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The India Web3 Startup Landscape

An Emerging Technology Leadership Frontier

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Leader's Note

Web3 is a powerful emerging technology and movement. Much like the dawn of the internet itself, the emergence of Web3 holds the potential to fundamentally transform the economy and our social fabric. This new wave of disruptive innovation has unlocked an abundance of opportunities, and India is uniquely positioned to benefit from it.

Today, India has a large and rapidly growing economy, a highly-skilled tech workforce with experienced leaders, a large and growing youth population and the second-largest English-speaking population in the world. Global leadership in the Web3 space is within India's grasp, but two critical factors are holding it back: lack of awareness about Web3 and the absence of a facilitative regulatory framework.

As this report shows in great detail, the technology underpinning Web3 has created a whitespace for innovation across domains and geographies. In order to fully understand and grasp the significance of the opportunity at hand, India must develop public awareness about this innovative technology, and the use cases and benefits it offers.

The development of a pragmatic regulatory framework that balances innovation with risk management is equally important. Such frameworks are already becoming law in other jurisdictions (like the EU) and India must catch up to retain its bid for global leadership. Substantial research will be required to come up with regulations that are tailor-made to the needs of India. At Hashed Emergent, we are committed to enabling the development and growth of the Web3 space in India with our expertise, network and continued support.

”



Tak Lee

CEO & Managing Partner,
Hashed Emergent

Leader's Note

India's rapid adoption of new-age technologies, its growing startup ecosystem, and the large-scale digitally skilled talent potential are all the right building blocks for India to emerge as a key player in the global Web3 landscape. On the consumption side also, India has the right economic and demographic elements to become a high-growth Web3 market.

Despite the nascency of this technology, globally, countries have started to experiment more deeply, and hence, realize early benefits of blockchain in serving the purposes of decentralized, autonomous, and immutable transactions. It is heartening to see that industry and government stakeholders in India are taking a pragmatic approach towards blockchain technology with use-cases being explored in areas ranging from health & safety, finance, enterprise tech, and land registry, to education.

While we are only scratching the surface when it comes to emerging tech, such as Web3, the Techade will be about the rapid advances in innovative use-cases and the resulting cascading positive impact at the grassroots level.

Web3 is meant to enable high levels of efficiency and innovation across the value chains. It will take more use cases to be explored to understand and unlock its full potential. This will have to be accomplished with the right sandboxing and risk management frameworks in place. All stakeholders shall have to strive towards setting these enabling policies and globally harmonized standards with a sense of urgency to preserve and promote the Web3 ecosystem in India.



Sangeeta Gupta

Senior Vice President and
Chief Strategy Officer, NASSCOM

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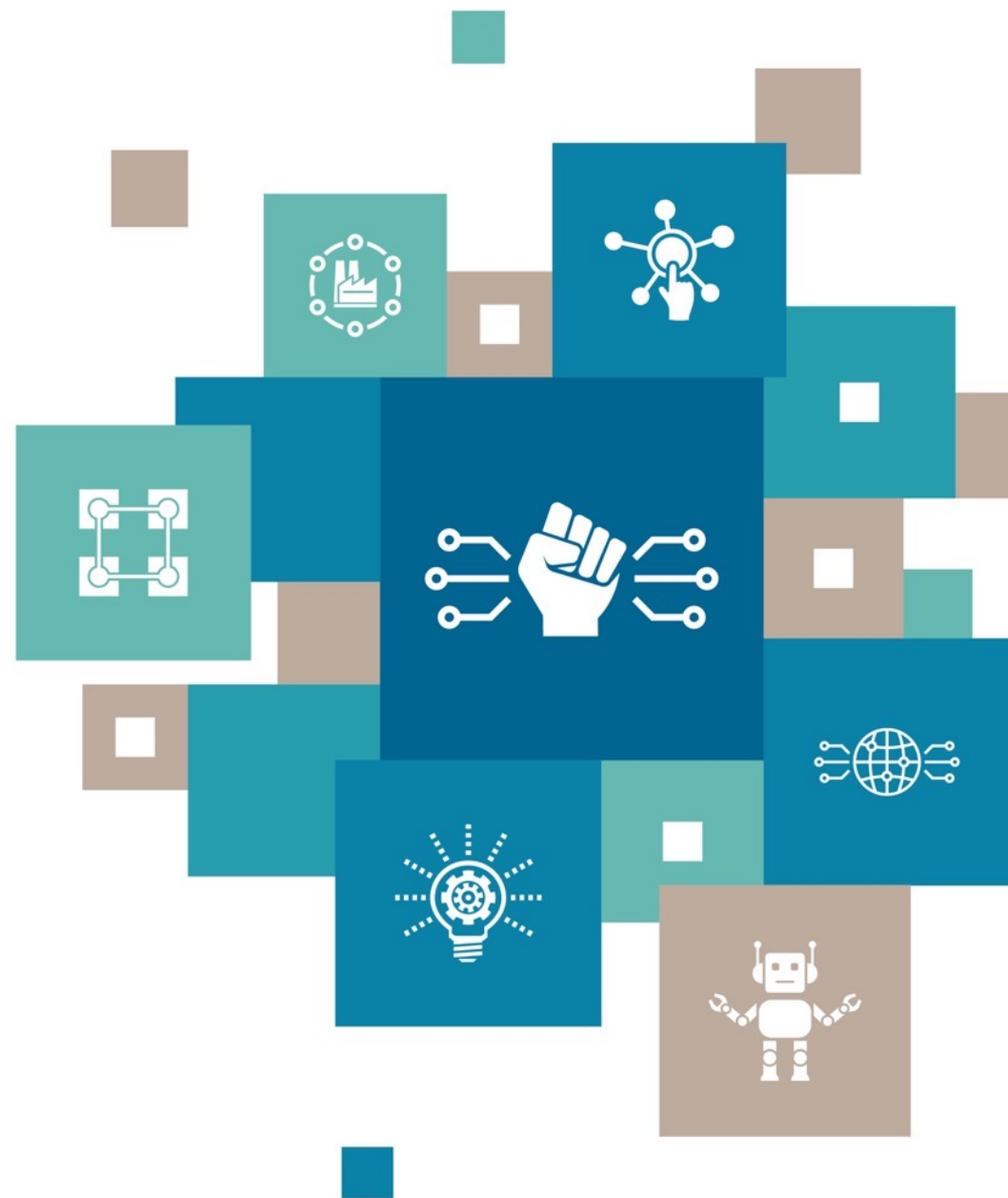
India's Web3 Talent Landscape

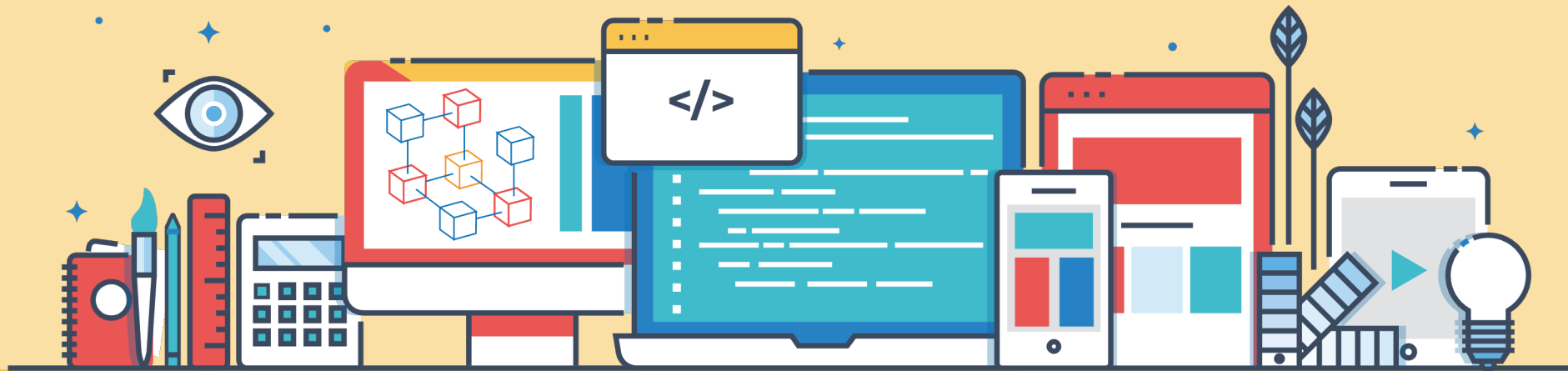
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Accelerating India's Web3 Adoption

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Appendix





Executive Summary

Web3, a blockchain-based evolution of the World Wide Web, received \$30.5 Bn of VC funding in 2021 alone, and over \$14.5 Bn in just Q1 of 2022 , led by investments in DeFi and NFTs

Global Web3 Trends

- \$30.5 Bn** Venture capital (VC) funding in blockchain & cryptocurrency market in 2021
- 15X** Growth in VC funding for crypto and blockchain startups since 2015
- \$14.5 Bn+** VC funding received in just Q1 of 2022
- 60%+** Of the \$14.5 Bn investment was raised by the top 10 global VC funds
- 1 Bn** Crypto user base by the end of 2030

Key Drivers of Web3 Market Growth

Demography

- 47% of the global 320 Mn+ cryptocurrency users are 18-34 years old
- Early interest in Web3 is being led by decentralized finance (DeFi) and non-fungible tokens (NFTs)

Regulatory

- Mature economies focused on tech R&D with guardrails
- RFIA – USA, Virtual Asset Regulation Law – UAE, MICA – Europe, Payment Services Act 2021 – Singapore are positive on digital assets

Tech Adoption

- A NASSCOM survey of global enterprises reveals that 90%+ of the most mature digital enterprises expect to increase investments across blockchain, AI/ML, IoT, AR/VR, and Edge

Features of Web3

Salient Features

- Decentralization
- Distributed Architecture
- Digital Trust
- Autonomous Transactions

Four Major Use Cases

- Finance (DeFi)
- Infrastructure
- Entertainment (Gaming)
- Decentralized Communities (DAO)

Top Horizontal Applications

- Metaverse
- NFTs

Source: Chainalysis's 2021 Global Crypto Adoption Index, Cointelegraph 2022 Q1 Venture Capital Report, Economic Times, NASSCOM-Zinnov analysis

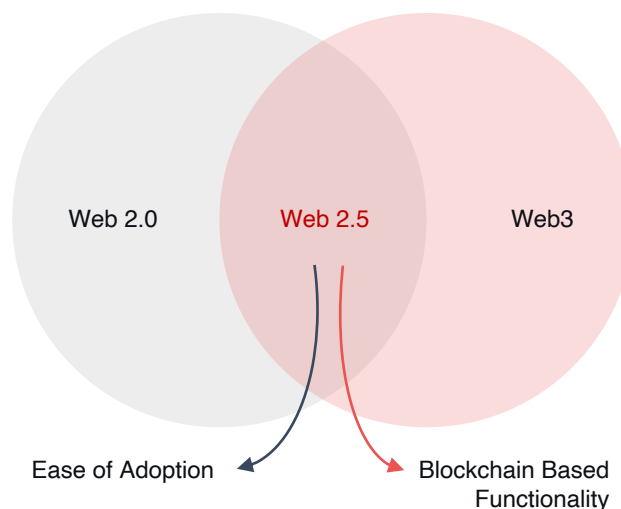
The decentralized, autonomous and permissionless nature of blockchain-based applications will require “adjustments” in the mid-term, creating market space for “Web 2.5” solutions

Web 2.5 will grow in the medium-term as the developer mindshare shifts towards “building for mass blockchain adoption” from the aim of “building to prove the utility of blockchain”.

What is Web 2.5

- ✓ Builders building with the blockchain technology stack are increasingly focusing on 'mass adoption', rather than on proving the functionality of blockchain
- ✓ Such builders adopt a pragmatic approach to development, and integrate Web 2.0 features with Web3 features based on market need
- ✓ Web 2.5 represents the rise of this group of startups

Web 2.5 Offers Web3 Functionality with Web 2.0 Familiarity



Web 2.5 will Ensure Faster Acceptance of Blockchain-Based Web3

- ✓ **Ease of Access** – Web 2.5 solutions will give users access to blockchain-based functionalities without requiring additional technical know-how
- ✓ **Product-Market Fit** – Developers who adopt a pragmatic approach to building a technology stack that balances Web 2.0 and Web3 features, will quickly find product market fit
- ✓ **Mass Adoption** – Seamless backend integration of the blockchain tech-stack will bring mass adoption to Web3

India has remarkable Web3 potential, with adequate talent, investors and addressable market, but is critically hamstrung by lack of policy clarity and comprehensive regulatory guidance

2nd

In Global Cryptocurrency Adoption Index

450+

Total number of Web3 startups in India, as of H12022

\$1.3 Bn+

Web3 investments since 2020

75K+

Tech talent in blockchain industry

Strength

Existing crypto user pool, Web3 talent, and abundant investments

Weakness

Ambiguity over use and regulation of digital assets

30%

Tax on gains from virtual digital asset trading

60%

Indian-founded Web3 startups registered outside India

~15%

Enterprises planning blockchain investments

47%

Leaders concerned with cybersecurity

77%

Largest Millennials and Gen Z population pool by 2030

900 Mn+

Active internet subscribers by 2025

\$1.1 Tn

Web3 economic value add to India GDP by 2032

120%+

Expected growth rate of Web3 talent in India in next 1-2 years

Opportunities

Largest digital-savvy, middle-income user base

Threats

Talent and investor exodus could accelerate India's "lost opportunity"

Reactive

Lack of forward-looking regulations

High Tax

Multiple taxation actions driving innovation out of India

Exodus

Expertise drain at concerning levels due to policy inaction

Skill Gap

<1000 STEM graduates are blockchain trained today

Sources: OKX – LinkedIn 2002 Blockchain Talent Report – Web3 Direction, Chainalysis's 2021 Global Crypto Adoption Index, Forbes, RBI, NASSCOM-Zinnov analysis

India already leads the globe in the Web3 market, with a competitive talent pool, high rates of adoption and products built for the world

Competitive Talent Pool



11%

Of global Web3 talent is in India, growing at the fastest rate

~138%

Rise in blockchain and cryptocurrency related jobs since 2018

60%

Indian Web3 startups registered outside, but hire tech workforce in India

Leading Adoption



#1

Global adopter of DeFi in terms of value received on-chain, adjusted for PPP

\$88 Bn

Value received on-chain in India in 2020-21

Global Products



 **polygon**

Polygon – the leading blockchain scalability solution with ~3-5 Mn MAU*

FALCONX

FalconX – institutional grade platform with a global user base

*MAU – Monthly Average Users | PPP - Purchasing Power Parity

Sources: Chainalysis's 2021 Global Crypto Adoption Index, NASSCOM 's India's Tech Industry Talent report, NASSCOM-Zinnov analysis

While Web3 holds great promise in various areas, startup founders consider regulatory uncertainty as a critical factor impeding growth

High-Impact Web3 Focus Areas for India

- ▶ **DLT-Based Governance Services**
- ▶ **Local Investments, Global Products**
- ▶ **B2B Tokenization Model**
- ▶ **India Blockchain Platform**
- ▶ **Financial Penetration**
- ▶ **Expert Web3 Talent Pool**

Challenges in Scaling Web3 Startups

- 1 Absence of Regulatory Clarity and Comprehensive Regulatory Framework
- 2 Absence of Institutional Upskilling Resources and Centers
- 3 Negative Social Image Created by Focus on Cryptocurrency Trading
- 4 Absence of Awareness About Benefits of Web3

Recommendations to Foster India's Web3 Ecosystem

Startups

- Focus on IP creation
- Co-create with industry
- Spearhead end-user education

Corporates

- Incorporate Web3 into strategic tech planning
- Align Web3 PoCs with real business KPIs

Students/Academia

- Build Web3 curriculum, certification courses
- Partner with industry for quick lab-to-market

Industry Associations

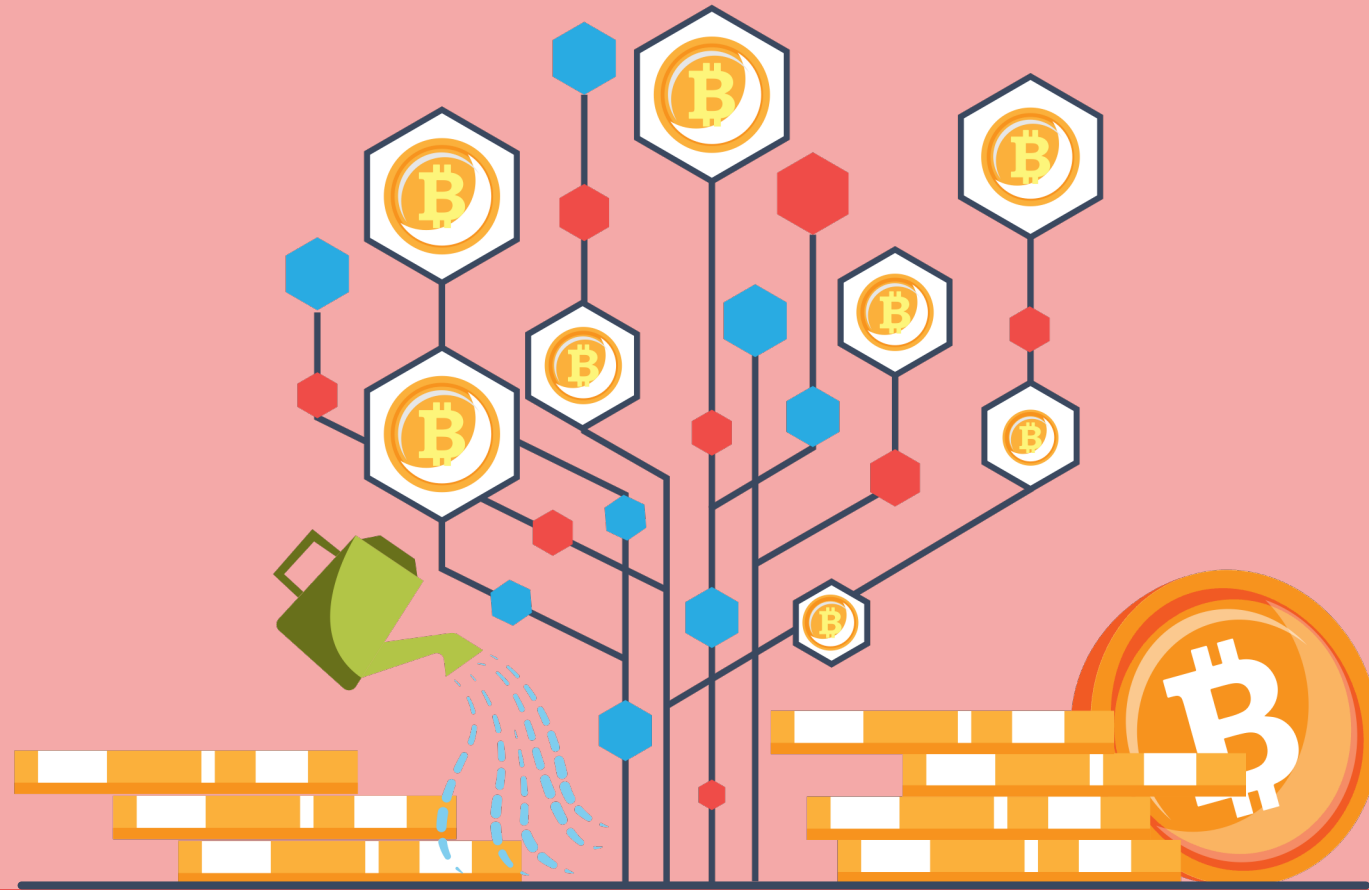
- Champion India opportunity and drive for policy standards at global forums

Governments/ Regulators

- Set short/medium/long term policy direction
- Drive sandboxing aggressively

Investors

- Seek end-user ease of usability, alongside technical sophistication
- Promote the development of organically evolving blockchain-based communities



The Web3 Buzz

- Technology Leaders on Web3
- Evolution Timeline
- Web 1.0, Web 2.0, and Web3

Technology Leaders on Web3

Decentralization, Not Crypto

Web3 is Not Crypto. it is the concept of decentralized and digital identity."

Matthew Gould, Founder, Unstoppabledomains

The Inside-Out Organization on Blockchain

Whereas most technologies tend to automate workers on the periphery doing menial tasks, blockchains automate away the center. Instead of putting the taxi driver out of a job, blockchain puts Uber out of a job and lets the taxi drivers work with the customer directly."

Vitalik Buterin, Founder, Ethereum

Web3 is About Composability

So, Web3 offers composability. It is like legos or digital legos. It is to software what compounding interest is to Finance. Very powerful!"

Chris Dixon, General Partner, Andreessen Horowitz

Web3 is a Powerful Technology; and it is Blockchain

On Web3, we are definitely looking at blockchain. Web3 is an interesting and powerful technology with broad applications."

Sundar Pichai, CEO, Google

Web3 and India Stack

Adding crypto to IndiaStack helps India domestically by enabling new forms of debt and equity financing for every Indian, by connecting them to global pools of crypto capital. It helps close the \$250 Bn+ MSME financing gap, gives startups access to a burgeoning financial internet, and allows fast payments for remote workers and remittance recipients."

Balaji Srinivasan, Angel Investor, Ex-CTO of Coinbase

Think Global to Bring Web 2.0 Companies to Web3

If you want to bring Web 2.0 companies to Web3, hire big talent in the global space. We need people who have global experiences with partnerships and new business development.

Sandeep Nailwal, Co-founder, Polygon

Value in Community, Not Platforms

If Bitcoin can have value, if Ethereum can have value, then in theory, an NFT can have value as long as the smart contracts and the social contracts and the community enforcing it has value."

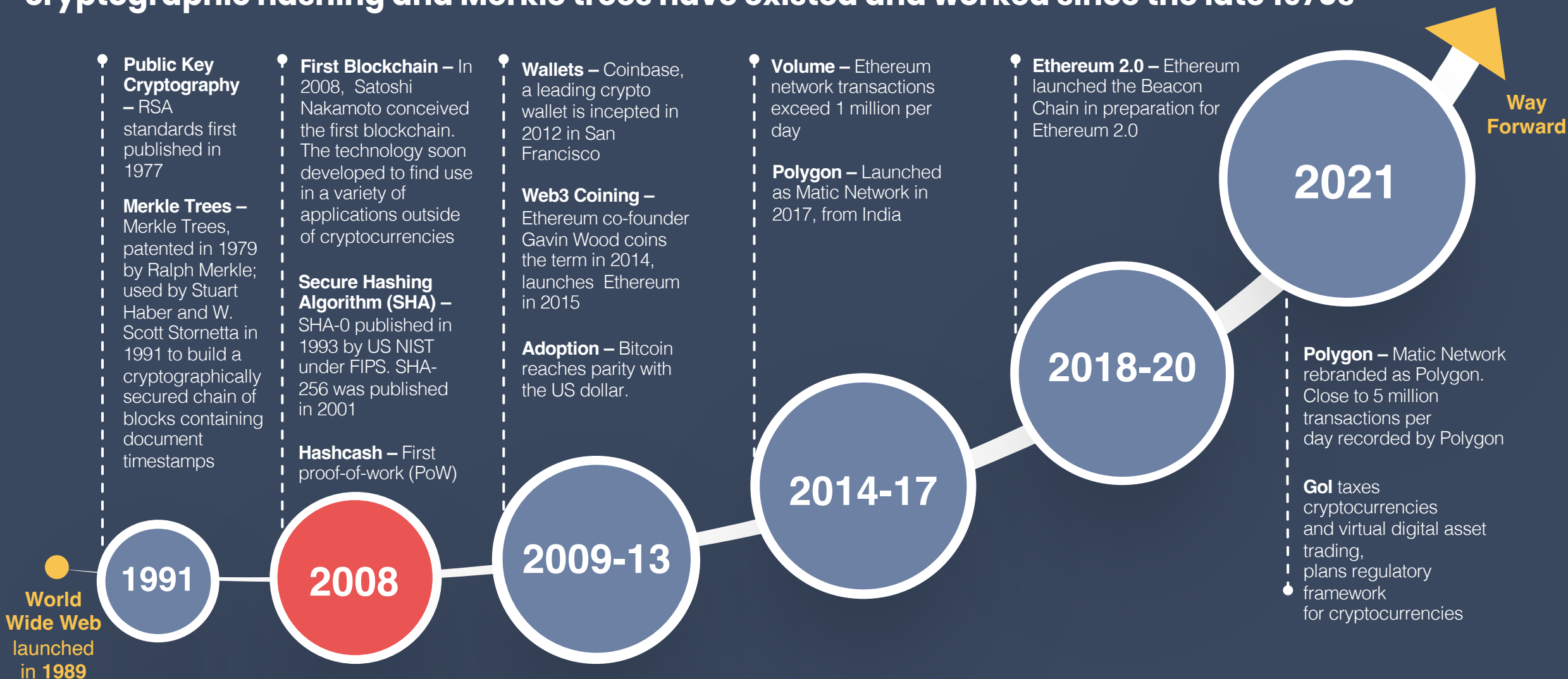
Naval Ravikant, Co-founder and Chairman, AngelList

Web3 Talent Surge

It's not even the first inning. It's like the anthem before the game has even started. And I have never seen so many highly intelligent, ambitious, capable people drop whatever they're doing, in many cases really attractive things, to dedicate their time to this."

Tim Ferriss, Early-Stage Tech Investor, Fortune's 40 Under 40

Web3 emerged in earnestness with the coining of the term in 2014, but the foundational blocks of cryptographic hashing and Merkle trees have existed and worked since the late 1970s



Sources: NASSCOM-Zinnov analysis

While Web 1.0 was static and Web 2.0 offered dynamic user-interaction, blockchain-based Web3 retains the dynamism of Web 2.0, with the ability to own digital spaces on self-sovereign terms



The Concept

Web 1.0

- Read-only web pages
- Unidirectional, company-pushed information

Web 2.0

- Read-write web pages
- Bi-directional interaction between content creators and readers, owners and creators, and owners and readers, but no portability across domains

Web 3.0

- Read-write-execute web pages
- Peer-to-peer interaction with users – humans and/or smart contracts – governing distributed, immutable, autonomous transactions based on distributed ledger technology (DLT)



Available Since

- Launched by Tim Berners-Lee in 1989
- Nearly replaced by Web 2.0 by early 2000s

- Since 2003-04, and in active use today

- In early stages worldwide
- Finance, entertainment, decentralized communities, and infrastructure use cases in formative stages



Tech Stack Components

- Company-owned data centers, web servers
- Monolithic software

- Public/private Cloud-based platforms
- Modularized software and APIs, but largely private

- Distributed and decentralized nodes, running open-source clients with consensus protocols
- Publicly-licensed, open-source, and composable smart contracts



Prominent User Devices

- Desktops, laptops

- Handheld devices
- Desktops and laptops

- Desktops and laptops
- Handheld devices – (limited functionality)



User Ownership/ Experience Control

- End-user ownership does not exist

- End users generate, share, and exchange content, but no control over nature of sharing and no content portability

- End users control content, generation, sharing, monetization, and portability based on self-sovereign digital identity



Understanding Web3 Basics

- Features of Web3
- Functional Architecture of Web3
- Major Global Web3 Startups
- Emerging Adoption Trends
- Four Major Web3 Applications
- Web 2.0 vs. Web3 across Application Areas
- The Web 2.5 Concept

Web3 is an ongoing evolution of the World Wide Web, based on blockchain, that will enable digital entities to control, utilize, and own content for “economic value” and different “experiences”

Definition of Web3

Web3 is the third generation of the World Wide Web based on decentralized infrastructure, peer-to-peer connectivity, cryptographically-secured communications, and fully (re)composable platform and applications that can enable end users to completely control online content and interactions.



Sources: NASSCOM-Zinnov analysis



Decentralization

Decentralization is a system design technique with no central provisioning of applications, verification of transactions, and management of data. A decentralized network comprises of independent nodes that collectively store data and code and process transactions through consensus



Open-Source and Composable

Composability is a native feature of blockchain-based applications as these are open-source, human-readable source code, with a machine-readable bytecode version also stored on the chain publicly, enabling independent verification of the chain's operations. Blockchain applications are also highly composable with one another, with easy code integrations, like a “lego” stack, with software considered a part of the public commons



Digital Trust

Digital Trust in Web3 is enabled by blockchain's feature of cryptographic hashing of transactions and blocks of transactions, thereby disabling the feature of “edit” and “delete” available in traditional databases and ensuring immutability. It eliminates the need for third-party verification, thus enabling a trustless system



Distributed Architecture

Distributed architecture is the opposite of a typical client-server model. High-performance distributed architecture can enable true peer-to-peer (P2P) networks on blockchain, with the ability to deliver high-capacity fault-tolerant systems



Autonomous Transactions

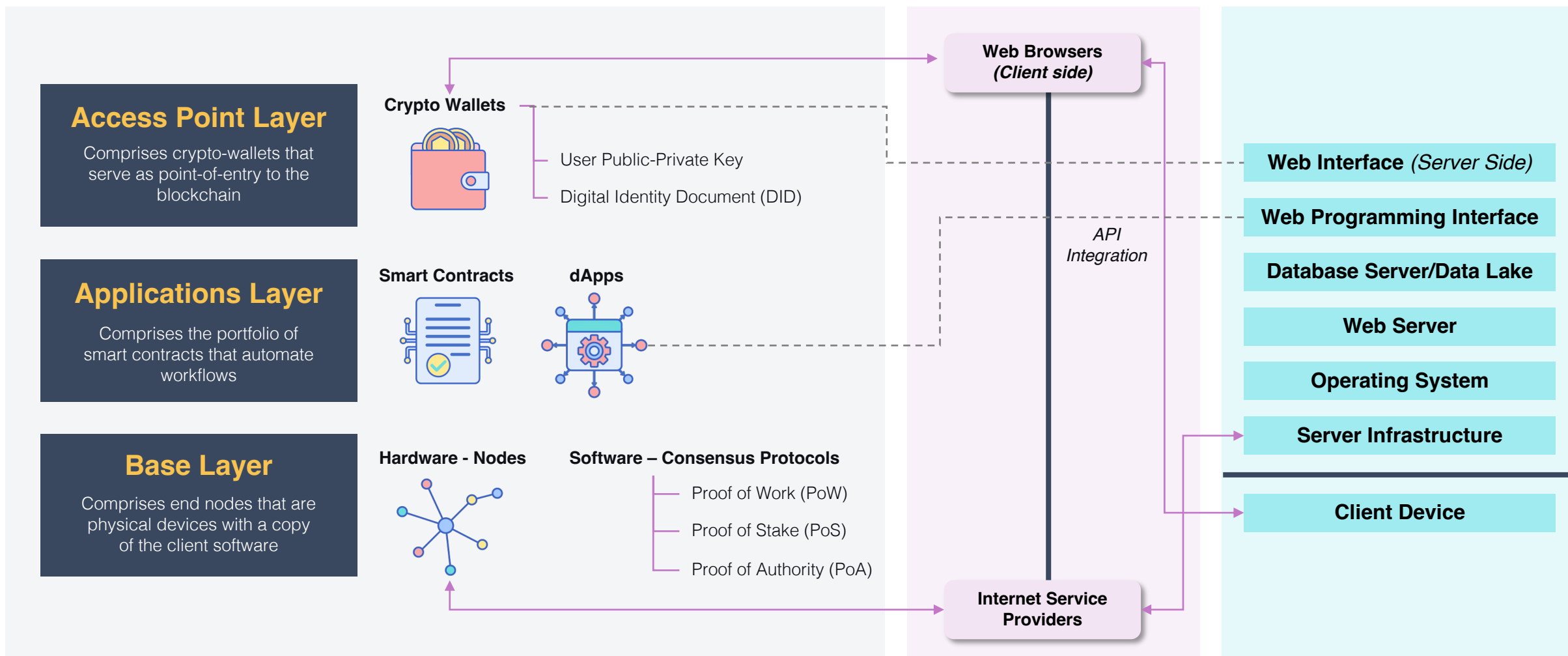
Autonomous transactions are a feature enabled by blockchain-based smart contract platforms that can be used by anyone for a fee. Once such a code is deployed on the blockchain, the logic encapsulated is stored permanently on-chain, and is permanently available for anyone to invoke, with no one able to stop its operations, hence, earning the moniker – the “unstoppable world computer”

Web3 tech stack comprises three main layers – base layer with nodes and protocols, dApps and smart contracts, and crypto-wallet based access layer – and uses Web 2.0 ISP and web browsers

Web3 Tech Stack

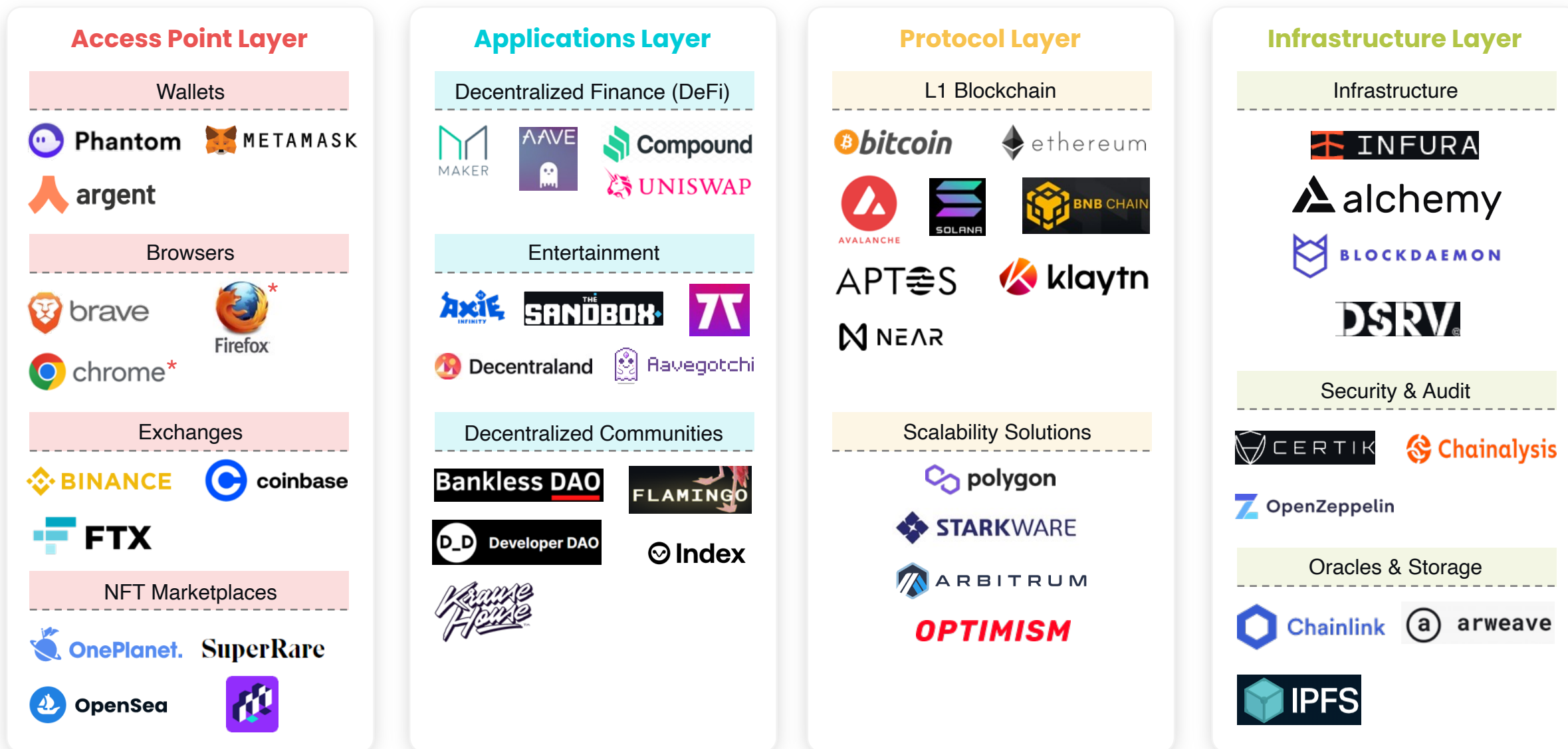
Web 2.0 Integration Layer

Web 2.0 Tech Stack



Sources: NASSCOM-Zinnov analysis

Global Web3 startups – an illustrative landscape

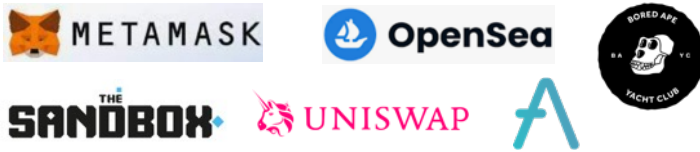


Sources: NASSCOM-Zinnov analysis | * Web 2.0 browsers

Development of Web3 has already started...

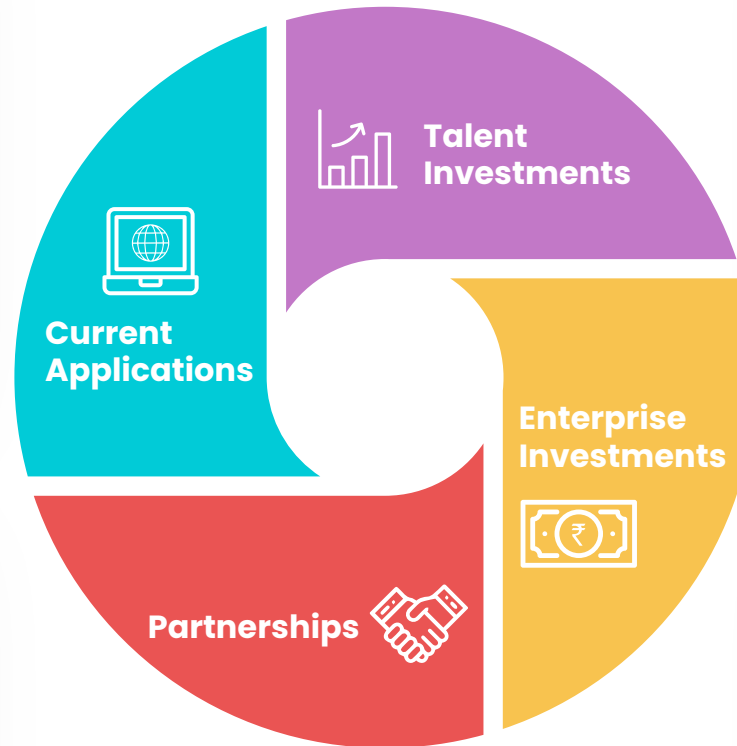
Global use cases for Web3

- Self-Organizing Communities - decentralized autonomous organizations (DAOs)
- Self-Controlled Identity – crypto-wallets
- Permissionless Finance – decentralized finance
- Entertainment Communities
- Non-fungible Tokens (NFTs)/Token Marketplaces
- Gaming & Metaverse Solutions



Collaboration across diverse ecosystem players

- Startup Support Programs
- Collaborations
- Innovation Programs



At-scale Web3 talent development

Polygon's "BUILD IT"



Web3/ blockchain hackathon aimed at promoting developer capabilities in designing use cases and building solutions for decentralized infrastructure

Andreessen Horowitz "a16z" Crypto Startup School



Started in 2020, the a16z Crypto Startup School offers a seven-week focused skill development program

Rising enterprise interest in Web3

- Metaverse
- Supply Chain Management
- Game Development
- Database Management



Most Web3 applications are focused on four areas of decentralized finance (DeFi), decentralized communities (DAOs), entertainment (Metaverse and gaming), and infrastructure

Web3 Application Areas and Major Use Cases

Decentralized Finance (DeFi)

Web3 applications that use smart contracts and digital currencies (or equivalents) to conduct financial transactions with minimal intermediation

Asset Management

Insurance Smart Contracts

Derivatives

FinTech Integration

Cross-Border Remittances

Microfinance

Entertainment

Web3 applications that enable end users to create, own, lend, and trade digital assets for rewards and experience

Play-to-Earn Models

Creator Platforms

Social Tokens and Trading

NFT Marketplace

Metaverse

Social Media on Blockchain

Decentralized Communities (DAOs)

Web3 applications that enable creation of permissionless or permissioned communities of interest with consensus-driven management

DAO Operating System

Protocol DAO

Social DAO

Investment DAO

Service DAO

Collector DAO

Infrastructure

L1 blockchain and node architecture, and protocols that drive blockchain consensus mechanism for different types of use cases

L1 Blockchain Architecture

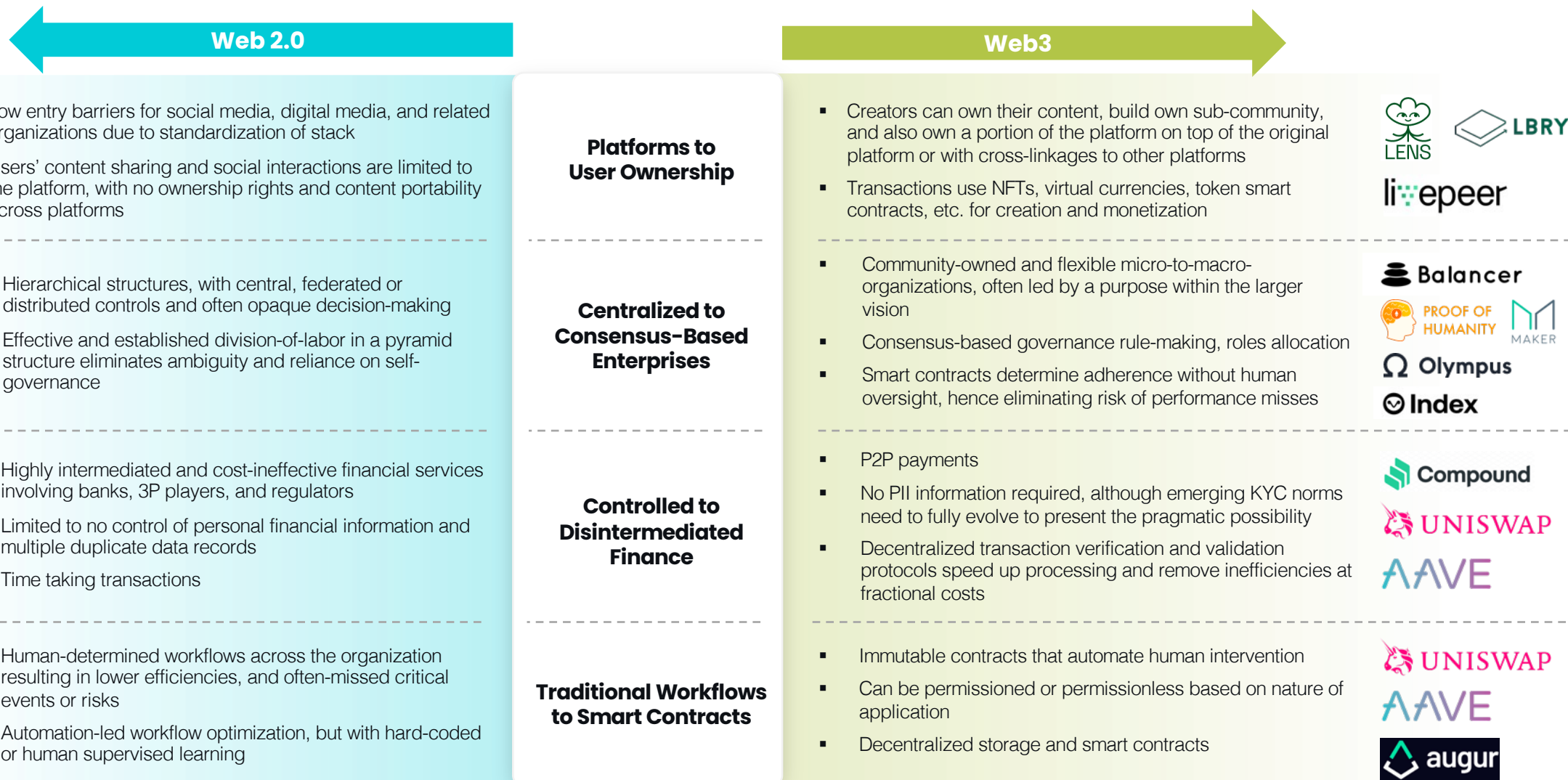
Security Solutions

Consensus Protocols

Scaling Solutions

Sources: NASSCOM-Zinnov analysis.

Web3 leverages peer-to-peer connect and decentralized infrastructure to deliver the use cases that have generally been centrally controlled, with opaque execution, in Web 2.0

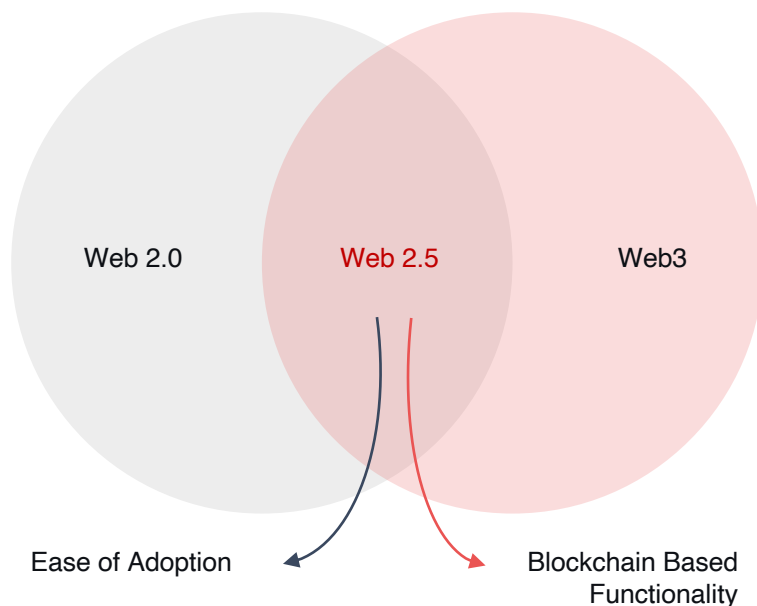


Sources: NASSCOM-Zinnov analysis

Transition to Web3 solutions will require “near-term” adjustments to full decentralization and permissionlessness in order to drive mass adoption, creating a “Web 2.5” solutions space

Web 2.5 will grow in the medium-term as the developer mindshare shifts towards “building for mass blockchain adoption” from the aim of “building to prove the utility of blockchain”.

Web 2.5 Enables Less-disruptive Adoption of Blockchain-Based Web Services



01

Ease of transition for non-crypto users

Users with limited crypto nativity or inclination to own and manage private cryptographic keys, will find Web 2.5 a smoother shift

02

Graduated shift to better manage scale-up

Developers can leverage existing Web 2.0 applications with API-dApp interface, eliminating sudden infrastructure obsolescence

03

Easier forward policy-framing

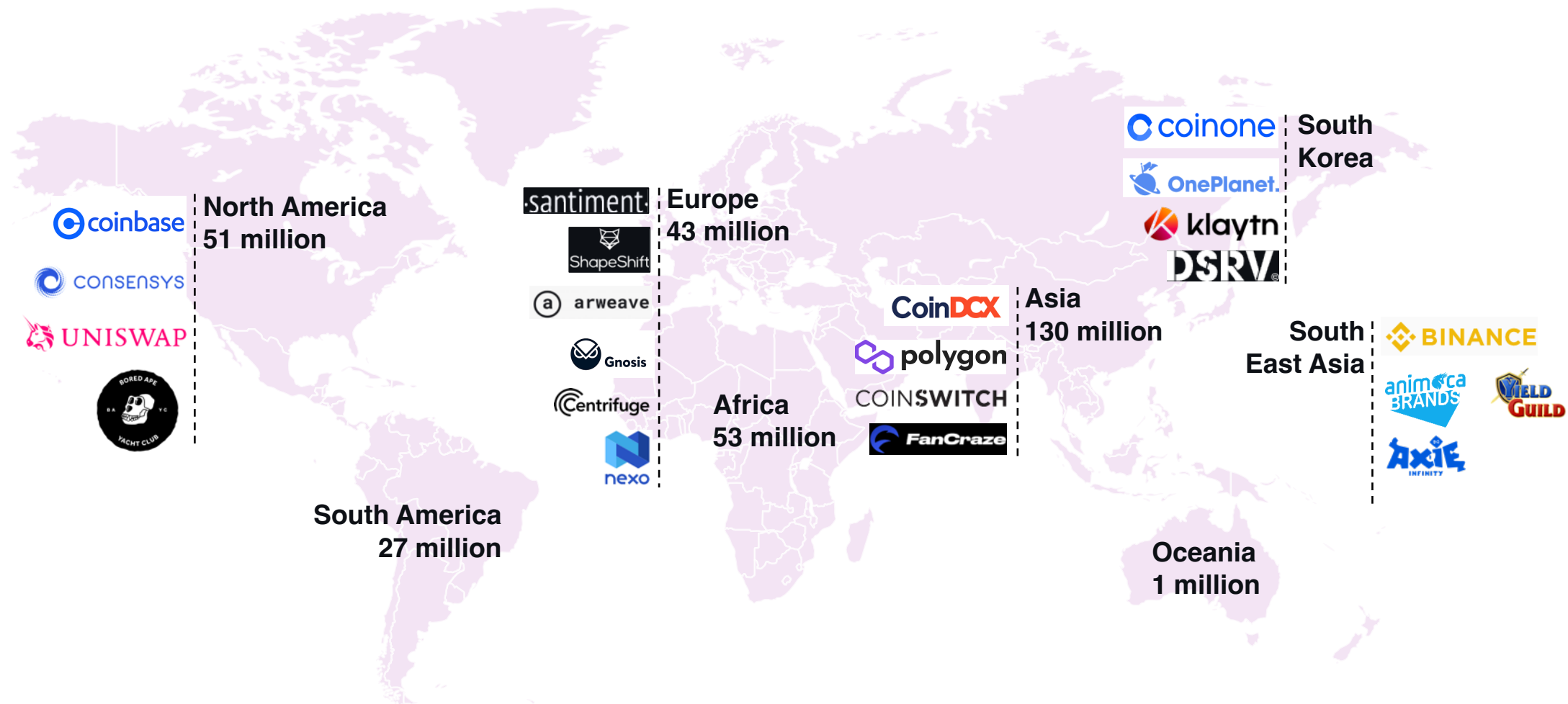
Policy makers can observe the workings of Web 2.5 to recognize the benefits of the technology, and create relevant forward-looking policies for Web3



Indian's Web3 Market Landscape

- Global Cryptocurrency Adoption
- Comparative Positioning of Select Countries in Web3 Adoption
- Growth of Indian Web3 Startups
- Location Distribution of Indian Web3 Startups
- Technology Focus of Web3 Startups
- Web3 Development by Application Areas

With 320 Mn+ active users worldwide, and growing, the cryptocurrency surge worldwide has set the stage for accelerated Web3 adoption



Sources: Chainalysis, Triple-A Crypto ownership data, NASSCOM-Zinnov analysis

Global response to Web3 is still shaping, and India's favorable positioning in economic, demographic, and technology adoption factors position it well to become one of the highest growth Web3 markets

| Countries | GDP Growth Rate 2021 | 5-Year Average GDP Growth Rate 2022-26(E) | Internet Penetration Rate 2020 | Millennials and Gen Z as % of Population 2030(E) | Active Crypto Users as % of Population April 2022 |
|----------------------|-------------------------|---|--------------------------------------|--|---|
| Asia | | | | | |
| India | 8.7% | 6.7% | 43% | 77% | 2% |
| Singapore | 7.6% | 2.7% | 92% | 55% | 5% |
| South Korea | 4% | 2.7% | 97% | 51% | 10% |
| Indonesia | 3.7% | 5.7% | 54% | 74% | 4% |
| Vietnam | 3.8% | 6.9% | 70% | 70% | 20% |
| UAE | 2.2% | 3.1% | 100% | 80% | 2% |
| Europe | | | | | |
| United Kingdom | 7.4% | 2.3% | 95% | 60% | 6% |
| European Union | 5.4% | 2.1% | 85% | 56% | 3% |
| North America | | | | | |
| United States | 5.7% | 2.5% | 91% | 63% | 14% |
| LATAM | | | | | |
| Brazil | 5% | 2% | 81% | 68% | 8% |
| Africa | | | | | |
| South Africa | 4.9% | 1.5% | 70% | 80% | 12% |

India: A Potential High-Growth Web3 Market

Doubling of Indian Economy by 2030 –

- ~7% annual real GDP growth rate expected through the 5-year 2022-26 period, one of the highest
- \$6 Tn+ economy by 2030
- 50% households in upper-middle and high-income groups by 2030

Internet and 5G to Drive Digital Adoption –

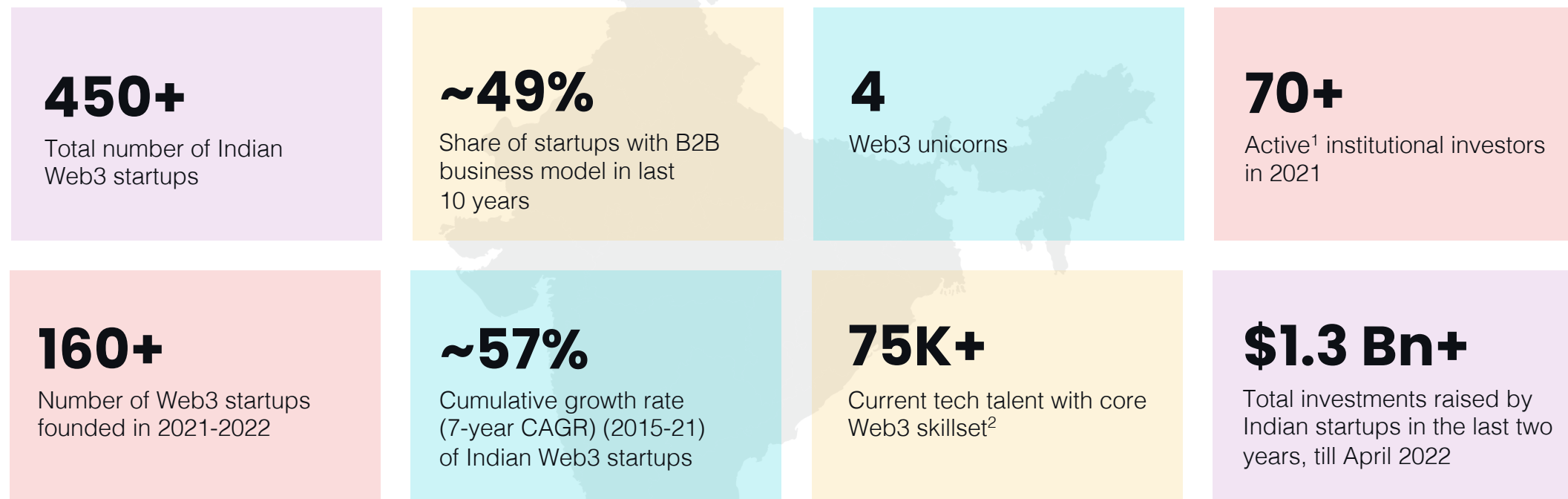
- 900 Mn active internet users in India by 2025, at ~45% CAGR, from 750 Mn+ in 2021
- 500 Mn 5G subscriptions anticipated by 2027

Potential Web3 Target Market –

- 2nd in Chainalysis report on cryptocurrency adoption
- #1 Global adopter of DeFi in terms of value received on-chain, adjusted for PPP
- 77% of population to be Millennials and Gen Z by 2030 – digital-savvy, and seeking greater transparency and autonomy in transactions

Sources: IMF, The World Bank, Population Pyramid, Triple-A, Economic Times, Chainalysis, NASSCOM-Zinnov analysis

Snapshot of India's Web3 startup ecosystem in 2022



¹Active investors are investors who have made at least one investment in the calendar year,

²Core Web3 skillset includes blockchain network and protocol design, building smart contracts, dApps, and crypto wallets. An expansive Web 3.0 (semantic web) skillset, further, includes AI/ML, AR/VR, IoT, and Big Data & Analytics, and is currently at 900k+ at the time of writing

Sources: NASSCOM-Zinnov analysis

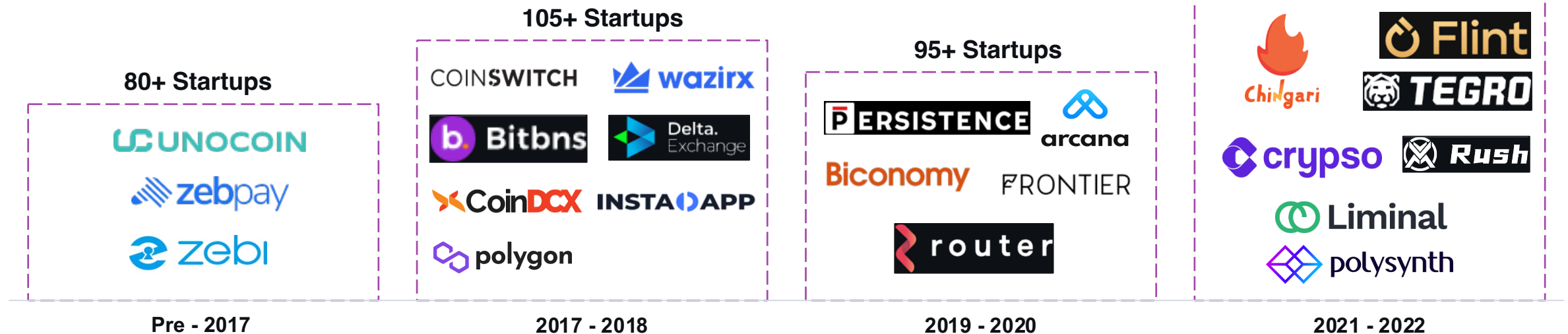
Web3 startups in India have grown ~6X+ since 2015, as investments soared in since the start of 2020, reaching \$1.3 Bn+ by Q12022

Total startups till Q12022: **450+**

Total investment in last 2 years till Q12022: **~\$1.3 Bn**

Total funding for new-age incubators, till Q32021: **\$587 Mn**

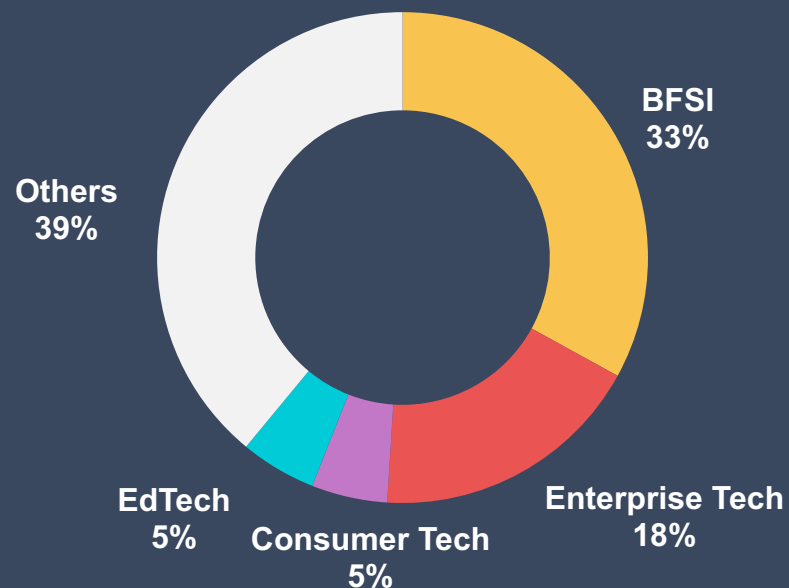
Core Web3 tech¹ talent: **75K+**



¹Core Web3 skillset includes blockchain network and protocol design, building smart contracts, dApps, and crypto wallets. An expansive Web 3.0 (semantic web) skillset, further, includes AI/ML, AR/VR, IoT, and Big Data & Analytics, and is currently at 900k+ at the time of writing
Sources: Zinnov CoNXT Research & Analysis

82% of Indian Web3 startups are located in Tier I cities, but the Tier II ecosystem is rapidly growing across all Web3 application areas, similar to the Tier I ecosystem

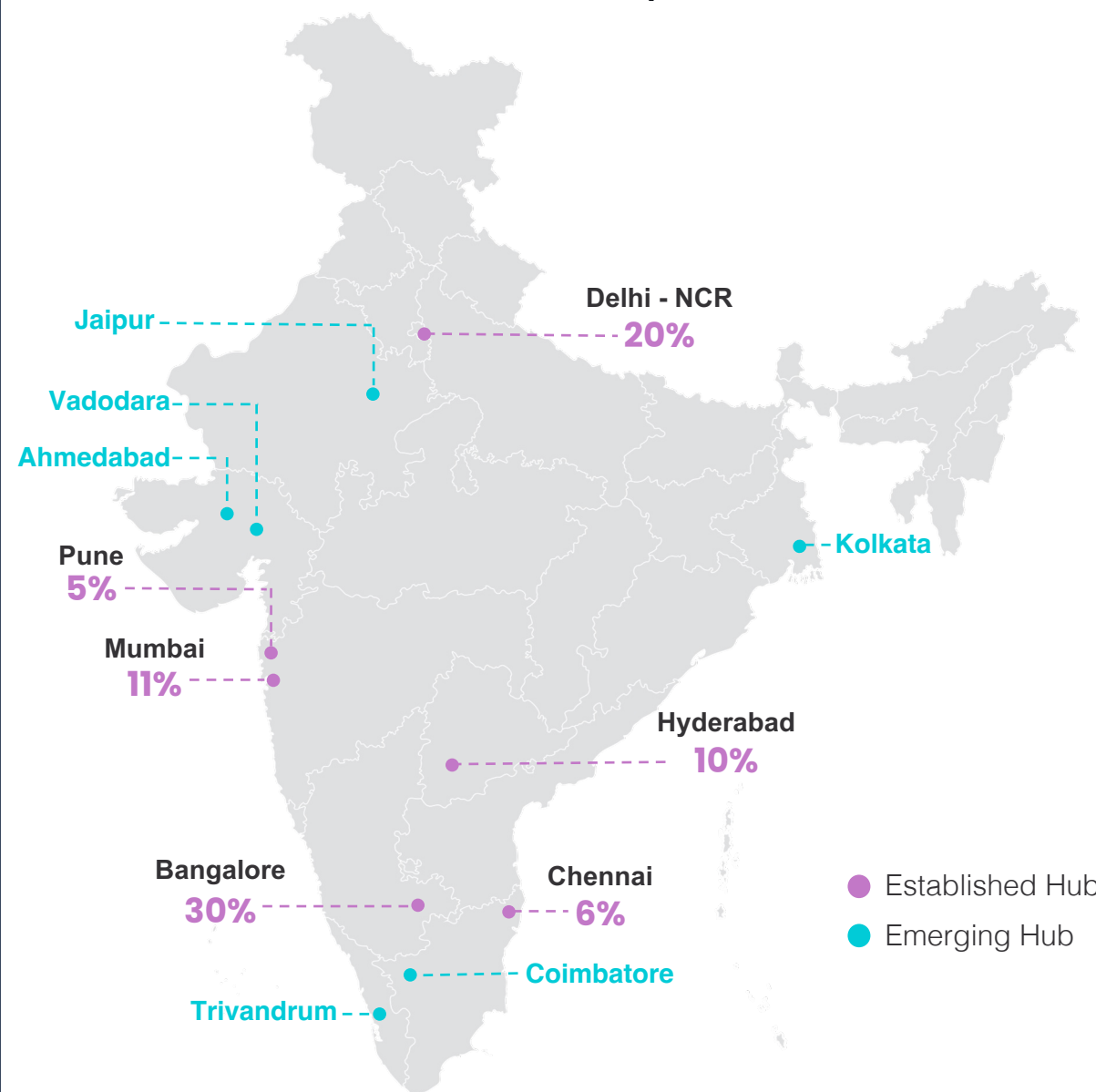
Focus Areas for Indian Web3 Startups



- 80%+ Web3 startups in Tier I locations (established hubs), and 50%+ in Tier II/III locations (emerging hubs) are building finance and enterprise tech solutions, respectively
- ~60% of the Indian Web3 startups have already expanded their footprint outside India with HQs spread across the world, delivering global products from India

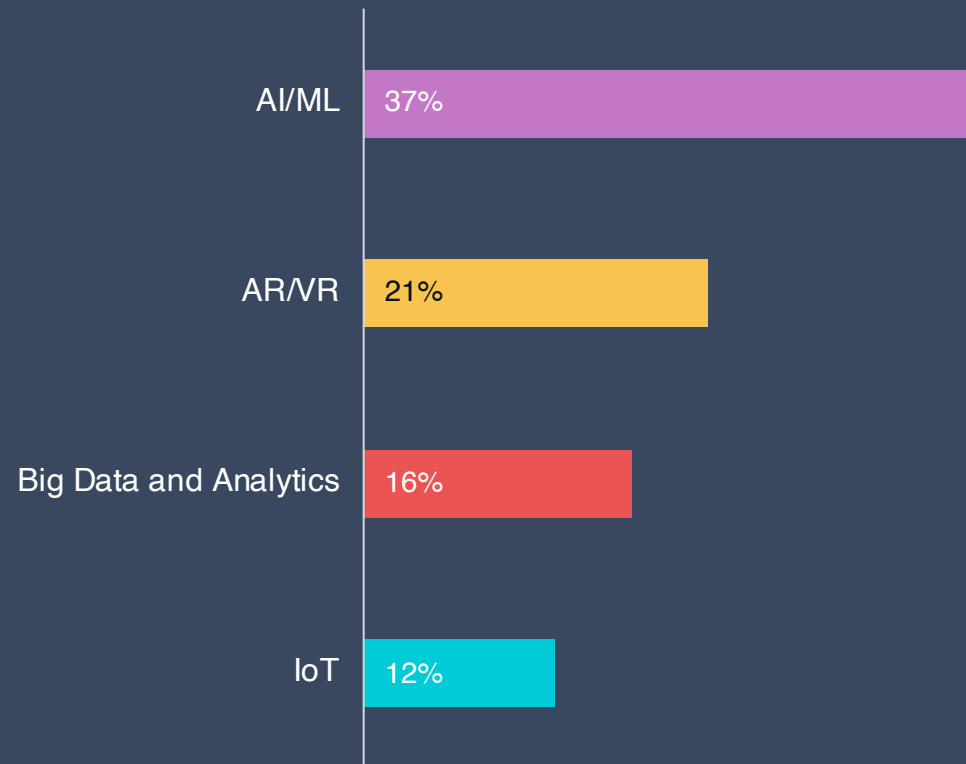
Sources: : Zinnov CoNXT Research & Analysis

Location Distribution of Web3 Startups in India, Q12022



Startups focused on other emerging technologies are also increasingly integrating blockchain solutions in their offerings

Adoption of Blockchain by Startups Focused on Other Emerging Technologies



↑ 82%*

- **100+ startups** are focused on blockchain-based development
- **AI/ML** installed talent base in India, at 300-320K, is highest amongst all emerging tech domains
- **AI** is core to smart contracts and mining of data on blockchains

↑ 54%*

- **50+ startups** are focused on AR/VR-enabled blockchain solutions
- **GamingTech** is the most prominent use case, integrated with a crypto wallet frontend

↑ 117%*

- **60+ startups** are focused on deploying big data and analytics on data captured each time a smart contract is invoked and historical data needs to be analyzed for performance insights

↑ 85%*

- **25+ startups** are focused on IoT-blockchain integration so as to capture machine data and data from smart contract based machine-2-machine communication




*Total growth rate between 2017 and Q12022
Sources: Zinnov CoNXT Research and Analysis

Polygon – A Global Leader in the Web3 Space – was Envisioned and Created in India

Polygon is a leading blockchain scalability solution with strong roots in India

Polygon was started in 2017 by 3 engineers Sandeep Nailwal, Anurag Arjun and Jaynti Kanani as “MATIC”.

The Layer 2 scaling solution is designed to solve scalability and usability issues that exist in the Ethereum blockchain, without compromising an app’s core decentralized aspect. With its fast & affordable transactions and widespread ecosystem efforts, Polygon has been able to introduce Web3 to large number of people.

| |  |  |  |
|--------------------------|---|---|---|
| | Polygon | Ethereum | BNB Chain |
| Block Time | 2.2s | 13.5s | 3s |
| Cost per Transaction | \$0.02 | \$17.5 | \$0.3 |
| Avg. per Day Transaction | 3.1M | 1.1M | 5.1M |



150+

Hackathons
sponsored in India



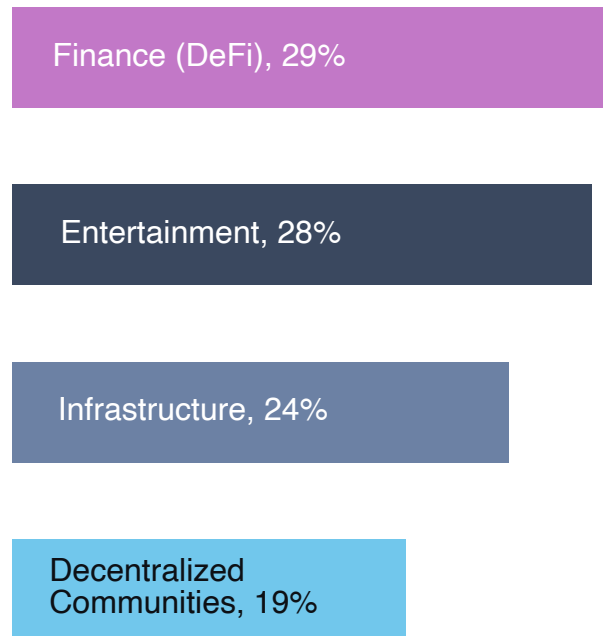
30+

Grassroot communities
launched in India

Sources: Hashed Emergent Research | Nasscom-Zinnov Analysis

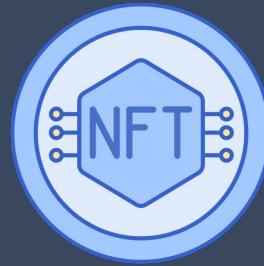
Indian Web3 startups have focused less on purely speculative cryptocurrency trading, instead, are focusing on building diverse Web3 solutions across all major application areas

Focus of India Web3 Startups, by Application Areas



Top Horizontal Use Cases

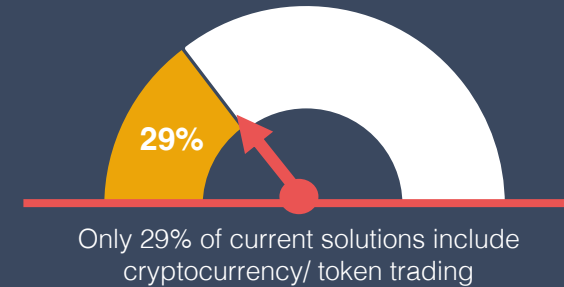
Non-Fungible Token (NFT)



Metaverse



Cryptocurrency Trading is a Subset of Blockchain-Based Solutions



- Minority of Web3 solutions developed globally currently involve cryptocurrency trading
- NFTs and smart contracts are witnessing faster adoption, with growing acceptance of blockchain as a technology to ensure traceable, immutable transactions



Select Case Studies of Indian Web3 Startups

Indian Web3 startup showcase

Entertainment



Finance (DeFi)

INSTAAPP



Decentralized Communities



Infrastructure

PERSISTENCE



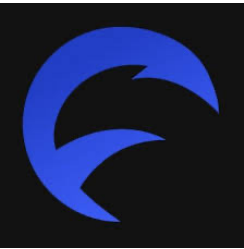
arcana

Biconomy



About the Company

FanCraze is an entertainment company, bringing Web3 to the world of cricket. It creates a unique digital experience for cricket fans by combining gaming and NFTs. On the FanCraze platform, fans can collect cricket-themed NFTs and use them to play games as well. NFTs can be collected by purchasing them on the blockchain. Once purchased, these NFTs belong to the fans in a self-sovereign manner, meaning they can sell them (to a willing purchaser) whenever they desire, directly on the blockchain. In other words, FanCraze has no right to intervene or 'authorize' such a sale or purchase. FanCraze has partnered with notable organizations in the cricketing world, including the International Cricket Council (ICC), IPL teams Chennai Super Kings and Delhi Capital, and players Rohit Sharma, Hardik Pandya, Jasprit Bumrah and Jonty Rhodes.



FanCraze



Founded In

2021



HQ Location

Mumbai, Maharashtra



Core Solution

Cricket NFT Solution



Key Investors

- Tiger Global
- B Capital Group
- Sequoia India
- Coatue
- Insight Partners
- Cristiano Ronaldo

Core Offerings

Cricotos

Cricotos are NFTs that represent video clips of memorable moments from ICC events. This could be a match-winning event or other notable events from a cricket match. The NFT is an 'officially licensed product' of the ICC. As of now, Cricotos are available from a variety of tournaments, including the ICC T20 Men's World Cup 2021, the ICC Men's Cricket World Cup 2019, the ICC Women's T20 World Cup 2020, the ICC Men's Cricket World Cup 2011. Available Cricotos represent a number of teams, including India, England, Bangladesh, Pakistan, Sri Lanka.

FanCraze Flash

FanCraze Flash is an NFT based fantasy sports game. It is different from regular fantasy sports games, in that players can only select those cricketers whose NFTs they have purchased, and they possess. The NFTs used in FanCraze Flash are called 'Flash NFTs' and are different from Cricotos. Flash NFTs are like 'player cards' and they represent a cricketer. Just like regular fantasy sports games, players win on the basis of the performance of their selected team in real life. Rewards for winning include cash prizes, and real-world experiences (sometimes) like tickets to a match.

Sources: Hashed Emergent Research | Nasscom-Zinnov Analysis

Future Plans

More games, NFT collections and eventually, the Metaverse

FanCraze recently closed a \$100 million funding round, led by Insight Partners. In addition to FanCraze Flash, FanCraze plans to launch 3 more NFT-based games in the near future. It also plans to launch new NFT sets and collections. In the long term, the company plans to integrate its offerings with the 'Metaverse', including the development of digital stadiums and cricket academies.

About the Company

Loco is an entertainment company that has built a livestreaming platform for eSports and gaming. The culture of livestreaming games, and watching gamers' livestreams, took off in India during the pandemic-induced lockdown. Loco's platform taps into this nascent and growing market, with a specific focus - the platform has been built with an Indian audience in mind ('India Ka Apna Gaming Platform'). Since June 2020, the platform has seen a 48x growth in live watch hours. Earlier this year, Loco partnered with FIFA to livestream the FIFA eSports World Cup to Indian audiences. Most recently, Loco has launched 'Loco Legends' a dedicated NFT marketplace for eSports superfans. The company's ultimate vision is to democratize gaming entertainment, by giving every shot at becoming a gaming superstar.



Loco



Founded In

2017



HQ Location

Bengaluru, Karnataka



Core Solution

Play-to-earn gaming solution



Key Investors

- Hashed
- Krafton Inc.
- Lumikai Fund
- Hiro Capital
- Axilor Ventures
- 3one4 Capital
- North Base Media

Core Offerings

Livestreaming platform

Loco's core offering is its livestreaming platform. The platform brings together gamers and audiences from across India, and across different genres. While livestreaming their game play, gamers can have live interactions with their audiences via audio communications and text chat. The platform also hosts eSport tournaments. This creates an opportunity for the rise of eSports and gamer-based fandoms. Some of the most popular games that are livestreamed on Loco are: GTA 5, Ludo, Fall Guys, Among Us, Minecraft, FIFA and Call of Duty.

Loco Legends NFT Platform

Loco Legends is India's first NFT platform dedicated for eSports superfans. The platform offers eSport player-based NFTs that can be purchased by audience and fans. These NFTs can then be used by fans to participate in tournaments of their own. Given that these NFTs are on the blockchain, they can also be permissionlessly traded as well.

Sources: Hashed Emergent Research | Nasscom-Zinnov Analysis

Future Plans

Loco recently raised \$42 million in funding, which it plans to use to further develop its Web3 integration, with products and services that empower the gaming community and create one of its kind experiences for fans.

About the Company

Lysto is an entertainment sector company, focused on using the blockchain to create 'on-chain credentials' for gamers. The idea behind Lysto is that as the Web3 gaming ecosystem evolves and matures, the need for true interoperability between different games will be felt in earnest. In such a situation, it will be imperative to have a standardized means of measuring a gamer's credentials. Such a standard will allow different games to tap into a gamer's history of performance across games, and to rank them in their own game, using the same 'common language'. Simply put, in a future where there are many Web3 games being played on the blockchain, Lysto will ensure that a gamer can build a profile of performance that can be seamlessly migrated from one game to another.



Lysto



Founded In

2021



HQ Location

Bengaluru, Karnataka



Core Solution

Gamer persona
unification and NFTaaS



Key Investors

- Hashed Emergent
- BeeNext
- Tiger Global
- Better
- Square Peg
- Distributed Global

Core Offerings

Unified and standardized gamer persona across games

Lysto's core offering is a combination of the 'Proof of Play Protocol (PoPP)' and the 'Passport'. PoPP refers to the standardized on-chain credential system being built by Lysto. Given that the blockchain stores data in a verifiable and incorruptible manner, the information contained in the PoPP will also be independently verifiable (i.e. any will be able to verify a player's gameplay history by unpacking the contents of the PoPP) and incorruptible. Based on the standards developed by Lysto, individual games and tournaments will be able to issue 'digital credentials' to gamers as proof of their participation in a tournament or a game. This will drive the standardization of gamer reputation across the industry. The 'Passport' will allow gamers to showcase their on-chain identity and credentials (like a social badge of sorts) to other gamers in the community, as well as to other games.

NFT-as-a-service

With its NFT stack, APIs and infrastructure, Lysto enables anyone with minimal or no knowledge of blockchain technology to integrate NFT solutions with their digital offerings.

Sources: Hashed Emergent Research | Nasscom-Zinnov Analysis

Future Plans

Lysto has raised \$3 million in November 2021, and \$12 million in August 2022 from global investors. They plan to use these funds to develop their core offering of PoPP and Passport, and to build a basic building block of gamers' profiles in the future. With this, Lysto plans to build the world's largest gaming community.

About the Company

GuardianLink is a no-code NFT platform which allows users to mint, publish and manage the NFTs, without writing a single line of code. The company champions the idea of 'emotional commerce', which is based on the philosophy that everything under the sun has value, when it has emotion attached to it. By automating the development of NFTs, GuardianLink allows anyone to buy into this vision, and create NFTs out of things they believe have emotional value and significance. The offerings of GuardianLink illustrate the advent of a new marketplace of concepts, made possible by NFTs and blockchain technology. GuardianLink has integrations with a number of trusted Web3 wallets, and it allows creators to publish their NFTs across multiple marketplaces instantly.



GuardianLink



Founded In

2021



HQ Location

Bengaluru, Karnataka



Core Solution

No-code NFT platform



Key Investors

- Kalaari Capital

Core Offerings

NFT and NFT marketplace development

GuardianLink's no-code launchpad empowers users to mint NFTs and build their own NFT marketplace. NFTs minted on GuardianLink have an 'interoperable provenance authentication' feature, which allow them to be ported to any marketplace or blockchain, to find forward buyers. GuardianLink has also integrated a zero-knowledge proof (ZKP) technology-based layer 2, which ensures that users incur no gas fees for minting NFTs on the platform. In the past GuardianLink has facilitated the sale of Amitabh Bachhan's NFT collection, where purchase of select NFTs also entitled the buyer to a signed physical copy of vintage Amitabh movie posters.

Anti-counterfeiting software

To ensure monitoring of NFT duplicates or rip-offs, GuardianLink has developed a software which monitors to web to identify counterfeit NFTs and notifies the original creator. This software has been dubbed a 'Legitimacy Protocol' and is called 'Anti.Rip AI Spyder Technology'.

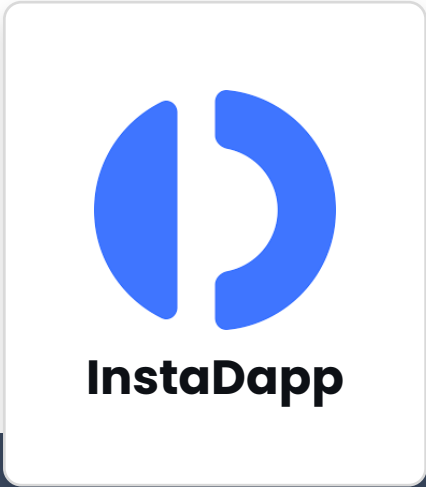
Sources: Hashed Emergent Research | Nasscom-Zinnov Analysis

Future Plans

Guardianlink recently launched Cricket NFT game called Jump Trade and is now in the process of building 2 car racing games. The company also plans to contribute to the development of the Metaverse, where its brand and artist partners' NFTs can be integrated.

About the Company

InstaDapp is a DeFi application that leverages the interoperability of smart contracts to turn other DeFi protocols into 'money legos'. It allows users to create custom transactions, which make use of multiple DeFi protocols at once. Analogizing with existing financial market entities, InstaDapp is best understood as an application that allows a user to draw a loan from one bank, use that money to make a trade in public markets at an exchange, draw another loan from another bank, and repay the first loan - all in one transaction (or to come up with some other innovative transaction). The application is a perfect example of the permissionless, composable and global nature of Web3. InstaDapp was founded by two brothers - aged 19 and 21 at the time - in 2019. The founders had been following developments in the DeFi space and realized that there was scope for the development of a dApp that could integrate the functions of other dApps. Consequently, the founders built InstaDapp autonomously, without ever having to seek any approvals from the dApps they were plugging together, or the L1 platform itself.



Founded In

2018



HQ Location

Hyderabad, Telangana



Core Solution

DeFi aggregator platform



Key Investors

- Standard Crypto
- Pantera Capital

Core Offerings

DeFi Smart Accounts

InstaDapp allows users to create 'DeFi Smart Accounts'. These refer to accounts that store funds and deploy those funds on the basis of a user-inputted, customized investment strategy. Given that this account exists on the blockchain, it is entirely trustless, meaning InstaDapp has no custody of the funds - the user has direct custody of the funds. Additionally, the autonomous nature of blockchain-based smart contracts makes it so that the user-inputted investment strategy is executed automatically, without requiring any approval from InstaDapp. A typical 'investment strategy' created by an InstaDapp user may integrate transactions at many different, independent DeFi protocols (lending, borrowing, saving, investing protocols), a feat made possible by the composability of Web3 code. InstaDapp ensures that these multiple transactions can be executed at once. Simply put, InstaDapp provides the infrastructure to create custom strategies for participating in DeFi and enables users to develop and execute these strategies in a permissionless and autonomous manner.

Sources: Hashed Emergent Research | Nasscom-Zinnov Analysis

Future Plans

Progressive decentralization of the InstaDapp protocol

With the launch of its INST token last year, InstaDapp has laid the foundation to build a DAO which will be used to govern the protocol's future. The tokens represent governance rights over key decisions about InstaDapp. The distribution of these tokens is a move to improve the state of decentralization of the protocol's governance and management. The distribution of INST tokens is mainly among community members (55%), team members (~24%) and investors (~12%), while remaining are allocated to future team members, ecosystem partners and advisors.

About the Company

Polysynth is a DeFi protocol on Ethereum and Polygon, that provides access to options trading, without the associated complexity and knowledge needed to trade options. Polysynth leverages smart contracts to abstract away the complexities of underwriting options, pricing options, juggling strike prices. Instead, it replaces this process with a simple deposit and auto-compounding earning ‘vault’, which executes options strategies automatically.



Polysynth



Founded In

2021



HQ Location

Singapore



Core Solution

Synthetic asset protocol



Key Investors

- Jump Capital
- DeFi Alliance
- Hashed
- LedgerPrime
- QCP Capital
- Morningstar Ventures
- LUX Capital
- CSP DAO

Core Offerings

DeFi Options Vault

While options trading is considered as one of the best investment due to its potential to deliver high returns, it is a highly complex arena to understand which require advisors, time to monitor the market, and manually deciding the strike prices. Polysynth has launched the DeFi Option Vaults (DOVs) product through which users can invest in options derivatives offering irrespective of the amount of knowledge they have regarding exercising options. DOVs allow users to simply stake assets into vaults which are then deployed into option strategies. This has been made possible via smart contracts which allows execution of option strategies, collateral management, price discovery, liquidation of assets, in a seamless, scalable and transparent manner without the need of an intermediary.

Sources: Hashed Emergent Research | Nasscom-Zinnov Analysis

Future Plans

Polysynth plans to launch Leveraged Options Vaults, which will allow traders to leverage their options positions by up to 5x. The team is also testing an innovative product - Perpetual Futures Options.

About the Company

SuperTeam is a community driven project which is focused on building the talent layer for Solana ecosystem. The company envisions to democratize various job opportunities and projects across the globe and make it accessible to the talent pools across various skills and functions.



SuperTeam



Founded In

2021



HQ Location

Online



Core Solution

Service DAO for Solana project



Key Investors

- Solana
- FTX

Core Offerings

Decentralized and permissionless working ecosystem

SuperTeam is organized as a co-operative of creatives, operators, and investors which enables trustless and permissionless collaborations. This happens by building community, tokenizing work and instant rewards with increased ownership. The DAO consists of rewarding bounties for the community to complete which also acts as the proof-of-work and helps the community members to receive grants, join fellowships or full-time projects. The members are mostly compensated in tokens.

Sources: Nasscom-Zinnov Analysis

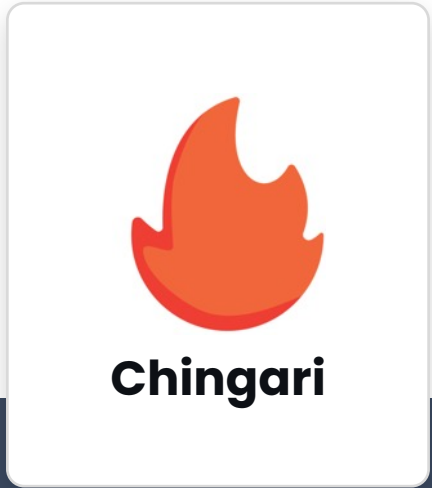
Future Plans

Onboarding people working in Web 2.0 onto Web3

SuperTeam DAO plans to drive adoption of Web3 by onboarding and educating people in Web 2.0 space regarding the benefits and skills required in this space. To accomplish this, the members of SuperTeam DAO have launched project Ground Zero to help people learn about the basics of the crypto ecosystem for free.

About the Company

Chingari is a social app for creating and sharing short video content. The company started as a Web 2.0 model and has made a shift to Web3 ecosystem to empower the creators with a financial and community-level engagement opportunity. Chingari has 130+ million content creators in more than 15 languages with over 5 Mn daily active users.



Founded In

2018



HQ Location

Bengaluru, Karnataka



Core Solution

Short video sharing platform



Key Investors

- Republic Crypto
- Solana Capital
- Galaxy Digital
- Valor Equity Partners
- Alameda Research

Core Offerings

Create-to-earn model

Creators are rewarded for creating and uploading the content on the platform as \$GARI tokens which can be used for enabling various feature products such as setting up ecommerce space and NFT creations in the app or can be converted into fiat money. The company also incentivizes its fans and app users who are active on Chingari to ensure a healthy two-way engagement. Chingari has also introduced a social staking model through which users can use their \$GARI tokens to stake on their favorite content creators to eventually earn a share from the creators' potential future earnings.

Sources: Nasscom-Zinnov Analysis

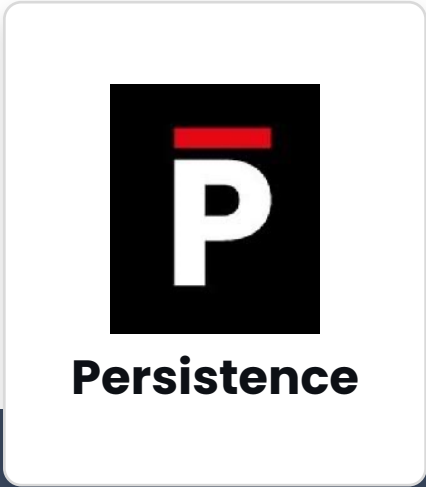
Future Plans

Fostering and growing the creator economy

Chingari looks forward to take the user experience and their interaction and engagement with their favorite creators on to a next-level. Recently, the company launched the first-ever video NFT marketplace named “Creator Cuts” enabling creators to mint video NFTs. Further, the NFT owners will get 10% of the daily income in \$GARI tokens earned by the creator on the engagement they receive on their videos on the app.

About the Company

Persistence is a Web3 infrastructure company, focused on solving a limitation in Proof-of-Stake networks: locked liquidity. 'Proof-of-Stake' networks are blockchains whose consensus mechanism relies on the 'staking' of assets. People running 'nodes' on such a blockchain 'stake' assets into a pool, in exchange for the privilege of becoming node operators. These staked assets are best understood as a form of collateral or security deposit, since they are subjected to reduction or being 'slashed' if a node misbehaves (i.e. tries to break the blockchain's consensus protocol). Once 'staked', these assets - which would otherwise have been liquid - get 'locked in' for a period of time. Persistence has developed infrastructure that unlocks the liquidity of these staked assets. It has developed its own specialized layer 1



Founded In

2019



HQ Location

Singapore



Core Solution

Liquid staking protocol



Key Investors

- Arrington XRP Capital
- AU21 Capital
- Woodstock Fund
- ZBS Capital

Core Offerings

pStake Finance

In order to create liquidity for staked assets, Persistence has developed pSTAKE, a 'liquid staking' protocol. Instead of staking directly to a node, users may choose to stake via pSTAKE. When doing so, users are issued 'stkAssets' represent the locked staked assets. stkAssets are liquid and can be used in various DeFi protocols to generate yield.

Audit.One

Audit.One is the validator arm of Persistence. It operates 'nodes' on Proof-of-Stake networks and contributes to the functioning of a variety of PoS blockchains, including Polygon, Solana, Cosmos and Osmosis. In practice, Audit.One 'stakes' assets in these blockchain networks and performs operations as a node to bring the network to consensus. Users of most blockchain networks need to pay a usage fee ('gas fee') to run operations on the blockchain. The fees paid by users are collected and distributed amongst validators, since validators maintain the equipment ('nodes') that actually perform the computation required. Audit.One acts as such a validator on various networks, and thereby, generates revenue for Persistence.

Sources: Hashed Emergent Research | Nasscom-Zinnov Analysis

Future Plans

Further develop its ecosystem

Persistence, in and of itself, is also a specialized layer 1 blockchain. In the future, the company plans to further decentralize this blockchain. It also plans to incentivize builders to build more applications on the Persistence chain. Additionally, plans are also being developed to increase the use cases and utility of stkAssets, and its utility in DeFi protocols.

About the Company

Biconomy is an infrastructure solution, that aims to make Web3 more accessible and affordable by reducing the complexity associated with paying transaction fees ('gas fees') for operating applications on the blockchain. Biconomy enables the possibility of zero-fees transactions, with its software infrastructure. It is a multi-chain, plug-and-play relayer protocol which holds the potential to drive the adoption of Web3 by improving the user experience.



Biconomy



Founded In

2019



HQ Location

Singapore



Core Solution

Multichain relayer infrastructure network



Key Investors

- Mechanism Capital
- Woodstock Fund
- DACM

Core Offerings

Better user experience

Transaction fees for operating applications on blockchains create a negative end user experience, as users are required to pay fees for each transaction. Biconomy leverages the concept of 'meta-transactions', allowing dApp developers to sponsor transaction fees for their users. This helps in onboarding the users in a seamless manner that prioritizes user convenience. Secondly, due to limitations in cross-chain compatibility, it currently takes a long time for funds to be transferred from one blockchain to another. Biconomy solves this problem and enables instant cross-chain transactions, especially the quick migration of funds from layer 2 blockchains to layer 1 blockchains. Biconomy's product Hyphen maintains liquidity on both sides of the inter-chain transactions, and releases funds on the recipient chain, as soon as it receives funds on the sender chain.

Sources: Hashed Emergent Research | Nasscom-Zinnov Analysis

Future Plans

Creating multi-chain solutions for accelerating Web3 adoption

Biconomy has recently added the BNB chain to its Hyphen product, adding to its collection of supported chains: Ethereum, Polygon, Avalanche, Optimism, Arbitrum and Fantom. Biconomy sees Hyphen as the missing cross-chain 'superhighway' network that can connect multiple chains and bring true multi-chain connectivity to the web3 ecosystem.

About the Company

Arcana is a Web3 infrastructure solution, focused on two key aspects: user onboarding and data storage. Arcana provides developers with a wide range of options when it comes to user onboarding, by providing a user authentication framework that can work with traditional user credential methods like Facebook or Gmail login, or with web3 user credential methods like public key-private key pairs. Additionally, Arcana also provides decentralized data storage to developers, allowing them to store their applications' data in servers that are decentralized, and hence immune from a single-point-of-failure or geography-specific threats.



Arcana



Founded In

2019



HQ Location

Bengaluru, Karnataka



Core Solution

Decentralized Storage, Data
Sovereignty & Privacy for dApps



Key Investors

- Republic Crypto
- Digital Currency Group
- Symbolic Capital
- Woodstock
- Fenbushi Capital

Core Offerings

Arcana Auth

Every user when onboarded to an application - be it a Web2 or Web3 application - needs to be authenticated against some registered credentials. In the case of Web2, this authentication is on the basis of a username-password combination, and in the case of Web3 it is based on a cryptographic private key-public key pair. Arcana Auth enables Web3 developers to present both these login and credential options to their users. Additionally, they also provide passwordless login facility as well.

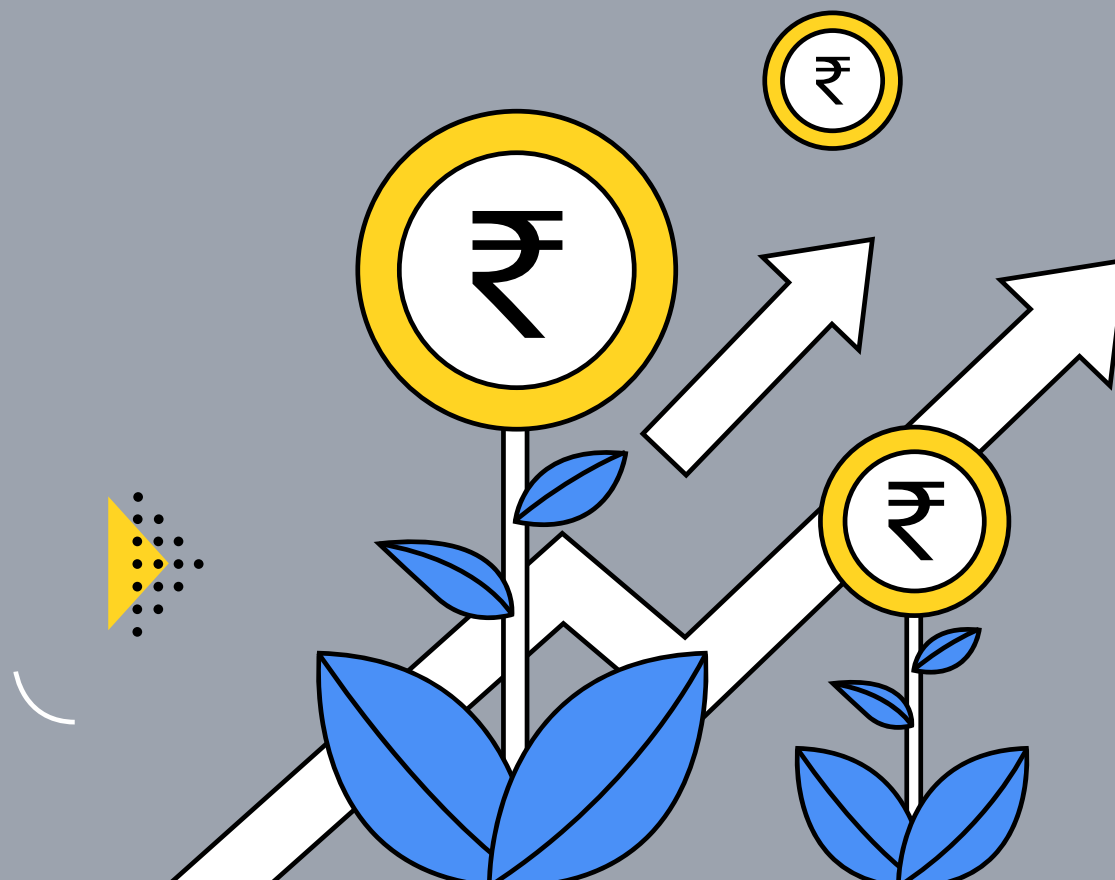
Arcana Store

Arcana Store is a facility provided to developers, whereby they can store their applications' data in a decentralized manner. Data is split up into small chunks and stored on multiple nodes, across a wide geography. Developers are also given the option of choosing a particular geography where they would like their application's data to be stored, facilitating legal compliance. Additionally, the service also allows developers to create access controls to the data stored with Arcana, so that developers can define a specific type of user (say, an NFT holder) who would have access to the data stored. Such access controls to data also allows for the creation of privacy-preserving solutions.

Sources: Hashed Emergent Research | Nasscom-Zinnov Analysis

Future Plans

Arcana has recently launched a 'Private NFT' features, whereby users can encrypt the files associated with an NFT to hide them from public view. Additionally, they have also expanded their cluster of nodes and spread them across more regions.

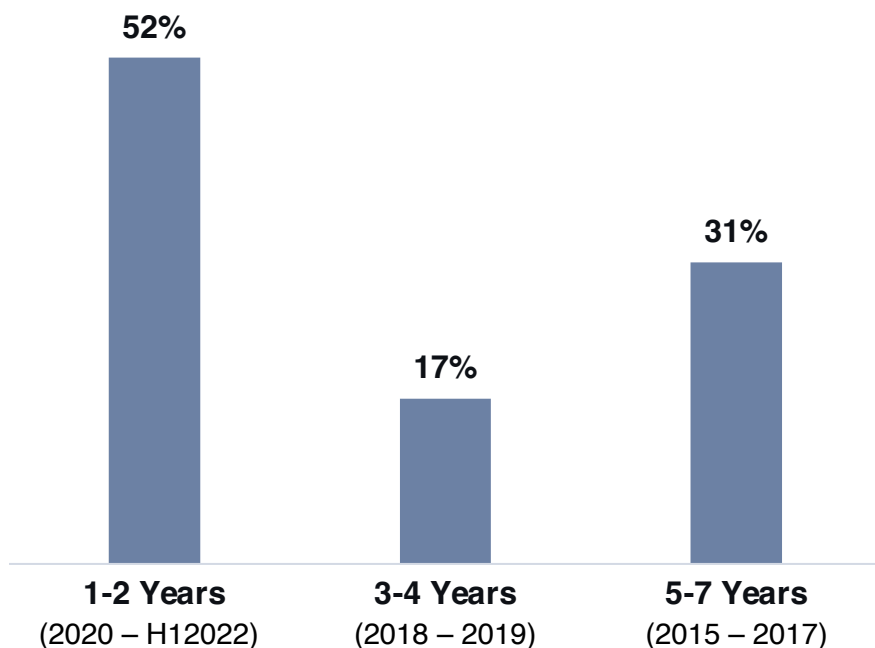


India's Web3 **Investor Trends**

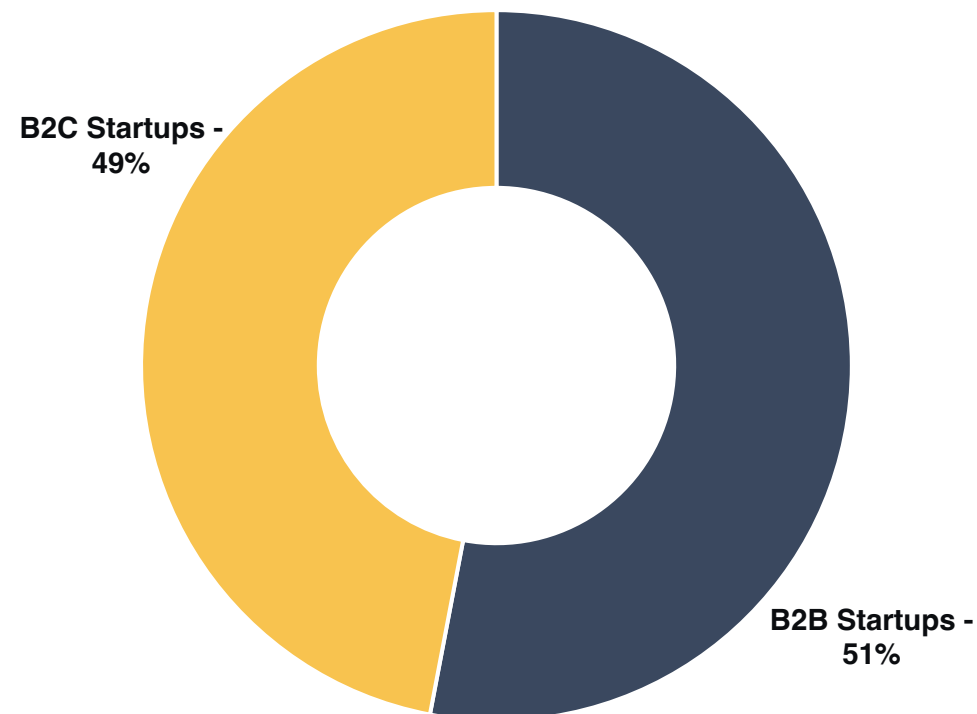
- India Web3 Investment Growth Trends
- Stage-Wise Investment Trends
- Geographic Split of Investors
- Select Investor Profiles

Web3 focus in India grew rapidly during 2015–2017 with the launch of Startup India and Digital India programs, but surprisingly, picked unseen momentum in the midst of COVID-19

Age Distribution of Indian Web3 Startups



Business Model of Web 3.0 Startups



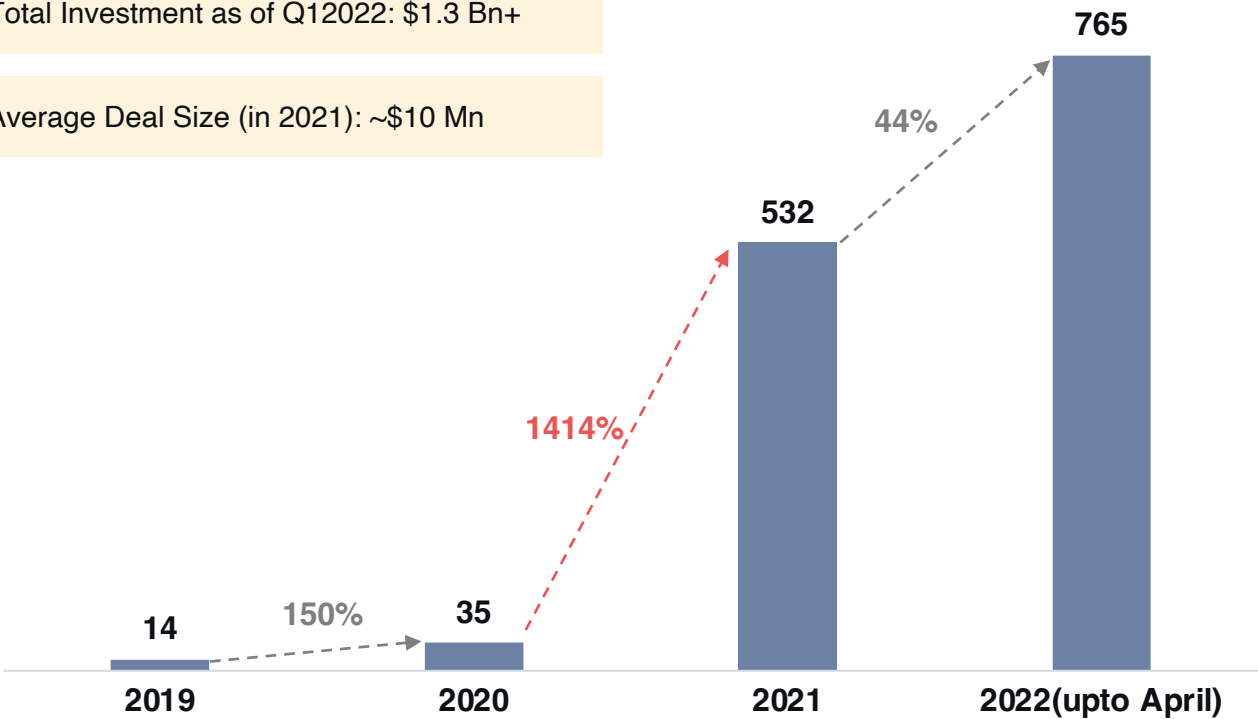
Source: NASSCOM-Zinnov analysis

Investments in India's Web3 ecosystem grew ~37X from 2020, reaching a staggering \$1.3 Bn of cumulative investment till Q12022, and is expected to cross \$1 Tn in the next 10 years

Investments in Indian Web3 Startups,
in \$ Mn

Total Investment as of Q12022: \$1.3 Bn+

Average Deal Size (in 2021): ~\$10 Mn



Sources: US India Strategic Partnership Forum (USISPF), NASSCOM-Zinnov analysis.

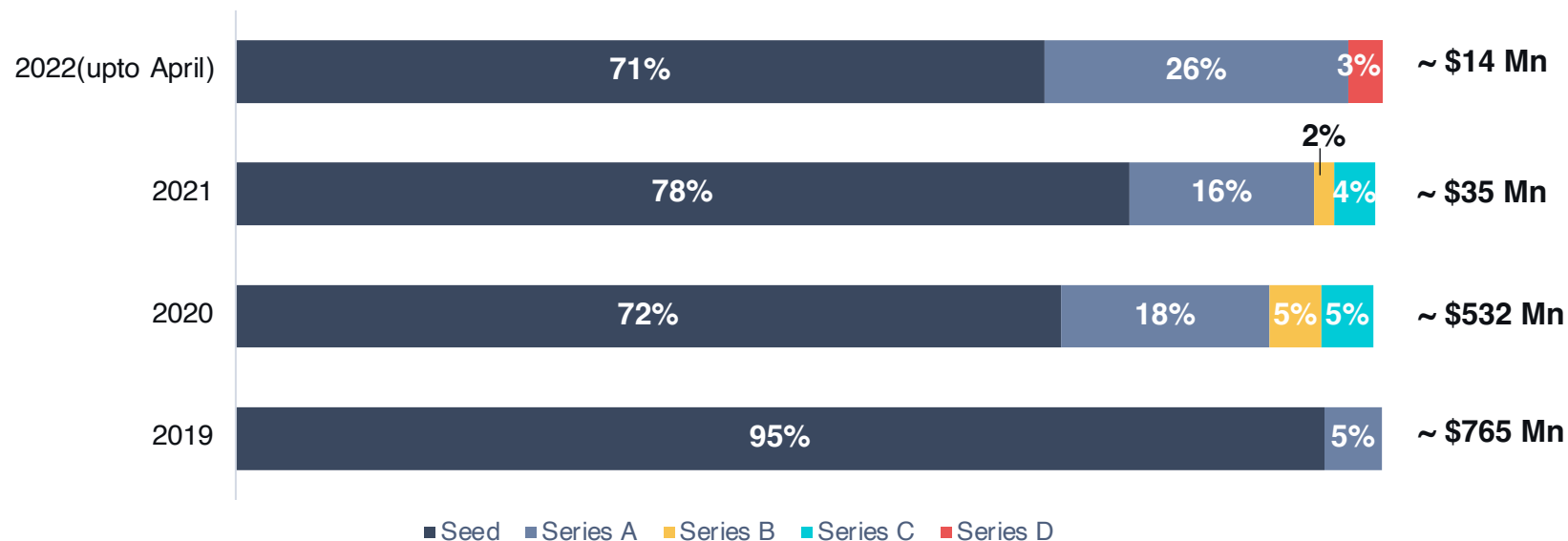


Key Investment Trends

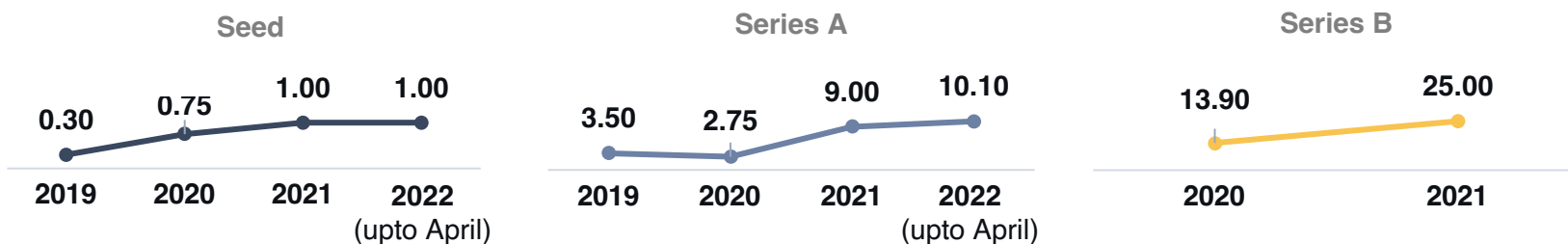
- 01 Investments in Web3 startups have followed the exponential scale-up similar to crypto adoption – **Web3 investments grew 37X since the start of 2020 through Q12022**
- 02 A **\$260 Mn Series C investment in CoinSwitch** drove the total investment to over \$375 Mn in 2021 alone
- 03 **Polygon's \$450 Mn and CoinDCX's \$136 Mn** investment rounds in Q12022 have reinforced the momentum
- 04 An estimate by USISPF research indicates that Web3 can add **\$1.1 Tn of new economic value to the Indian GDP** in the next 10 years

Steady pipeline of seed investment has ensured continued growth of the Indian Web3 startup ecosystem, with investments in the mid-late growth stage growing more in the last two years

Investments Raised by Indian Web3 Startups, by Stage



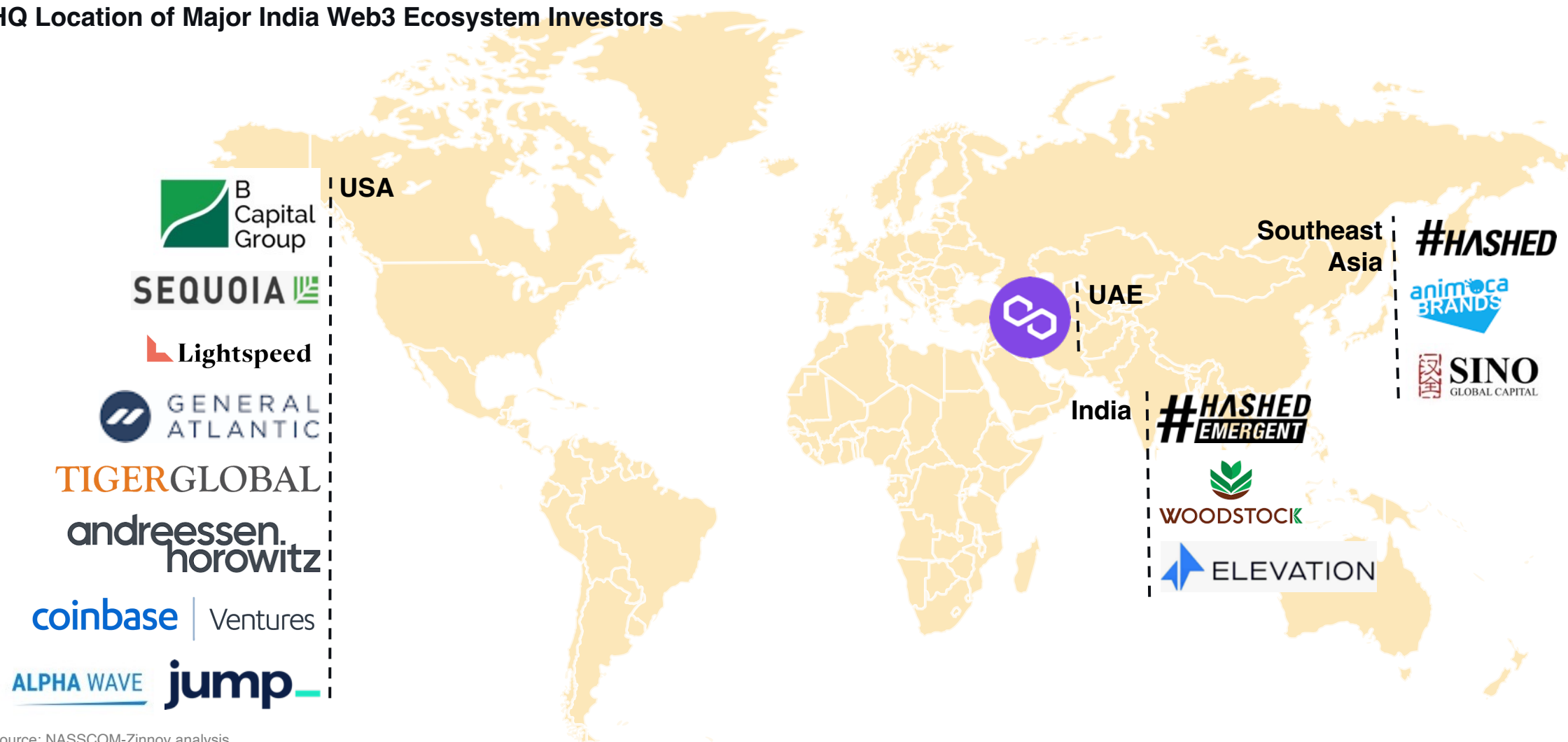
Median Deal Size Across Funding Stages, in \$ Mn



Source: NASSCOM-Zinnov analysis



































Top investors in India's Web3 landscape come from across the world; domestic investors are in line with international ones in committing to promising opportunities

HQ Location of Major India Web3 Ecosystem Investors



Source: NASSCOM-Zinnov analysis

Investors with Indian Web3 Investments

| |  ALPHA WAVE |  animoca BRANDS |  coinbase Ventures |  #HASHED EMERGENT |  Lightspeed |  SEQUOIA |  WOODSTOCK |
|---------------------|--|---|--|--|--|---|--|
| | Alpha Wave | Animoca Brands | Coinbase Ventures | Hashed Emergent | Lightspeed India | Sequoia India | Woodstock |
| Description | Alpha Wave is a global investment company that covers a variety of asset classes, themes, and geographies, ranging from venture/growth to public markets and credit. | Animoca Brands is a global leader in digital entertainment, blockchain and gamification. It also develops and publishes a broad range of assets, including games. | Coinbase Ventures is the venture capital arm of Coinbase - a leading global cryptocurrency exchange. Its stated mission is to create more economic freedom for the world, by developing the Web3 ecosystem. | Hashed Emergent is a dedicated fund, team and brand, established under the Hashed umbrella of companies. It is a pioneer of the 'Web2.5 thesis' and is focused mainly on early-stage investments. | Lightspeed India is the Indian arm of the American VC Lightspeed. The firm invests in early-stage startups including technology or technology-enabled businesses targeting consumers, small businesses and enterprises. | Sequoia India is the Indian arm of American VC Sequoia - one of the pioneers of the VC industry. Sequoia India invests across market sectors and stages. | Woodstock is an India-native Web3 fund, focused on investing in early and growth stage Web3 startups. |
| Location | Bengaluru and New Delhi | Hong Kong (not physically in India yet) | Bengaluru and Hyderabad | Bengaluru | Bengaluru and New Delhi | Bengaluru and New Delhi | Mumbai |
| Focus Stage | Early, Growth, Public | Early, Growth | Early, Growth | Early | Early, Growth | Early, Growth | Early |
| Web3 activity since | 2021 | 2021 | 2018 | 2021 | 2018 | 2020 | 2019 |
| Web3 portfolio size | 20+ | 5+ | 10+ | 15+ | 5+ | 10+ | 25+ |
| Portfolio companies |  polygon  RARIO  PLOTX  revise  liv.club |  polygon  INDI  nCORE games |  polygon  COINSWITCH  CoinDCX  INSTAAPP  Biconomy |  Flint  lysto  glip  Questbook |  INDI  FALCONX  BRAHMA  SOCKET |  COINSWITCH  polygon  MO# |  EPN  Biconomy  arcana |

Sources: Hashed Emergent Research, Tracxn database, Pitchbook and NASSCOM-Zinnov analysis

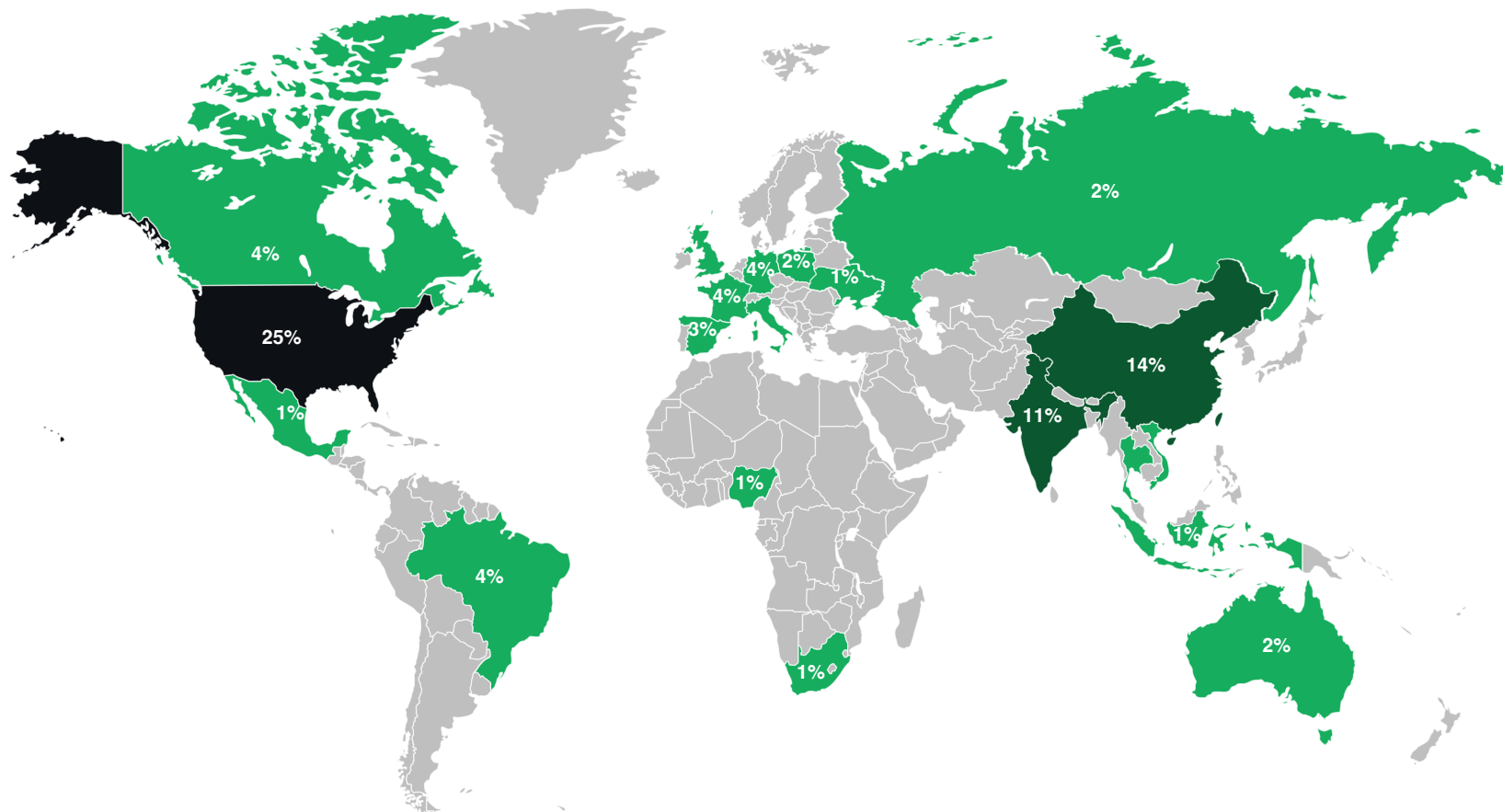


India's Web3 Talent Landscape

- Global Web3 Talent Landscape
- India Web3 Talent Landscape
- Challenges in Scaling-Up India Web3 Talent
- Ecosystem Initiatives to Scale-Up India Web3 Talent

India has the third largest Web3 talent pool worldwide, with the fastest growth rate likely in the next 1-2 years

Global Web3 Talent Distribution, H12022



Key Trends

01

A LinkedIn-OKX¹ study of 2022 blockchain talent worldwide reveals that the total number of LinkedIn users claiming blockchain skills grew by 76% y-o-y by June 2022

02

USA, India, China, the UK, and Singapore have the biggest blockchain talent pools

03

While US is growing at 62%, India's blockchain talent pool is clocking 120%+ CAGR, Singapore at 92% and China at 12%

04

Workforce with finance background accounts for the highest subsegment within the total blockchain talent

¹OKX, previously known as OKEx, is a cryptocurrency exchange based in Seychelles.

Sources: OKX – LinkedIn 2022 Blockchain Talent Report – Web3 Direction, NASSCOM-Zinnov analysis

India's existing, and fastest growing, digital talent pool has incumbent advantages when it comes to expertise development, quick reskilling, and bridging the Web3 demand-supply gap

Digital Tech Talent Pool in India, FY2022 in 000's

Blockchain, 75

AR/VR, 130

IoT, 220

AI/ML/Deep Learning, 310

Big Data and Analytics, 350

India's Digital Talent Advantage

Talent Advantage

2.14 Mn

STEM graduates annually, one of largest globally

5X

growth in digital tech talent, now comprising 30-32% of total tech talent of 3.8 Mn in FY2021

Demand-Supply Gap

21.1%

India's demand-supply gap (as % of supply) is lowest among top tech locations such as USA, China, UK

Upskilling Existing Talent

65-70%

of digital talent gained by India in FY2021 was through reskilling

1st

India's ranking in the tech talent's ability to reskill in newer technologies

Web3 Talent in India – Growth Potential

Blockchain Skill Surge

Fastest Growing

Blockchain is the fastest growing emerging digital technology, likely to be critical in the 2021-2030 timeframe

High Demand-Supply Gap

<1000 STEM Graduates

in 2020-21 had blockchain as part of their curriculum, while demand for Blockchain Specialist and Blockchain Developer surges

Expanding Talent Sourcing

60%

of Indian Web3 startups operate across global locations with access to local and global talent for skill and scale

At home, Web3 startups prefer remote work, with focus on local hiring. Emerging hubs include Indore, Nagpur, Ernakulam, Mysore, and Jaipur

Established and early-stage Web3 startups, both, face challenges in building a robust talent pipeline due to mindset realignment towards Web3, product expertise, and cost of scarce Web3 talent

Key Challenges in Scaling Web3 Talent Pipeline in India



Web3 Ready Mindset
(Cultural realignment from Web 2.0 development)



Sourcing and Sustaining Web3 Experience Pipeline in the Next 1-2 Years



Cost Arbitrage of Scarce Web3 Talent
(Blockchain demand-supply gap is high)



Technical Reskillability of Current Tech Talent
(Traditional tech workforce reskillability to digital/emerging tech)



Lack of Adequate Base Skilling and Upskilling Options
(Limited academic coursework focused on blockchain/Web3)

01

Low Growth Rate

Startups with a low growth rate primarily plan to upskill/reskill existing talent. They have highlighted:

- **Sourcing and building experienced Web3 workforce** as the key challenge
- Subsequent challenges in **technical reskilling and mindset shift** further compound the problem

02

Medium Growth Rate

Startups with a medium growth rate plan to **combine external sourcing with focused internal upskilling/reskilling**. Thus, these startups need to manage the challenges at both ends while aiming for faster growth

03

High Growth Rate

Startups with a high growth rate primarily plan to source talent externally, and have highlighted:

- **Lack of adequate upskilling options** as the key challenge
- **Mindset change and low cost arbitrage** are the next major roadblocks in scaling talent aggressively to support the pace of growth

With diverse stakeholders coming together to promote large-scale blockchain initiatives, there is a high degree of priority being accorded to steer STEM talent towards blockchain/ Web3 careers



Major Web3 Certification Programs and Partnerships

Certification in Ethereum, Hyperledger, Corda and more

| Institution | Partners |
|--|--|
|  |   |
| |   |
| |  |


Advanced certification in Software Engineering for Cloud, Blockchain and IoT

| Institution | Partners |
|---|---|
|  |  |

Advanced Programme in FinTech and Financial Blockchain (APFFB)

| Institution | Partners |
|---|---|
|  |  |

Advanced Certificate Programme in Blockchain

| Institution | Partners |
|---|---|
|  |  |

Post Graduate Program in Blockchain Technology & Management

| Institution | Partners |
|---|---|
|  |  |



Government-Level Skill-Building Initiatives

- **National Skills Qualification Framework:** Introduced by Gol as part of the National Skilling Programs with critical priority to digital skilling from an early age
- **Web3 Regulatory Sandbox:** Government of Telangana launched a Web3 CoE and regulatory sandbox in August 2022 to address issues and challenges faced by the Web3 startups, particularly in the areas of DeFi and Metaverse
- **India Blockchain Accelerator Program:** Government of Telangana, along with CoinSwitch Kuber and Lumos Labs, launched the India Blockchain Accelerator which aims at supporting and equipping deeptech blockchain startups with expert guidance and government accreditation



Academia Initiatives in Blockchain Innovation

- **Indian Institute of Technology (IIT), Madras,** along with GuardianLink, launched a Web3 startup incubator program at the IIT Madras Research Park to help entrepreneurs innovate in the growing Web3 space
- **IIIT Hyderabad:** The Centre for Innovation and Entrepreneurship (CIE) at IIIT Hyderabad partnered with Arka Media Works to launch Media-Tech Accelerator which will focus on emerging technology areas including AI, blockchain, and Metaverse
- **Kerala State Blockchain Academy:** Initiative of IIIT-K to provide a platform for aspiring blockchain developers to acquire the potential opportunities and meet the demands of industry

Global and domestic investors are equally supporting growth of India's Web3 talent with accelerator programs, such as the PolygonLEAP Accelerator

PolygonLEAP Accelerator, launched by the Web3 unicorn Polygon, in partnership with Lumos Labs, is a four-month long acceleration program aimed at developing Web3 startups that are focusing on the India ecosystem



Program Overview

- In a four-month program, selected startups innovate and build unique blockchain-based solutions for different pre-defined tracks
- A month-long Bootcamp follows wherein the selected startups turn their vision into real products under guidance from industry leaders on GTM, product scalability, and long-term business planning
- On the Final Demo Day, the group of 10 shortlisted startups showcase their final products/ solutions
- Polygon has set aside nearly \$9 Mn in funding and \$250,000 in prize money for this program



Accelerator Tracks

- Entertainment (games, NFT products, streaming services)
- Decentralized Finance
- Mobile-First Applications
- Open Innovation



Investment Partners



Select Cohort Startups





Accelerating India Web3 Adoption

- Opportunities for Web3 Applications across Sectors
- Web3 Developments in India
- Web3 Opportunity Areas for India
- Challenges of the Current Indian Web3 Market
- Recommendations to Build a Robust India Web3 Ecosystem

The blockchain-based web, with its secure and immutable record-keeping and disintermediation, stands to provide benefits for a variety of sectors



Government and Public Services

- Fixed physical and digital asset registration and tracking
- Population records (identity, medical, educational)
- Electronic voting
- Central bank digital currency (CBDC)



BFSI

- Cross-border trade and payments
- Micro-lending/ priority-sector lending
- KYC, immutable/ secure record keeping (assets, claims, audit, etc.)
- Workflow automation with smart contracts



IT (Services, BPM/BPA, ER&D)

- Data center and Cloud services for Web3 stack
- Legacy – Web 2.0 – Web3 systems integration
- Interoperability standards for APIs, dApps, and Web3 hardware
- Product Innovation in AR/VR/MR and embedded software + content



Education

- Transparent, merit-based, and uniform K-12 teacher selection
- Educational gaming, virtual labs, field trips, virtual industry tours
- Transferable credits (school boards, sports, advanced courses)
- Immutable academic merit



Pharmaceuticals, Healthcare and Life Sciences

- Drug discovery, manufacturing, and distribution provenance
- Medical professionals' certification/ recertification records
- Organ/ blood donation record
- Medical tourism through virtual experiences



Travel, Tourism, and Transportation

- User loyalty and rewards (frequent flyer, hotel stay, eat-out credits)
- Cargo and freight tracking and provenance
- Fleet management, maintenance, and tracking
- Provider quality and audit control, and rewards



Gaming, Media and Entertainment

- Mixed-reality gaming experiences integrating Web 2.0 and Web3
- Simulation platforms to enable experiential design thinking
- Non-gaming entertainment and loyalty programs
- Creator economy (IP protection, counterfeit control)



Manufacturing and Supply Chain

- Supply chain traceability and procurement control
- Risk and quality control – counterfeiting, provenance
- Immutable product design and IP records
- Contracts, supply chain financing, warranties, and payments



Retail and CPG (includes food, fashion, and luxury)

- NFT-based loyalty, rewards programs
- Secure identity for personalized product marketing in virtual space
- Farm-to-market food auditing
- Supply chain traceability



Energy and Utilities

- Generation, distribution and consumption records management
- Trading and carbon credit records

Sources: NASSCOM-Zinnov analysis.

The ecosystem players – academia, startups, corporates, and regulators – are collaborating to create Web3 development opportunities with diverse innovation challenges and CoEs

Focus Areas for Web3 Ecosystem Development

Startup – Academia Partnerships

Aims to provide:

- An incubatory space for multiple startups to build and scale their solutions
- Access to facilities, industry connections, networking opportunities, coworking spaces etc.



Startup – Government Partnerships

Governments and startups are collaborating actively at a state level to:

- Foster early-stage startups and develop blockchain capabilities for real-world problems
- Support individual blockchain developers with infrastructure and access to established corporate initiatives via dedicated blockchain/ Web3 CoEs

Startup – Corporate Programs

Startups and corporates in the Web3 domain are partnering to:

- Speed-up startups' go-to-market ability, with industry-guided market-ready products
- Quicken global outreach – India for the world
- Build the India market ecosystem for global Web3 leadership

Government Policies

Governments, central and state, are considering requisite policy guidelines:

- The National Blockchain Framework, initiated by MeitY, is expected to be a public blockchain-as-a-Service (BaaS) framework
- It derives from Gol's National Blockchain Strategy that has enumerated diverse public use cases of blockchain for citizen services and cross-domain applications

India's promising opportunities with Web3 lie in decentralizing governance and public services, identity-based social development solutions, and delivering world-class tech stack



DLT-Based Governance Services

- Implementation of National Blockchain Strategy recommendations across critical areas of asset, identity, records, and risk management
- Disintermediation of public services provisioning through use of DLT and immutable smart contracts
- Adopting a community-led approach to smart governance policy-making by implementing governance DAOs
- Decentralization of massively-centralized authorities into micro-corporations for efficient services delivery
- Conceptualization of world-class public governance protocols – for a scale of 1.5 Bn people and 70% rise in urbanization



Local Investments, Global Products

- Regulated expansion of the crypto-tech market in India, with its potential to create over 800,000 jobs and an economic value-add of \$184 billion by 2030 in the form of investments and cost savings
- Nurturing a tech R&D ecosystem for more trend-setting global firsts, such as Polygon, from India
- Market-led talent development to exploit the highest demand growth rate for blockchain solutions
- Big investor bets in deeptech projects from India



Dedicated Web3 Talent Capacity

- India's software developer talent pool will potentially be the largest globally, by 2024-25, with a likelihood of 10X growth in Web3 talent, positioning India to be the largest Web3 talent hub worldwide
- Large-scale industry-academia upskilling partnerships to identify and reskill relevant talent pool in Web3 development
- Open source or MOOC-based platforms to prepare Tier 2/3 talent in Web3 skills



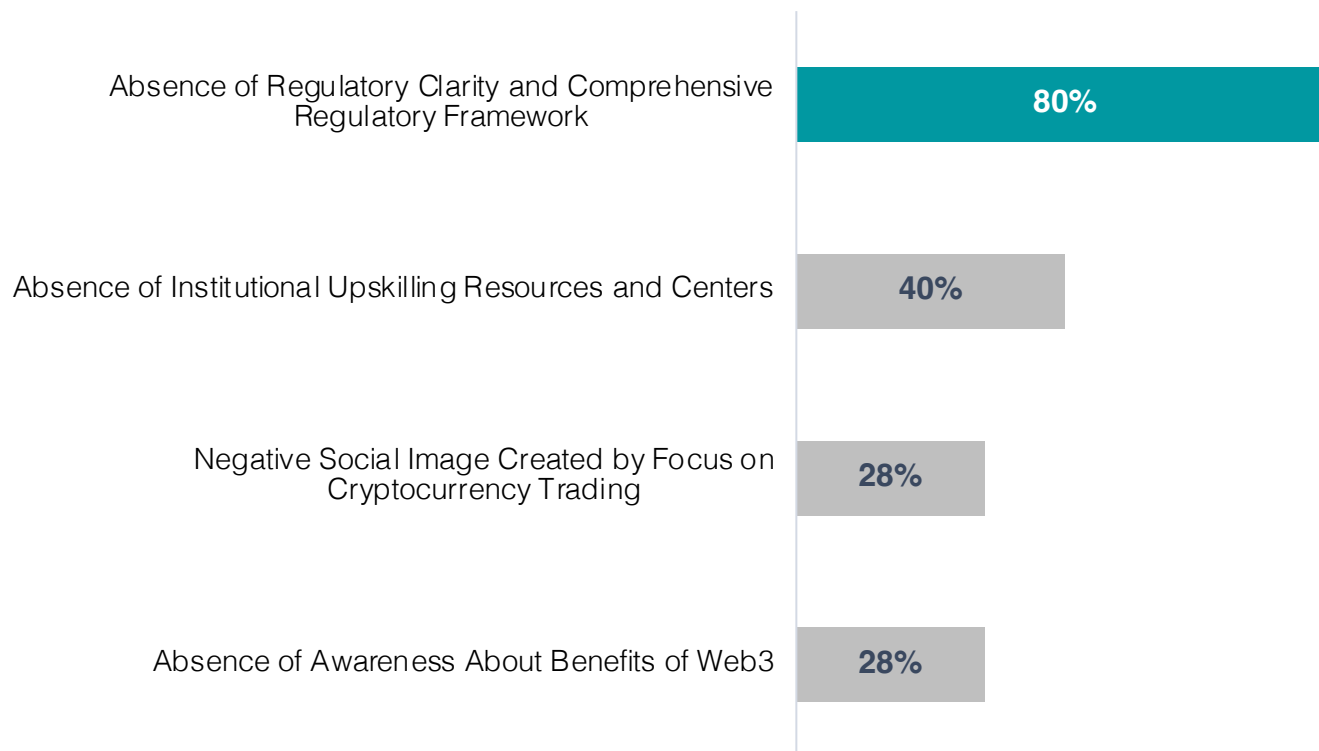
Multistakeholder Partnerships

- Joint hackathons, co-creation partnerships, go-to-market partnerships are mushrooming and will offer rapid skill development and scale
- Collaborative platforms by several associations and pseudo-industry bodies to foster open discussions about the challenges in developing a sustained blockchain talent pipeline can lead to meaningful interventions in STEM education

Sources: Forbes, Chain Debrief, Buy Bitcoin Worldwide, NASSCOM-Zinnov analysis

However, Indian Web3 startups see major roadblocks in scaling up due to lack of regulatory clarity and policy direction, risking India's competitive advantage

Primary Challenges Indicated by Web3 Startups in Operating in the India Market



Sources: NASSCOM-Zinnov analysis.



Key Highlights

01

High Taxes:

India currently taxes Virtual Digital Assets (VDAs) trading and gains with 1% TDS and 30% income tax rate respectively and may include VDAs under 28% GST tax bracket.

02

Lack of Policy Clarity:

The high taxes cover all types of tokens (as the VDAs are very broadly defined by the Ministry of Finance) signals that the technology itself is to be discouraged. Further, there is a shadow ban in place on use of UPI to enable payments on crypto exchanges.

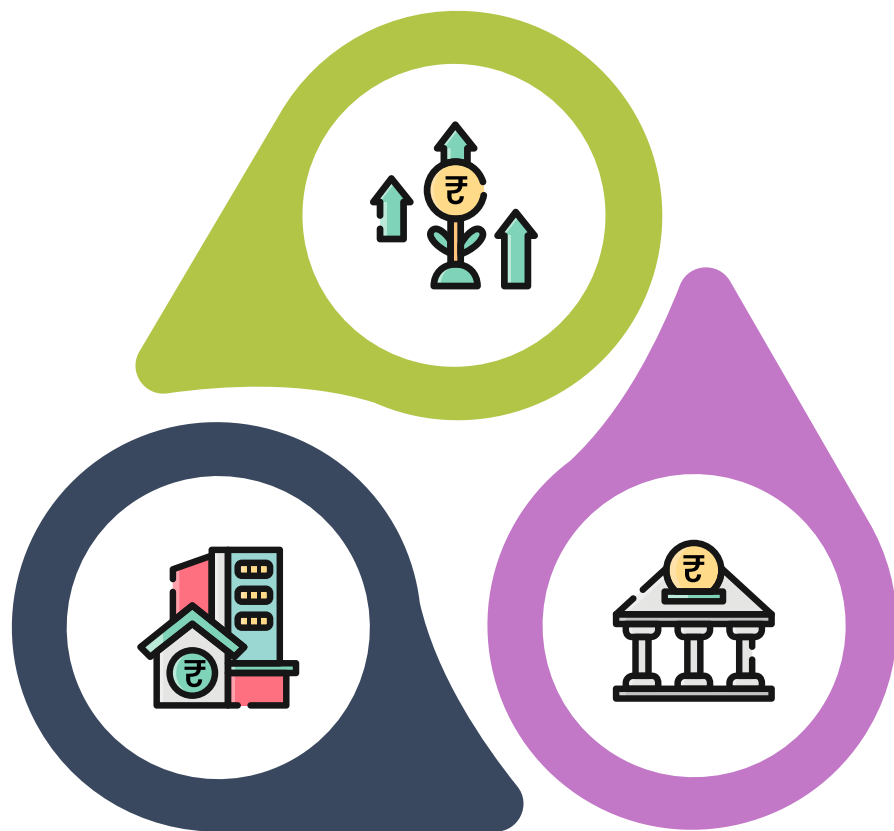
03

CBDC and Private Cryptocurrencies:

India plans to launch its official central bank digital currency (CBDC), or the Digital Rupee, in FY2023, but little is known about its implications on the private cryptocurrency market

Web3 will prove game-changing for economies that can bring together the right ecosystem partners to take the right steps early on to facilitate this industry

(1/2)



01

Investors

- Invest in founders with a purpose
- Prune out "me too" business models
- Diversify Web3 portfolio to include social use cases
- Seek energy-efficient business models
- Seek end-user ease of usability, alongside technical sophistication
- Promote the development of organically evolving blockchain-based communities

02

Startups

- Aim for IP-based solutions, with IP creation in India
- Engage with policymakers in constructive dialog on how to modify existing laws/ policies to promote new technologies
- Spearhead end-user awareness initiatives to dispel myths and demonstrate real benefits

03

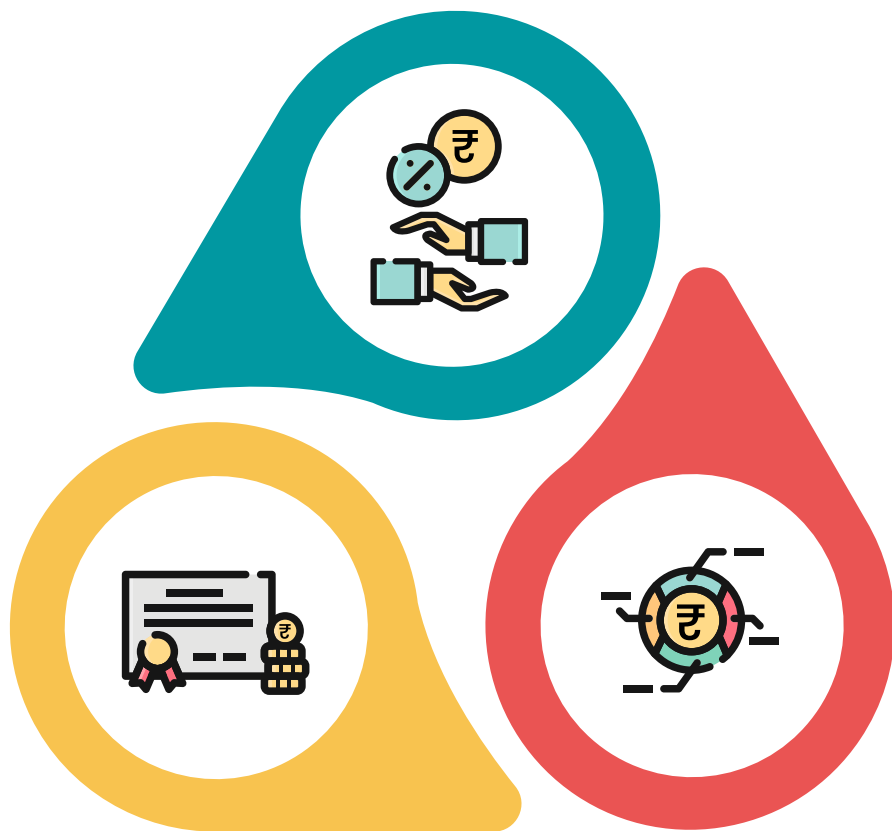
Governments

- Clarify short-, mid-, and long-term direction on cryptocurrencies and blockchain
- Review existing laws and regulations to make them technology agnostic and enable blockchain-based use cases
- Enable collaboration with industry leaders and veterans to address the need for appropriate regulatory capacity and global co-ordination for high-risk use cases, such as those involving banking, payments, and funding
- Enable pilots in low-risk use cases, such as NFTs and utility tokens, to assess risks and devise the "right-touch" regulatory framework
- Expand sandboxing to test cross-functional use cases to identify the "real" risks, and extent of regulations
- Institute an empowered cross-ministerial group to fast-track national-scale blockchain projects
- Initiate global alignment and harmonization in defining virtual digital assets

Sources: NASSCOM-Zinnov analysis

Web3 will prove game-changing for economies that can bring together the right ecosystem partners to take the right steps early on to facilitate this industry

(2/2)



04

Industry Associations

- Own thought leadership on the “art of possible” with Web3
- Initiate global roadshows to showcase India talent
- Lead India voice at global forums to push for open standards and interoperability

05

Students/Academia

- Build dedicated Web3 curriculum for market-ready talent; short-term certifications can help bridge immediate gaps
- Organize more blockchain-centric hackathons
- Aim for viable lab-to-market solutions to secure funding
- Collaborate with government to launch blockchain modules as part of school curriculum, similar to the AI modules

06

Corporates

- Initiate strategic discussions on Web3 as a technology area of interest and impact
- Align Web3 PoCs with real-world business KPIs
- Engage with startups and academia to bridge demand-supply gap with coursework and experiential skilling



Appendix

- Glossary of Web3 Terms
- Web3 Job Roles

Glossary of Web3 Terms

Access Point Layer:

Low friction entry points for users to access to Web3

API (Application Programming Interface):

A software module that allows two separate applications to communicate with one another. APIs define methods of communication between various components

Application Layer:

User interface for interacting with the infrastructure

Blockchain:

A digital ledger comprised of unchangeable, digitally recorded data in packages called blocks

Consensus Protocol:

Consensus protocol consists of some specific objectives such as coming to an agreement, collaboration, co-operation, equal rights to every node, and mandatory participation of each node in the consensus process

Cryptocurrency:

Digital currency that is based on mathematics and uses encryption techniques to regulate the creation of units of currency as well as verifying the transfer of funds. Cryptocurrencies operate independently of a central bank and are kept track of through distributed ledger technology.

DAO:

A decentralized autonomous organization (DAO), sometimes called a decentralized autonomous corporation (DAC), is an organization constructed by rules that are often transparent, controlled by the organization's members and not influenced by a central authority

Decentralization:

The transfer of authority and responsibility from a centralized organization, government, or party to a distributed network

Decentralized App (dApp):

An open source, software application with backend code running on a decentralized peer-to-peer network rather than a centralized server

Digital Asset:

A digital commodity that is electronically transferable, and intangible with a market value

Distributed Ledger Technology (DLT):

Distributed Ledger Technology (DLT) refers to the technological infrastructure and protocols that allows simultaneous access, validation, and record updating in an immutable manner across a network that's spread across multiple entities or locations, called nodes

Ethereum:

A public blockchain network and decentralized software platform upon which developers build and run applications

Immutable/Immutability:

The inability to be altered or changed. This is a key element of blockchain networks: once written onto a blockchain ledger, data cannot be altered

Layer 1 Blockchain:

Layer 1 is the main blockchain network in charge of on-chain transactions

Layer 2 Blockchain:

Layer 2 is the connected network in charge of off-chain transactions and scaling

Metaverse:

The metaverse is a digital reality that combines aspects of social media, online gaming, augmented reality (AR), virtual reality (VR), and cryptocurrencies to allow users to interact virtually

Glossary of Web3 Terms

Mining:

In a public blockchain, the process of verifying a transaction and writing it to the blockchain for which the successful miner is rewarded in the cryptocurrency of the blockchain

Node:

A computer which holds a copy of the blockchain ledger

Non-Fungible Token (NFT):

A blockchain record that is connected to a specific digital or physical asset

Peer-to-Peer (P2P):

P2P refers to interactions that happen between two parties, usually two separate nodes. A P2P network can be any number of nodes. In regard to a blockchain network, individuals are able to transact or interact with each other without relying on an intermediary or single point of failure

Proof of Authority (PoA):

PoA is an alternative form to the PoS algorithm. Instead of staking cryptocurrency (wealth), in PoA you stake your identity. This means voluntarily disclosing who you are in exchange for the right to validate blocks. Any malicious actions you undertake as a validator will reflect back on your identity. PoA blockchains require a thorough form of KYC

Proof of Stake (PoS):

Proof-of-stake (PoS) is the consensus mechanism used to verify new crypto tokens transactions. With PoS, participants referred to as “validators” lock up set amounts of crypto tokens —their stake, as it were—in a smart contract on the blockchain. In exchange, they get a chance to validate new transactions and earn a reward

Proof of Work (PoW):

Proof of Work (PoW) is a consensus protocol that requires members of a network to expend effort solving an arbitrary mathematical puzzle to prevent anybody from gaming the system. Due to proof of work, cryptocurrency transactions can be processed peer-to-peer in a secure manner without the need for a trusted third party

Protocol Layer:

A public blockchain network and decentralized software platform upon which developers build and run applications

Smart Contracts:

Smart contracts are digital contracts stored on a blockchain that are automatically executed when predetermined terms and conditions are met

Token:

Cryptographic tokens represent programmable assets or access rights, managed by a smart contract and an underlying distributed ledger. They are accessible only by the person who has the private key for that address and can only be signed using this private key

Wallet:

An interface that keeps track of the wallet owner's coins and tokens. Wallets are associated with public addresses which hold token 'balances'

Web3 Job Roles

- **Blockchain Engineer:**

Blockchain engineers design and develop blockchains, blockchain infrastructure and blockchain applications. This needs knowledge of cryptography and advanced coding

- **Blockchain Software Developer:**

A blockchain software developer produces web apps using protocols specified by web architects and blockchain core developers, similar to how a web developer builds web applications using protocols set by web architects and blockchain core developers. Essentially, they use existing tools to construct dApps on top of blockchain infrastructure. This is accomplished by creating and implementing smart contracts on the blockchain. Among the tools necessary for the job are Solidity and Substrate

- **UI & UX Designer:**

Blockchain products follow the same design principles as any other product. However, because blockchain is difficult to grasp for the average person, designers must adhere to the KISS approach. Communicating with developers is essential for getting the product to widespread usage. It necessitates a consistent user experience throughout the process, removing any impediments caused by technical complexity

- **Solidity Developer:**

Solidity developers create smart contracts for Ethereum, one of the most popular blockchains. Solidity is a computer language that is used to generate these contracts. It is one of the most highly compensated job profiles in Web 3.0

- **Blockchain Reliability Engineer:**

Blockchain Reliability Engineer help develop blockchain software and create instrumentation that monitor the health of the blockchain network. You They implement statistical models to determine how well the blockchain network is functioning and whether it is under attack

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About Us

Hashed Emergent is an early stage venture capital fund focused on investing in companies at the intersection of Web2 and Web3 in emerging markets, particularly India. Based in Bangalore, Singapore and Dubai, our team of diverse professionals is dedicated to empowering builders who are enabling the mass adoption of blockchain and accelerating the decentralized future. As a part of Hashed, one of the most active blockchain-focused investment firms in the world, we leverage a broad breadth of experience and a large professional network to offer the best support to our portfolio companies.



www.hashед.com

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