of them have joined more than five hackathons, and 48% have attended three to five.

The main motivation for this high participation is the opportunity to connect with other developers, secure bounties, discover new ideas, and build a strong reputation. While Solidity remains the dominant programming language, developers are increasingly working with Rust, Move, and Cairo - an opportunity ecosystems are leveraging by hosting hackathons to onboard more builders.

Web3 Communities

This year, 70% of survey respondents reported being part of a web3 developer community, up from 50% last year. This underscores the increasing role of these communities in driving collaboration and knowledge-sharing.

Mentorship is also on the rise, with over 60% of developers having received guidance from senior peers and 66% frequently collaborating with fellow builders. Communities and hackathons play a crucial role in developer growth, providing hands-on experience, direct engagement with global teams, and opportunities to secure funding through VC connections and ecosystem grants.

Regulatory, Tax and Policy

By

4: Regulatory, Tax and Policy

Table of Contents

4.1	Challenges and Opportunities
4.2	Key Regulators and Government Stakeholders
4.3	Regulatory Frameworks
4.4	Structuring and Enforcement Trends
4.5	Taxes
4.6	Policy Factors and Wishlist

Disclaimer: The contents of this report are intended for informational purposes only and are not legal advice. The law relating to virtual digital assets is ambiguous and in flux in India. Readers are encouraged to seek appropriate counsel while planning their affairs.

4.1 Challenges and Opportunities

India is at a pivotal moment, despite headwinds. By adopting a disruptive web3 regulatory, tax and policy framework along with positive political framing and ease of doing business, it can catalyze population-scale on-chain innovation and onshore value-creation.

Perceived Macroeconomic Risks

- Cross-border VDA flows may impact India's capital controls.
- Fear of blockchains and VDAs facilitating 'parallel currencies'.
- VDAs may disrupt financial stability, monetary policy and TradFi.

Illicit Activities and Speculative Perception

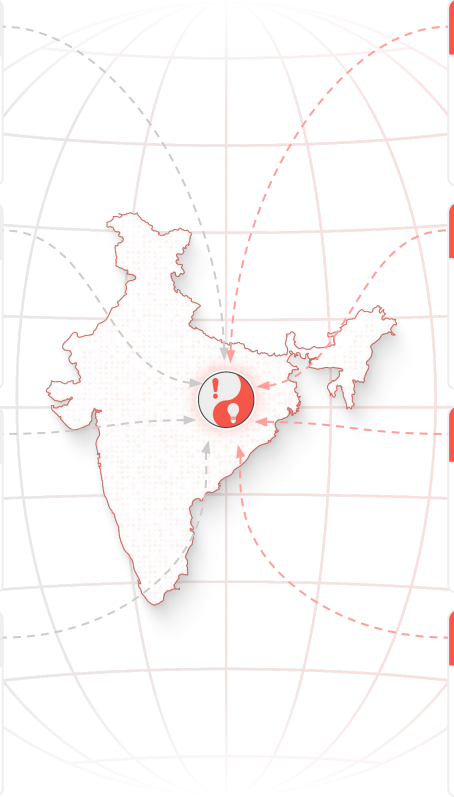
- VDA activities present potentially significant AML/CFT risks.
- VDAs are treated as purely speculative and lacking intrinsic value.
- A notion of limited 'real-world use-cases' hinders regulator trust.

Offshoring and Brain Drain

- Unconstitutional debanking of web3 users and businesses.
- Regulatory ambiguity coupled with 'regulation by enforcement'.
- High legal and operational risks push businesses offshore.

Yes Blockchain, No Crypto

- Private blockchains limit decentralization in public sector projects.
- CBDCs and VDAs are positioned as competing alternatives.
- Approach hampers blockchain innovation and VDA adoption.



Intelligent Web3 Integration

- Power compliant cross-border transactions with web3.
- Evolve forex rules to align with growth of the Internet economy.
- Supercharge TradFi with measured blockchain and VDA adoption.

Leverage Blockchain and VDA Properties

- Track illicit activities leveraging blockchain's open database.
- VDAs are 'programmable value' and act as web3's incentive layer.
- Blockchains and VDAs in synergy create resilient web3 systems.

Industry-Enabling Access and Regulation

- Enable ease of banking and fintech for VASPs, with UPI access.
- Enact laws with protective safe harbor for devs, VASPs, and DeFi.
- Attract global liquidity and position India as a global web3 hub.

Parity for Private Sector Innovation

- Integrate public blockchains and VDAs for public sector projects.
- Access to sandbox and accelerators to fuel web3 growth.
- Foster a climate of innovation and compliance for the sector.

4.1 Challenges and Opportunities

India is at a pivotal moment, despite headwinds. By adopting a disruptive web3 regulatory, tax and policy framework along with positive political framing and ease of doing business, it can catalyze population-scale on-chain innovation and onshore value-creation.

Consumer Protection and Trust

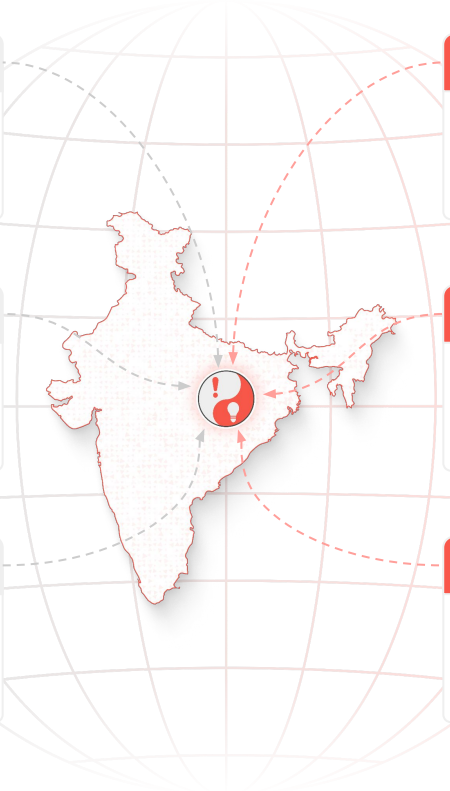
- Absence of tailored VASP regulations and arbitrary enforcement.
- Regulatory gaps erode trust in the sector, hindering adoption.
- Institutional investors remain hesitant due to lack of certainty.

Tax Inequities

- High tax burden and lack of tax parity with TradFi asset classes.
- 1% withholding tax curbs liquidity and constraints markets.
- VDAs are unfavourably classified and taxed as speculative assets.

Political and Policy Perception

- Lack of a pro-web3 policy agenda and negative regulatory tone.
- Misalignment with global web3 policy trends risks isolating India.
- Lagging behind political shifts in other developed economies.



Introduce Robust VASP Regime

- Enforce global best-practices for VASPs, prioritizing user rights.
- Create a level playing field for global and Indian VASPs.
- Enable healthy and competitive Internet-native capital markets.

Optimized Web3 Tax Regime

- Tax parity will significantly unlock and boost market participation.
- Tech-informed tax regime for VDAs is the need of the hour.
- Grow the pie with better VDA tax economics; incentivize reporting.

Positive Signalling for Web3

- Implement VASP laws; solidify property rights for VDA activities.
- Apply global policy insights and coordinate in global regulation.
- Liberalize the web3 sector and co-create the ‘World Computer’.

4.2 Key Regulators and Government Stakeholders

India lacks a dedicated regulator for the web3 sector and hence various ministries, regulators, and agencies exercise jurisdiction over VDA activities and participants based on perceived risks by the Government.

Financial Intelligence Unit – India (FIU-IND)

The FIU-IND oversees registration and supervises adherence to AML laws for VASP services (including exchanges, custody, and other VDA services). It recommends blocking URLs of unregistered entities involved in VDA activities.

Key person(s):
Mr. Vivek Aggarwal
Director, FIU-IND

The Directorate of Enforcement (ED)

The ED enforces AML and exchange control laws, imposes significant monetary penalties and other consequences, including asset attachment, during investigations. It plays a critical role in targeting money laundering and illicit financial activities.

Key person(s):
Mr. Rahul Navin
Director, ED

Central Board of Direct Taxes (CBDT)

The CBDT administers the direct tax laws, including taxation on VDAs, and works with the Income Tax Department to formulate the policy on VDA tax treatment. It plays a critical role in the Government's overall direct tax strategy and its enforcement.

Key person(s):
Mr. Ravi Agrawal
Chairman, CBDT

Ministry of Finance (MoF)

The MoF is the apex Government authority that drives financial policy in India, especially as it relates web3 and VDAs. It has taken the lead on web3 policy statements, emphasising the need to be aligned with international consensus.

Key person(s):
Ms. Nirmala Sitharaman, Minister, MoF and Mr. Ajay Seth, Secretary, Economic Affairs

Reserve Bank of India (RBI)

The RBI regulates banks, payments players, financial services and forex flows. It has maintained an anti-VDA stance, citing concerns over macroeconomics and the risk of dollarization via stablecoins. It introduced the CBDC as a controlled alternative to VDAs.

Key person(s):
Mr. Sanjay Malhotra
Governor, RBI

High Involvement Medium involvement Low Involvement

4.2 Key Regulators and Government Stakeholders

India lacks a dedicated regulator for the web3 sector and hence various ministries, regulators, and agencies exercise jurisdiction over VDA activities and participants based on perceived risks by the Government.

Ministry of Electronics and Information Technology (MeitY)

The MeitY is the nodal ministry for the technology and internet sector in India. It holds the effective power to block URLs, published a policy paper on blockchain tech and launched 'Vishvasya' - India's native blockchain tech stack (without referring to or including VDAs).

Key person(s):
Mr. Ashwini Vaishnaw, Minister, and Mr. S Krishnan, Secretary, MeiTY

Central Board of Indirect Taxes and Customs (CBIC)

The CBIC formulates policies for the levy and collection of Goods and Services Tax (GST). It has (through its enforcement arm) taken enforcement actions against VASPs operating in India and will likely drive the Government's indirect tax strategy for VDAs.

Key person(s):
Mr. Sanjay Kumar Agarwal
Chairman, CBIC

International Financial Services Centres Authority (IFSCA)

The IFSCA regulates India's international financial service centres (IFSCs), offering a jurisdiction substitute for the RBI and SEBI. It has been an early adopter of progressive regulations, offering sandbox approvals for tokenized RWA projects.

Key person(s):
Mr. K. Rajaraman
Chairperson, IFSCA

Computer Emergency Response Team – India (CERT-In)

The CERT-In oversees cybersecurity compliance across India and investigates cyber incidents, including involving VDAs and fintech. The team plays a critical role in identifying vulnerabilities and responding to security breaches in the Indian digital ecosystem.

Key person(s):
Dr. Sanjay Bhal
Director General, CERT-In

Indian Cyber Crime Coordination Centre (I4C)

The I4C is a government initiative that coordinates efforts between law enforcement agencies to combat cybercrime, including in relation to VDAs. It plays a pivotal role in the security of India's digital ecosystem and coordinating investigations involving VDAs.

Key person(s):
Mr. Rajesh Kumar
CEO, I4C

High Involvement Medium involvement Low Involvement

4.2 Key Regulators and Government Stakeholders

India lacks a dedicated regulator for the web3 sector and hence various ministries, regulators, and agencies exercise jurisdiction over VDA activities and participants based on perceived risks by the Government.

Securities Exchange Board of India (SEBI)	Ministry of Corporate Affairs (MCA)	State Police Authorities	Central Consumer Protection Authority (CCPA)	Advertising Standards Council of India (ASCI)
The SEBI regulates the securities and commodities markets and has adopted a relatively less stringent stance on VDAs. It advocates for multi-regulator oversight and may eventually regulate VDAs that exhibit characteristics of securities.	The MCA governs registered companies, including foreign companies registered in India, and mandates disclosure of VDA holdings in financial and corporate filings. This tracks with the government's objective of surveillance of VDA-related business activities.	State police authorities investigate criminal complaints related to VDAs and have the power to freeze assets and accounts during investigations. Their role is crucial in ensuring law enforcement at the state level, addressing cybercrimes and fraud related to VDAs.	The CCPA safeguards consumers from unfair, restrictive, fraudulent and misleading business practices, and the provision of deficient services. It has the authority to take proactive action and enforce penalties when consumer rights are violated.	The ASCI is a self-regulatory body that prescribes guidelines for transparency in VDA advertising. It works closely with the CCPA and is responsible for enforcing rules against misleading advertising, including reprimands or removal of ads from public platforms.
Key person(s): Ms. Madhabi Puri Buch Chairperson, SEBI	**Key person(s):** Ms. Nirmala Sitharaman, Minister, and Ms. Deepti Gaur Mukerjee, Secretary, MCA	**Key person(s):** State-specific representatives	**Key person(s):** Ms. Nidhi Khare Chief Commissioner, CCPA	**Key person(s):** Mr. Partha Sinha Chairman, ASCI

High Involvement Medium involvement Low Involvement

4.3 Regulatory Frameworks

India's arc of regulation is evolving. From the banking ban to its overruling, India has established and enforced AML and tax regimes and has played an active role in the G20 to foster global regulatory consensus.

Pre-Ban Era (2012-2018)

Remembered as the "wild-west" phase for web3 in India, with little regulation, speculative adoption via offshore centralized exchanges (CEXs) and the ICO boom of 2016-2018.

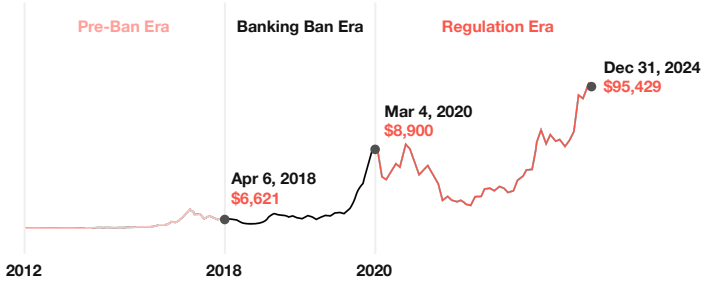
The RBI issued several warnings across the years cautioning users against VDA risks. At the same time, the sector incubated in India leading to the rise of India's first web3 startups.

Banking Ban Era (2018-2020)

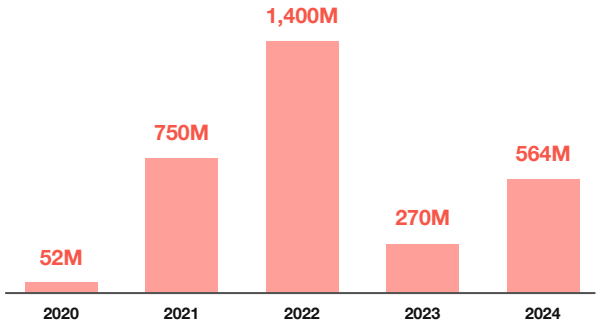
In 2018, the RBI banned TradFi from dealing with VDAs, cutting off two years of banking access for the sector. In 2019, a draft law was published proposing an outright ban on VDA activities.

In 2020, the Supreme Court overruled the RBI's banking ban, deeming its lawfare as a disproportionate invasion of fundamental rights. The RBI then clarified that banks could provide services to VDA businesses and has not attempted regulation since.

Bitcoin Price



VC Funding for Indian Web3 Companies



Regulation Era (2020-Present)

Tax: The Union Budget 2022 introduced a 30% tax on income from VDA transfers and a 1% withholding tax deducted at source on all VDA transactions.

AML: In 2023, AML compliance requirements were extended to VASPs, with the FIU-IND publishing guidelines for KYC, AML registration, and ongoing compliance. The CERT-In directed VASPs to implement KYC verification as per the prescribed guidelines.

Other Laws: The Companies Act 2013 was amended to disclose VDA holdings and the ASCI's advertising guidelines for VDAs were prescribed.

G20 Presidency: During G20 Leader's New Delhi Declaration in Sept 2023, India led efforts to develop a consensus on globally-coordinated web3 regulation.

URL Blocking: In Dec 2024, the Indian Government blocked the URLs and mobile apps of foreign CEXs serving Indian users, requiring them to comply with local AML laws and KYC regulations.

Consultation Papers: In Aug 2024, the MoF announced a consultation paper for VDA regulation, with reports indicating that the RBI and SEBI have shared their views. In Feb 2025, IFSCA released a detailed consultation paper on regulatory approaches for RWAs.

4.3 Regulatory Frameworks

In the absence of a comprehensive regulatory framework for web3 in India, existing laws apply through VDA-specific amendments or interpretative extensions. This creates legal gaps that disincentivizes many types of web3 businesses from establishing operations onshore.

AML Regulations

Since March 2023, VASPs with India operations need to register under India's AML law, the Prevention of Money Laundering Act, 2002. Compliance involves verifying user identities (KYC), maintaining records, appointing dedicated AML personnel, reporting suspicious transactions, implementing AML policies, and undertaking audits. It is ambiguous as to whether the AML requirements apply to decentralized protocols, which typically lack centralized control structures and intermediaries for enforcing these regulations.

The FIU-IND has laid down detailed guidelines and manuals specifically for VASPs in line with FATF guidance from 2019, including the travel rule and guidelines on inter-VASP nesting arrangements. The FIU-IND proactively engages with VASPs and conducts trainings to enhance compliance.

Foreign Exchange Regulations

The Indian law regulating forex inflows and outflows, the Foreign Exchange Management Act, 1999 (FEMA), relies on tracking cross-border transactions through authorized dealer banks. VDAs are not classified under FEMA, leading to ambiguity on cross-border transfers, including deposits, withdrawals, on-ramping and trading. The ED has taken a regulation-by-enforcement approach in many such cases.

While FEMA allows Indian resident individuals an annual allowance of forex outflow of USD 250,000, most banks do not allow it to be used for VDA purchases, locking such purchasers to Indian liquidity sources for VDAs (exchanges, OTC providers and peer-to-peer purchase). Despite being mere intermediaries, VASPs and DeFi projects may be impacted if user transactions are perceived to violate FEMA.

Securities Regulations

The SEBI does not follow a 'Howey test' or 'investment contract' analysis to determine whether VDAs are classified as securities under Indian law. The definition of 'securities', under the Securities Contracts (Regulation) Act, 1956 (SCRA), includes traditional financial instruments such as stocks, bonds, and 'commodity derivatives', but does not include VDAs or VDA derivatives. That said, the definition of 'securities' is an inclusive list, leaving room for interpretive and legislative expansion in the future.

VDA platforms will need to maintain clear and legally-vetted token-listing policies and continuously assess tokens for security-like features to remain compliant with the SCRA. It is unclear whether security tokens or tokens representing wrapped/synthetic public stock listed on DeFi protocols marketed to Indian users will be exposed to regulatory oversight by the SEBI.

High Risk Medium Risk Low Risk

4.3 Regulatory Frameworks

In the absence of a comprehensive regulatory framework for web3 in India, existing laws apply through VDA-specific amendments or interpretative extensions. This creates legal gaps that disincentivizes many types of web3 businesses from establishing operations onshore.

Investment Scheme Regulations

Pooling arrangements (where investors have an expectation of returns and are not in day-to-day management and control) will generally fall under the category of 'collective investment schemes' (CIS), which requires SEBI registration. In practice, the CIS registration is onerous and generally unviable for web3 protocols and funds with similar objectives, such as incorporating domestic investment DAOs (decentralized autonomous organizations) or fundraising from the public via an ICO (initial coin offering).

Due to this incompatibility, coupled with exchange control regulations, web3 protocols, funds and its DAOs are structured offshore where there is more regulatory certainty.

Payments Regulations

The Payments and Settlement Systems Act, 2007 (PSS Act) regulates systems that facilitate payments between a payer and a beneficiary, including stored value instruments. Operators of such systems need to be authorised by the RBI. There are certain exceptions to the authorisation requirement, such as for agents collecting payments on behalf of a principal.

There are no VDA-specific provisions in the PSS Act, and the RBI has not enforced it till date against VASPs. The PSS Act should be closely analyzed for any model where a VASP or a protocol intermediates transactions between a payer and a beneficiary. Given the current ambiguity due to the lack of VDA-specific provisions or RBI guidance on the applicability of the PSS Act, web3 projects will, on a case-to-case basis, have to take risk-based analysis of its business and technological architecture.

RWA Tokenization Regulations

There is no specific regime for RWA tokenization projects yet. Most RWA tokens may trigger the definition of 'securities' under the SCRA given the reliance on an underlying issuer and asset.

While SEBI has not approved any RWA projects, IFSCA whose regulations are more permissive has granted regulatory sandbox approval (as Alternative Investment Funds) to RWA projects tokenizing real estate. However, IFSCA's view on RWA tokenization is evolving, and in February 2025, it released a detailed consultation paper on regulatory approaches on the subject. Launching a mainstream RWA project is challenging due to the lack of clarity from SEBI. While the IFSCA route can be explored on an experimental basis through the sandbox, the view of the regulator is in flux, and given the mandate of IFSCA, the project must be limited to targeting foreign investors.

High Risk Medium Risk Low Risk

4.3 Regulatory Frameworks

In the absence of a comprehensive regulatory framework for web3 in India, existing laws apply through VDA-specific amendments or interpretative extensions. This creates legal gaps that disincentivizes many types of web3 businesses from establishing operations onshore.

Intermediary Rules

Internet-based intermediaries under the Information Technology Act, 2000 (IT Act) are provided safe harbour against unlawful user-generated content so long as they fulfil due diligence conditions, including having specific terms in the user agreement, grievance redressal processes, and prompt takedown mechanisms of such unlawful information.

VASPs would generally be classified as intermediaries since they facilitate the transmission of electronic records. However, the application of the safe harbour principle to user transactions, as against user-generated content, is untested.

Data Protection Regulations

The Indian data protection regime is on the cusp of an overhaul with the Digital Personal Data Protection Act, 2023 set to overhaul the existing, more simplistic regime under the IT Act. The new regime introduces individual rights similar to global privacy legislations, and specific provisions on data breaches, security standards, parental consent, and cross-border data transfers, among others.

VASPs will need to carefully monitor Indian data protection developments since they typically process a high volume of KYC and other personal information. Like for other tech businesses, the new law will require a privacy compliance revamp for VASPs.

Advertising Rules

The ASCI guidelines on VDA advertising are self-regulatory standards that apply to ASCI members but are generally considered best practice across the industry. They are also mandatory across the board for cable TV ads. They involve the publication of a prominent disclaimer for VDA advertisements, among other requirements.

Where VASPs seek to market their VDA services in India, they should consider the ASCI guidelines, which besides the disclaimer, contain specific norms such as not using the terms "currency", "security" and "custodian", avoiding displaying less than 12 months' returns, not comparing VDAs returns with TradFi returns, not promising returns, etc.

Others

There are VDA-specific provisions in the CERT-In regulations and the Companies Act, 2013. The CERT-In directions of 2022 preceded the AML regime for VDAs and required VASPs to carry out KYC and maintain transaction records. Under the Companies Act, companies dealing with or holding VDAs are required to disclose it in its annual corporate filings.

These two regimes comprise a relevant part of the wider set of specific VDA provisions under Indian law, along with the AML, income tax and advertising (self-regulatory) provisions, In all other statutes, applicability to VDAs may extend by interpretation.

High Risk Medium Risk Low Risk

4.4 Structuring and Enforcement Trends

The Indian web3 sector deals with a constantly evolving on-ground picture for web3 platforms and protocols. Despite looming risks, projects have continued to build, raise funding, operate in key markets and scale their businesses.

Enforcement by URL Blocking

Indian authorities (specifically the FIU-IND and MeitY) have been proactive in their use of URL blocking and app takedowns as enforcement mechanisms, particularly targeting foreign VDA platforms that did not register under the new AML norms. This approach aligns with India's broader strategy of utilizing blocking as a 'blunt-force' tool against allegedly non-compliant platforms across other sectors, such as gaming, social media, and fintech.

Those VDA platforms which registered and paid penalties were unblocked, leading to significant commercial impact and user harm in the meantime. The legal basis for blocking URLs is debatable since the AML law does not explicitly authorize the government to block URLs or restrict access to platforms. There have been reports of users circumventing these restrictions using virtual private networks (VPNs), despite VDA platforms and regulators discouraging this.

ED's Enforcement Actions

The Enforcement Directorate (ED) possesses extensive investigative powers, including the authority to freeze bank accounts during investigations. ED has expressed concerns on some VASPs allegedly facilitating transactions violating FEMA and AML provisions and has initiated proceedings in that connection. In response to these regulatory pressures, many VDA platforms have adopted a cautious approach, including halting VDA withdrawals, due to the risk of bank accounts being frozen due to suspicious transactions. Directors and compliance personnel can be exposed to ED investigations and should ensure due diligence to mitigate personal liability risks.

This regulation-by-enforcement approach severely disrupts business operations and should be replaced by clarifications in the law and amendments where necessary. ED refocusing its enforcement targeting against bad actors will provide operational certainty for compliant VDA platforms while tackling illicit activity effectively.

Offshoring amid Regulatory Ambiguity

While many Indian tech startups are moving away from the offshoring trend and "flipping" back into India, most Indian-founder-led web3 projects have established holding entities and retained intellectual property (IP) offshore. These projects also relocate their teams abroad to hedge against regulatory ambiguity, provide investors comfort, and gain greater flexibility and legal certainty for their business. However, offshoring does not entirely shield a project's Indian operating entity or team from the oversight of Indian regulators.

An important factor is that customers tend to trust contracting with onshore entities, as they feel more secure knowing the business has assets and operations within India. Furthermore, offshored crypto businesses are unable to list an IPO on Indian stock markets—an inherent disadvantage in a market with high retail adoption potential. Nonetheless, offshoring has become a necessary move for many web3 startups, given the lack of an enabling web3 regulatory framework in India, in contrast with some foreign jurisdictions where there is better clarity on DeFi protocols and issuing tokens.

4.4 Structuring and Enforcement Trends

The Indian web3 sector deals with a constantly evolving on-ground picture for web3 platforms and protocols. Despite looming risks, projects have continued to build, raise funding, operate in key markets and scale their businesses.

Difficulty with VDA withdrawals

Many CEXs have restricted VDA withdrawals despite the FIU-IND's AML/CFT guidelines not imposing such restrictions. This is due to a combination of the following: (i) the ambiguity of India's forex control laws, FEMA, and its applicability to the cross-border movement of VDAs; (ii) some financial institutions that provide banking services to CEXs may require the restriction on VDA withdrawals as a pre-condition for providing their services; and (iii) allowing VDA withdrawals may increase the exposure of CEXs in criminal investigations of suspicious transactions and complicates compliance with AML regulations, since such VDAs transactions may involve withdrawals to unknown addresses.

The legal basis for the precondition in (ii) is questionable, particularly given the RBI circular reversing the banking ban. Another unintended consequence is that it places onshore CEXs at a distinct disadvantage against foreign CEXs which permit VDA withdrawal and self-custody (a key aspect of web3).

Banking and Payments Access

Companies in the web3 sector continue to face difficulties in accessing Indian banking rails and payments-related services, with most banks and payment providers hesitant to serve the industry due to perceived regulatory and law enforcement risks. For larger web3 companies and CeFi platforms, ensuring business continuity requires building long-term trust relationships with banking partners and compliance with onerous impositions (such as restricting VDA withdrawals). For early stage companies and decentralized protocols, this challenge is especially pronounced due to their scale. Indian VASPs by and large do not have access to the ubiquitous UPI-based payment routes to purchase VDAs, increasing friction and higher entry barriers for retail adoption.

This situation effectively creates a shadow debanking, akin to 'Operation Chokepoint' in the USA. The legal basis for this adverse environment is debatable and its commercial impact is crushing for the sector.

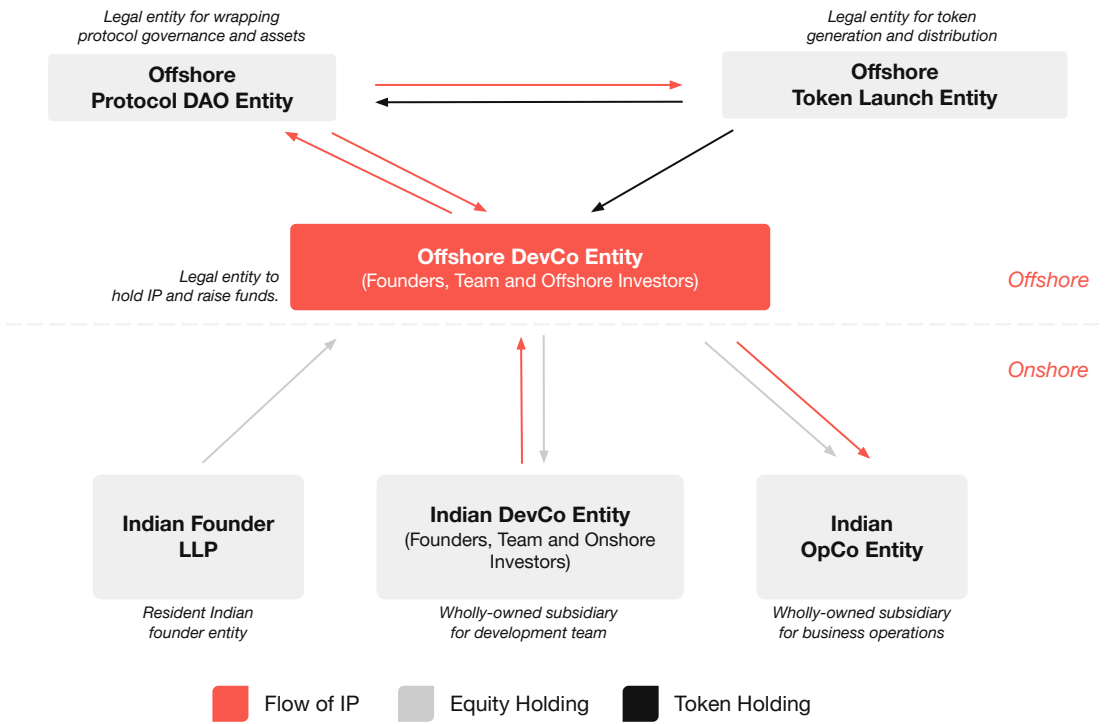
Marketing to Indian Users

In light of recent enforcement actions against foreign CEXs, global web3 platforms and protocols targeting the Indian user base will need to make a risk-based judgment call on whether to actively market in India, build a local user and developer community, develop India-specific product features, or simply accept Indian users passively through reverse solicitation. The Indian courts have generally held the view that active targeting of Indian users by a foreign entity offering internet-based services makes it subject to Indian laws, while passive availability or access does not necessarily trigger Indian legal jurisdiction.

Since web3 technology is nascent and community-driven, actively marketing and building a core in India which has high user and developer adoption is crucial for global platforms and protocols. This enforcement trend, coupled with regulatory ambiguity, is limiting India's competitiveness in the global web3 race.

4.4 Structuring and Enforcement Trends

Indian founders building a web3 protocol or platform and looking to cater to both Indian and global markets may consider this illustrative corporate structure to plan its incorporation, operations, IP management, fundraising, token-related activities and compliance.



Structuring Considerations:

- **IP Development and Licensing:** The Offshore DevCo will generally hold the IP developed by the Indian DevCo and license it to other group entities.
- **Indian Residency:** Depending on whether the founders are residents in India, the structuring considerations, including exchange control, tax, and corporate structuring, will vary. When founders are Indian residents, additional complexities arise, such as overseas investment regulations and tax implications related to permanent establishment and place of effective management rules.
- **Fundraising:** Investors enter into: (i) Equity Agreements/Simple Agreements for Future Equity (SAFE) + Token Warrants with the Offshore DevCo for equity + token investments, or (ii) Simple Agreements for Future Tokens (SAFT) with the Offshore Token Launch Entity for token-only investments.
- **On-chain Relationship:** The protocol's DAO and token-related structuring aspects are relevant only for projects which intend to be structured as DAOs and launch tokens.
- **AML Compliance:** VASPs targeting Indian consumers will need to comply with Indian AML requirements, in line with the FIU-IND's current enforcement approach.

Disclaimer: Not legal advice. These illustrations are only for information purposes, and any corporate structuring will depend on fact-specific considerations, for which legal and tax advice should be obtained

4.5 Taxes

While the introduction of a tax regime and recognition of VDAs was a welcome move, the specific income tax regime has stringent consequences and an onerous withholding obligation, and is fast-evolving in line with G20 resolutions.

Flat 30% Income Tax	Income from VDA transfers (sale, exchange, disposal etc.) is taxable at 30% without any allowance or deduction in respect of any expenditure incurred for the transfer (other than the cost of acquisition). Further, no set-off of losses incurred on transfer of other VDAs are allowed against any income of the taxpayer and such losses are not allowed to be carried forward. Such harsh tax treatment makes the Indian tax regime an exception to VDA tax regimes globally. Further, the tax treatment of VDAs is significantly different from taxation of securities or capital assets and is even more stringent than taxation of speculative income. This creates a situation where taxpayers are at an unfair disadvantage if they face losses from VDA transactions, especially considering the price volatility of VDAs.
1% Withholding Tax	Any trade or transfer of VDAs by Indian users is subject to a 1% withholding tax deducted at source (TDS), which was introduced to enhance transaction traceability and tax compliance within the web3 sector. This tax obligation is applicable to Indian VDA platforms and its applicability to foreign VDA platforms is currently grey. Projections indicate tax revenue loss in the range of INR 4,700 to INR 14,837 crores (NALSAR Report 2024 and Esya Centre Report) on account of users moving to offshore/unregulated VDA platforms particularly on account of high TDS exposure of 1% on each VDA transaction. This exodus to offshore platforms not only diminishes the domestic market's vibrancy but also hampers the government's ability to monitor and regulate VDA transactions effectively.
Definition of VDAs	The definition of 'virtual digital asset (VDA)' does not take into account varied use cases of VDAs (such as utility, payment, security, asset-backed, governance tokens etc.). This lack of specificity in the legal definition leads to a one-size-fits-all tax treatment irrespective of the purpose or function of the token. For instance, the terms "*any information or code or number or token*", "*generated through cryptographic means or otherwise*" etc. is so inclusive it may also encompass non-crypto assets (like digital vouchers, demat shares, airline points, credit card points, cloud tokens, game currencies etc.), that don't fit within the original intent of the regulation and thereby creates uncertainty for sectors beyond web3 as well. Furthermore, the definition fails to align with current international regulatory standards.
Taxation of Non-Residents	Determination of the situs (location) of VDAs is unclear and difficult due to its borderless and disintermediated architecture. In this regard, no guidelines have been issued by the tax department and this lack of clarity creates ambiguity in applicability of Indian tax law, especially when a non-resident transacts with an Indian resident. Under domestic law, the characterisation of income from VDAs as business income, capital gains or otherwise is largely irrelevant, as a flat tax rate of 30% applies. However, for non-residents, clarity is required on characterisation to assess applicability of tax treaty benefits.

4.5 Taxes

While the introduction of a tax regime and recognition of VDAs was a welcome move, the specific income tax regime has stringent consequences and an onerous withholding obligation, and is fast-evolving in line with G20 resolutions.

Compliance and Valuation Challenges

Absence of guidance on valuation and standardized INR benchmarks, especially in the context of VDA to VDA transactions (e.g. BTC-USDT, BTC-ETH pairs), leads to taxpayers adopting varying valuation mechanisms which could be a potential ground for disputes. Tax implications (and related compliance) on other important crypto-economic transactions, such as mining, staking and airdrops are unclear under Indian tax laws. A guidance from the tax department would provide certainty to the taxpayers (such as provided in Singapore and USA). Further, ambiguity around whether VDA balances of users held on overseas exchanges need to be disclosed under Schedule FA needs to be addressed, as non-compliance of such provisions can have severe penal consequences under income tax as well as black money legislation.

Rollback of Equalisation Levy and Interplay with SEP Provisions

The 2% Equalisation Levy on non-resident e-commerce operators has been rolled back with effect from 1 August 2024 and has potential implications for offshore VDA exchanges. The levy was likely to be applicable upon offshore VDA exchanges, and if discharged, their income would have been subsequently exempt from any income tax in India. With the roll-back, non-resident VDA operators offering services to Indian users will need to assess their income tax exposure in India, especially those operating from non-treaty jurisdictions. Particularly, exposure under Significant Economic Presence (SEP) provisions should be evaluated, which has the following applicability thresholds at a broad level: (a) INR 20 million in revenue from Indian users, or (b) interaction with 300,000 or more users in Indian.

Reconciling DeFi with Tax Laws

Compliance with Indian tax requirements, such as withholding tax obligations, becomes challenging when it comes to transactions on DeFi protocols. Since decentralized protocols, which by their nature may not be a legal person and do not operate through a onshore legal entity for the protocol, applying Indian tax requirements at a protocol's source-code or even at front-end level becomes impractical. Further, users transacting on such protocols on a peer-to-peer or a peer-to-pool basis, may face significant challenges in fulfilling withholding tax reporting requirements as the identity of the counterparty may not be ascertainable (since the counter-party is either a pseudo-anonymous address or the smart contract(s) of the protocol).

4.5 Taxes

While the introduction of a tax regime and recognition of VDAs was a welcome move, the specific income tax regime has stringent consequences and an onerous withholding obligation, and is fast-evolving in line with G20 resolutions.

New Reporting Framework

A new reporting framework is proposed to be implemented by the Finance Bill, 2025 for prescribed VASPs to provide certain information on 'crypto-asset' transactions and their users (including undertaking some due diligence measures), for the purpose of implementing the OECD Crypto Asset Reporting Framework (CARF) (pursuant to the G20 Leader's New Delhi Declaration September 2023).

- The CARF provides for the automatic exchange of tax-relevant information on crypto-assets between different reporting jurisdictions. To achieve uniformity in implementation it is likely that such rules will be broadly based on the rules and guidance provided in the CARF.
- Several key details remain to be defined, such as who will be the reporting entities (including whether non-resident entities would be covered), nature of information, manner in which such information would be maintained, date of the reporting obligation and other ancillary details will be prescribed in separate rules to be outlined by the government.
- It has also been proposed to expand the VDA definition to include 'crypto-assets'). This may impact tax aspects such as on income from transfer of 'crypto-assets' being subject to flat 30% tax and 1% withholding tax liability (including for crypto derivatives).

Block Assessments

The scope of 'undisclosed income' for the purposes of 'block assessment' has been proposed to be expanded by the Finance Bill, 2025, to include VDAs. Within such a framework, in a case involving search / seizure, the tax officer can make a tax assessment at 60% plus surcharge and cess for a block of <6 financial years on unreported VDA holdings.

4.5 Taxes

GST is applicable on all taxable supplies of goods and services in India. Currently, there is limited guidance on GST applicability on VDA transactions and increase in GST enforcement attempts for VASPs.

Classification as 'Goods' and past exposure

The classification of VDAs for GST purposes is not clear and no guidance has been provided by the tax department in this regard. A proposal to clarify the nature and taxability of various supplies in relation to VDA ecosystem was discussed in the 47th Meeting of the GST council, but no decision has been taken yet. Indian law defines "Goods" to include all forms of movable property, and the scope of property has been broadly interpreted by Indian courts. Similarly, courts in other common law jurisdictions have recognized VDAs as intangible property for varied purposes which increases the likelihood that VDAs may be characterised as goods under GST. While industry practice has been to charge GST only on the exchange services (i.e. on the commissions/service fees charged by the service providers), there could be significant GST exposure for entities issuing and selling VDAs should the tax department seek to levy 18% GST on the entire consideration, especially if it has a retroactive effect. In contrast, the UAE has recently announced a VAT exemption on VDA transactions with a retroactive effect.

Lack of Guidance on Valuation

There are no prescribed valuation rules for VDAs which causes tax ascertaining issues, especially where consideration is payable in the form of VDAs. Further, the location of supply is also an integral factor to determine the 'place of supply' for GST purposes. In transactions involving VDAs, especially VDA-VDA transactions, block rewards, mining and decentralised protocols, the GST department should clarify the place of supply.

Enforcement Trends

As per a news report from August 2024, a show-cause notice was issued to a prominent offshore VDA exchange, demanding unpaid GST dues of INR 722 crore (approximately USD 86M) presumably upon the service fees collected from the Indian users. This reportedly marks one of the first enforcement cases by the tax department against an offshore exchange. Further, with the recently increasing trend of offshore exchanges registering with the FIU-IND, the communication channels between regulators and these platforms are likely to open and the enforcement requests from the tax department are also expected to increase. This will add pressure on other offshore VDA platforms to adhere to Indian tax laws by adjusting their business models to ensure compliance or reconsider their commercial operations in India. For Indian users, this could result in disruptions in services or increased costs of services.

4.5 Taxes

Determining the tax implications of many types of VDA transactions is challenging due to the unique features of blockchain transactions and the lack of specific guidance from tax authorities.

Transaction Type	Income Tax Liability (rates are exclusive of applicable surcharge and cess)	GST Applicability
Purchase of VDA	Not applicable.	Not applicable.
Sale of VDA	Income (difference between sale consideration and cost of acquisition) taxed at flat 30% without any deduction or allowance.	Not clear under law currently, could potentially be subject to GST.
Swap/Exchange of VDA to VDA	Income (difference between sale consideration and cost of acquisition) taxed at flat 30% without any deduction or allowance.	Not clear under law currently, could potentially be subject to GST.
Mining of VDA	Ambiguity regarding whether expenses incurred for mining will be allowed as deduction for computing income from sale of minted VDAs. Receipt of mining rewards could potentially be subject to tax.	Not clear under law currently, could potentially be subject to GST.
Services Provided by VASP (for fees, commissions, etc.)	Should be considered as business income of VASP and taxable at applicable corporate income tax rate.	Taxable at 18% (could vary upon nature of services involved).
VDA Staking Rewards	Not clear under law currently, could potentially be subject to tax as other income.	Not clear under law currently, could potentially be subject to GST.
VDA Airdrops	Taxable as other income subject to INR 50,000 threshold being crossed.	Not clear under law currently; in absence of any consideration being received by the payer, GST may not apply.

4.5 Taxes

Determining the tax implications of many types of VDA transactions is challenging due to the unique features of blockchain transactions and the lack of specific guidance from tax authorities.

Transaction Type	Income Tax Liability (rates are exclusive of applicable surcharge and cess)	GST Applicability
Receipt of VDAs (as consideration for goods or services)	Income should be taxable as business income / other income (depending on nature of service, status of service provider). Ambiguity regarding valuation of consideration (received in VDAs).	GST should be payable subject to registration thresholds, at applicable rate (depending on nature of service). Ambiguity regarding valuation of consideration (received in VDAs).
Futures trading of VDAs (assuming futures do not qualify as VDAs)	Income from futures taxable as business income. Where sale of VDAs are also involved, income from such VDA transactions taxed at flat 30% without any deduction or allowance.	Services fees charged in relation to futures such as trading fee, liquidation fees taxable at 18% (could vary upon nature of services).
Borrowing against VDAs	Assuming no transfer in legal ownership of VDA takes place, should not be taxable.	Assuming no transfer of legal ownership of VDA takes place, should not be taxable.
Lending of VDAs	Assuming no transfer in legal ownership of VDA takes place, should not be taxable. Interest earned may potentially be subject to tax as other income.	Assuming no transfer in legal ownership of VDA takes place, should not be taxable.
Deposit / Withdrawal	Assuming no transfer in legal ownership of VDA takes place, should not be taxable.	Services fees charged for deposits / withdrawals should be subject to GST (refer 'Services Provided by VASP' above).
Self-Wallet Transfers	Assuming no transfer in legal ownership of VDA takes place, should not be taxable.	Services fees charged for deposits / withdrawals should be subject to GST (refer 'Services Provided by VASP' above).
Gas Fees	Gas fee payable may not be considered as a deductible expense for the user.	GST applicability on gas fees not clear under law currently, could potentially be subject to GST.

4.6 Policy Factors

India must overcome its negative policy perception that stifles innovation and instead focus on identifying and addressing the pain-points faced by stakeholders with effective regulation that will incentivize the web3 sector to grow and thrive.

VDA Classification Ambiguities

VDAs have posed significant classification challenges across jurisdictions due to their rapidly evolving nature. Key factors contributing to this ambiguity include: (i) the diverse VDA models and activities resulting in varying legal characteristics based on their design and programming, and (ii) their fundamental architecture, since VDAs are user-owned and controlled digital assets, driven with code, and in many cases are not backed by underlying TradFi instruments. VDAs and their underlying blockchains or protocols also differ greatly in terms of consensus mechanisms, token standards, real-world asset backing, supply, issuance methods, utility, transferability, value-accrual and fungibility. Some VDAs share similarities with regulated financial instruments, which complicates their classification under TradFi laws.

Consequently, regulation-by-enforcement is taking place in the absence of VDA-specific guidance.

End-User Rights in VASP platforms

Unlike decentralized protocols that require users to self-custody VDAs, VASPs hold custody of users' VDAs and exercise control over them. In the absence of a specific regulatory framework or court rulings on user rights against VASPs, the 'terms of use' between a VASP and the users play a crucial role during adverse events e.g., hacking or insolvency. These terms govern key issues like ownership and control of VDAs, dispute resolution mechanisms, platform responsibility, and liability limitations. Litigation by users has started to emerge in India, including Public Interest Litigations (PIL).

Generally applicable contract law, common law and even consumer protection law will take time to be interpreted to the VDA context, and the lack of a regulator places the burden of pursuing legal action on users.

Approach to Decentralised Protocols

There is no express guidance on whether decentralised protocols and non-custodial wallet providers should be classified as VASPs, particularly under AML and tax laws. The Indian AML law is based on FATF norms, and the FATF guidance from 2019 excludes software developers or providers of unhosted wallets whose functions are only developing and/or selling the software/hardware with full user control and ownership. However, wallet service providers who have control of the private key or otherwise exercise a degree of control over the VDAs may be included, even if perceived by some as sufficiently decentralized.

This requires a nuanced, facts and circumstances based analysis, which specific regulatory guidance, based on current global policy trends on the subject matter, can help align and simplify.

4.6 Policy Factors

India must overcome its negative policy perception that stifles innovation and instead focus on identifying and addressing the pain-points faced by its stakeholders with effective regulation that will incentivize the web3 sector to grow and thrive.

Cybersecurity for the Web3 Sector

Indian regulators have often cited cybersecurity risks associated with web3 activities as a key reason for restricting them, with risks including the exploitation of anonymity of VDAs for illicit activities, private key phishing attacks, 51% network attacks and DDoS attacks on the underlying blockchain network, smart contract or front-end exploits and vulnerabilities, and more. In recent years, a slew of cybersecurity incidents have taken place affecting VDA platforms and users, both abroad and in India.

Global regulatory best practices on cybersecurity for VASPs, emerging from regions like the EU, Dubai, and Hong Kong, have started to take shape, which include: (i) requirements to adopt proportionate cybersecurity and risk assessment frameworks, including business continuity measures; (ii) liability for losses arising from cyber attacks or other similar incidents; and (iii) requirement to provide a custody policy and asset segregation to minimize user loss due to cyber incidents. Since web3 technology presents novel attack vectors with potentially significant economic losses, staying ahead of the curve on web3 cybersecurity will be crucial for securing long-term sector growth.

Absence of Tailored Web3 Regulations

The absence of a specific regulatory regime for web3 activities in India has led to significant gaps and challenges. VASPs face uncertainty regarding their obligations under generally applicable laws, as TradFi regulations do not cater to the unique characteristics of VDAs. The absence of a dedicated framework is also a setback for consumer protection, since there are no sector-specific norms on disclosures, reserves, cybersecurity, asset management, management criteria, market integrity, insider-trading etc.

The lack of a predictable legal framework also discourages onshore investment and business formation, prompting offshore operations, undermining India's potential tax revenues and economic growth. Gaps in addressing decentralized protocols and non-custodial models further contribute to uncertainty and hinder the growth of the web3 sector in India.

4.6 Policy Wishlist

India needs to bring in enabling and progressive regulation for all stakeholders in the web3 sector. The EU's passage of MiCA and an emerging global consensus against banning could contribute to providing a roadmap for such an approach.

Regulatory Framework for VASPs

TradFi regulatory frameworks are ill-suited for regulating Web3. A ground-up regulatory framework needs to be developed incorporating well-established principles of regulation of intermediaries (such as, a licensing requirement, fit and proper criteria for management, disclosure norms, prudential norms, cybersecurity standards, periodic regulatory supervision, etc.) and addressing web3-native challenges. Simultaneously, regulatory capacity (either through a new regulator or existing regulators) needs to be enhanced, with multi-stakeholder expertise across technology, finance, and law.

Tax Rationalization

As new reporting mechanisms for VDAs are introduced, withholding taxes should be eliminated. The 1% withholding tax obligation is a setback to liquid markets and should (if retained at all) be rationalised to 0.01% to achieve its objective of traceability. The 30% tax on VDA income, without loss set-off, needs reconsideration, as it is akin to a sin tax. Instead, such income should be taxed similar to investment income, ensuring fair treatment, parity with other assets and alignment with global tax norms. Clarifying VDA classification for GST purposes, establishing standardized valuation norms and providing guidance on VDA transactions are essential.

Streamlined Banking and Payments Access

Detailed and fair due diligence guidelines should be laid down for banks and payment providers to offer services to the web3 sector, including access to UPI services. This will reduce the overtly risk-averse behaviour by TradFi institutions, who are currently reluctant to provide services in the absence of specific regulations. South Korean norms are instructive in this regard, and the U.S. also appears to be rolling back from its shadow banking ban.

Exemptions from VASP Regulations

Clarity is needed to ensure that non-custodial services, decentralized protocols, software developers, miners, proprietary traders, and others who do not pose a consumer protection risk—because they do not custody and/or control consumer assets—are not inadvertently subject to the onerous VASP regulations.

Clarity on Existing Regulations

Globally, securities, banking and payments regulators have issued guidance on when VDA activities will trigger TradFi regulations. In India, no such guidance has been issued by the RBI or SEBI, leading to uncomfortable ambiguities on the applicability of TradFi norms. Regulation-by-enforcement should be replaced with VDA-specific guidance.

Contributors

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About us

Hashed Emergent is a web3 venture capital firm, backing founders from India and other emerging markets shaping the on-chain frontier. We invest at the earliest stages of a web3 startup's journey, providing capital, strategic mentorship, and unparalleled access to a global network of talent, investors, and advisors to amplify their growth and success. Our portfolio consists of startups across diverse sectors within web3, including infrastructure, finance, and gaming.

As a part of Hashed, one of the most active web3-focused investment firms in the world, we leverage Hashed's global pedigree, deep expertise and full-stack ecosystem-building approach, positioning us as a foundational partner for web3 entrepreneurs globally. Our team is based in key web3 hubs across Bangalore, Seoul, Singapore, Lagos and Dubai, and we drive grassroots ecosystem growth through purpose-built initiatives like India Blockchain Week (IBW) Conference and our other community focused activities. As the most active web3 investor in India, we are deeply committed to accelerating the adoption of web3 technology.

In addition to early-stage capital, we also offer strategic support as part of our commitment to empowering the web3 ecosystem. Emergent Capability Center (ECC) provides end-to-end solutions for web3 companies looking to expand and scale operations in India, including talent management, legal advisory, and technology development. Wagmi Together (W2) empowers web3 projects to build brands and communities across India and Asia through a comprehensive go-to-market framework that includes Research, Content, Network, Events, and Partnerships. Together, these initiatives support the long-term success of our portfolio companies and the broader web3 ecosystem, which we believe will drive India's emergence as a global web3 leader.

Knowledge Partners

CoinDCX, established in 2018, is the largest crypto exchange in India, trusted by over 16 million registered users. CoinDCX's mission is simple: to provide easy access to web3 experiences and democratize investments in virtual digital assets. CoinDCX prioritizes user safety and security, strictly adhering to KYC and AML guidelines. CoinDCX's vision and potential have gained the confidence of global investors, including Pantera, Steadview Capital, Kingsway, Polychain Capital, B Capital Group, Bain Capital Ventures, Cadenza, Draper Dragon, Republic, Kindred and Coinbase Ventures.

Pi42—India's first crypto-INR perpetual futures exchange—is designed for traders seeking efficiency and advanced derivative features on par with global platforms. Pi42 has rapidly gained traction, surpassing $1 billion in trading volume and earning the trust of over 1,00,000 Indians. Offering 500+ INR and USDT pairs, the platform ensures high liquidity and seamless trading while enabling users to optimize strategies with tax-efficient benefits—exempting them from the 30% VDA tax and 1% TDS, and allowing the offsetting of losses.

Devfolio is a platform that empowers builders by hosting hackathons, fellowships, and grants, providing a space for them to materialize their ideas into startups. Today, builders use Devfolio to participate in these initiatives, learn new skills, build projects, and get hired. It has supported over 1,000+ hackathons globally, fostering innovation and collaboration. Devfolio also offers tools for organizers to manage events seamlessly, making it a hub for turning ideas into reality.

Lysto is a "Playtesting, User Research and User Acquisition" platform on a mission to enable studios to make player feedback the backbone of game development. Lysto helps analyse raw player data through Playtesting (with AI tools) and user research, and connecting studios with the right players for testing, building insights from actual player talk-aloud videos and player surveys. Lysto also work with all kinds of games, including web3, to grow their gamer base through User Acquisition campaigns.

Trilegal is a leading full-service law firm, with over a thousand lawyers across India. The firm's technology practice has consistently been ranked Tier 1 by leading journals, and its lawyers have assisted several prominent international and Indian web3 platforms on complex regulatory and tax matters.

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