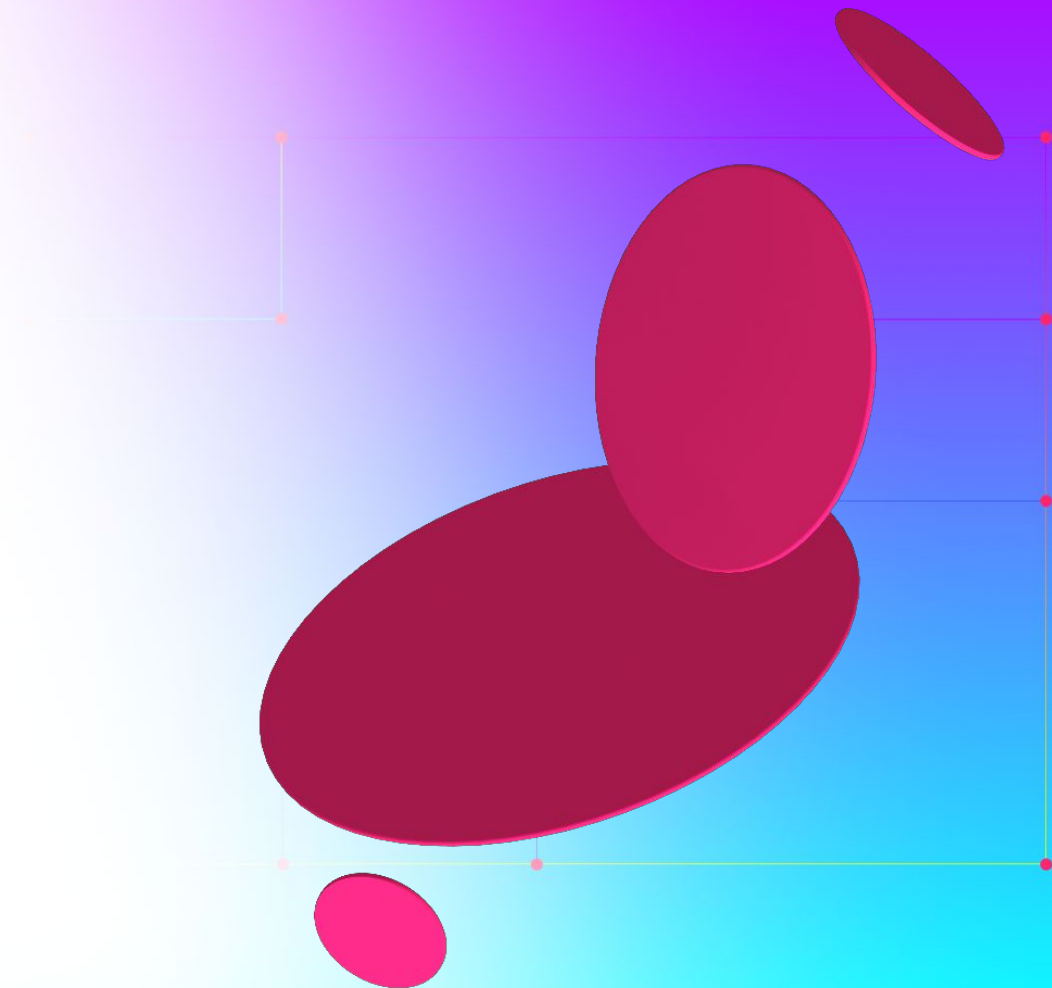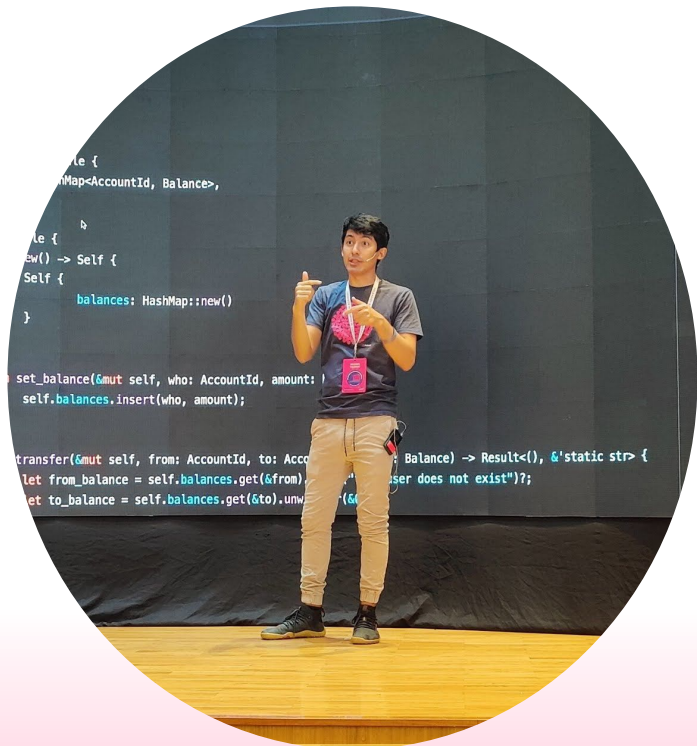**Polkadot**

Let's talk about...

The Future of

Web3

Hi! I'm Shawn Tabrizi

- Studied Physics and Math at UCSB.

- 4 years working on Azure at Microsoft.

- 7 years doing blockchain development.
  - Lead Developer of Polkadot
  - Teacher for Web3 / Blockchain Development

- 4 Years based in Puerto Rico.

There is a growing divide in the blockchain ecosystem.

Long Term Thinking

- Scalable Decentralization
- Light Clients
- Trustless Bridges
- Utility Derived Tokens
- Sustainable Economics
- Changing the Status Quo
- Rich Metadata
- etc...

Short Term Results

- Small Validator Sets
- Expensive / High Powered Nodes
- N of M Multisigs
- Speculative Tokens / Gambling
- VC Controlled Dumps
- Pandering to Incumbents
- Blind Signing
- etc...

Much of this divide comes from a misunderstanding of these terms:

Cryptocurrency

Blockchain

DeFi

Web3

Not the same!

Much of this divide comes from a misunderstanding of these terms:

Cryptocurrency	A resource
Blockchain	A technology
DeFi	A vertical
Web3	A revolution

Goals for this presentation...

- ❏ **Remind you of the meaning of Web3.**

- ❏ **Provide insights into the future of Web3.**

- ❏ **Share details about Polkadot's role in the Web3 revolution.**

What is **Web3**?

Web3 is the technological embodiment of less trust and more truth.

Why **Less Trust**?

"Power tends to corrupt and absolute power corrupts absolutely. Great men are almost always bad men, even when they exercise influence and not authority: still more when you superadd the tendency or the certainty of corruption by authority."

Lord Acton, letter to Bishop Creighton (1887)

History has shown us that we **cannot trust centralized authorities**.

Global Financial Crisis
2008

The collapse of major financial institutions like Lehman Brothers and the subsequent bailouts revealed the fragility of centralized banking systems and the risks of opaque financial practices.

Wikileaks Censorship
2010

Governments and financial institutions cut off funding channels to WikiLeaks, blocking donations via traditional systems like PayPal and credit cards.

Snowden Revelations
2013

Exposed global surveillance programs conducted by the NSA and its allies, showing how governments and centralized entities were collecting and storing vast amounts of private data without consent.

and so much more...

Web3 Provides More Truth.

Web3 is:

- Decentralized
- Verifiable
- Self-Sovereign
- Interoperable
- Privacy-Preserving

- Open
- Public
- Borderless
- Neutral
- Censorship Resistant

- Resilient
- General
- Performant
- Coherent
- Accessible

Properties of Web3

Pillars of Blockchain
by Andreas Antonopoulos

Web3 Maxims
by Gavin Wood

Web3 is a revolution in the way we interact with the world.
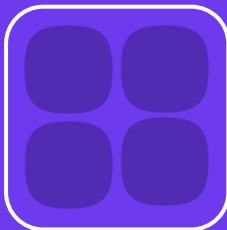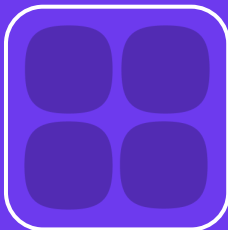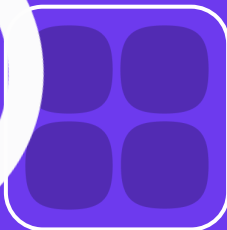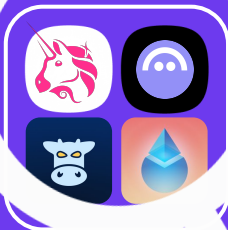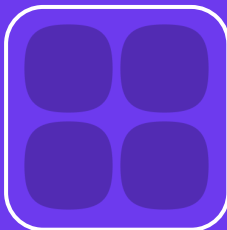
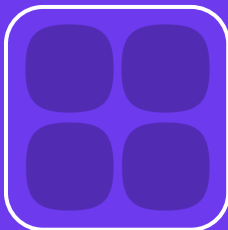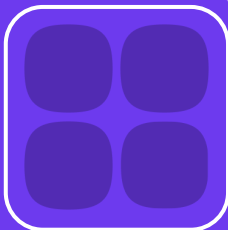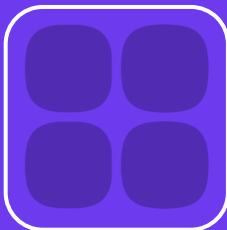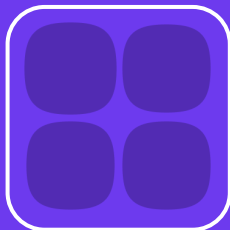Wallets   DAO   DeFi   SocialFi   Privacy   Bridges   RWA
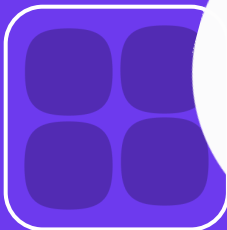
Data   Gaming   Identity   NFTs   DePIN   Contracts   Metaverse
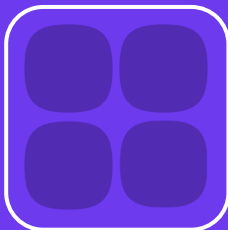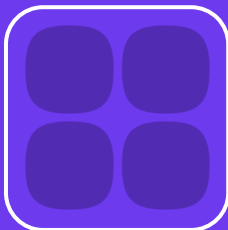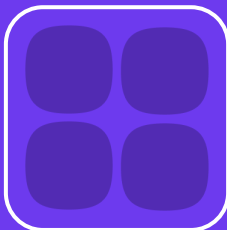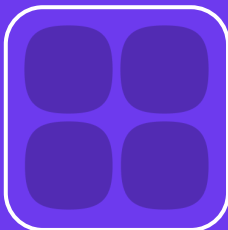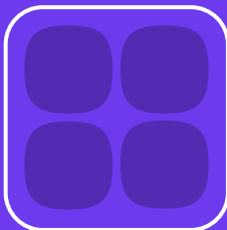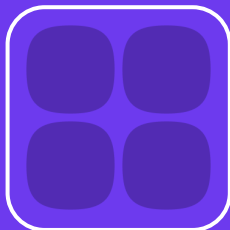
Sustainability   Dev Tools   AI   Media   Explorers
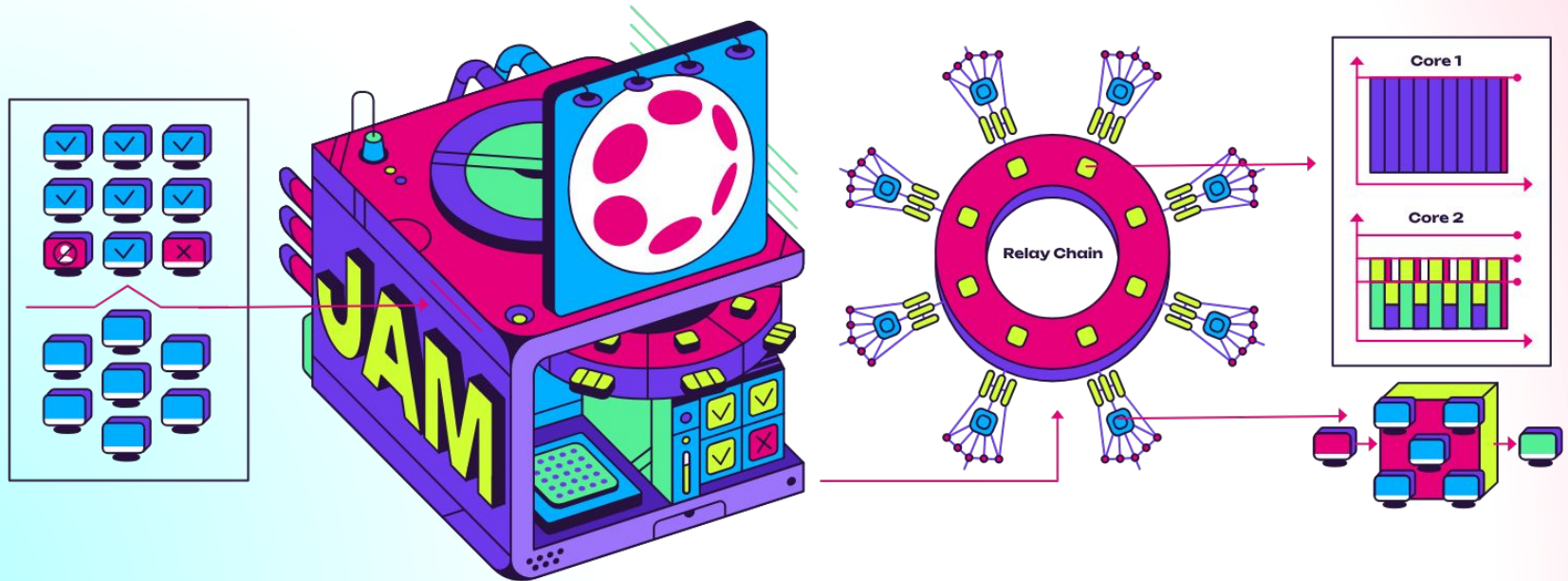
Web3 ≠ DeFi

We have so much more to explore!

Blockchain is just a
Decentralized Computer

History Will **Repeat** Itself

Early Computers

Early computers processed financial transactions for banks and governments.

Compute is expensive and limited to institutions with significant capital.

The Cloud Revolution

Cloud computing enabled all businesses to rent scalable computing power.

A shift to pay-as-you-go cloud services lowered barriers to entry for everyone.

Business Specific Blockchains

Customized blockchains become standard for Web3 businesses, allowing them to manage data in-house.

Financial institutions deploy their own costly blockchains to handle growing transaction volumes.

1990

2010

Today

1950

2000

2020
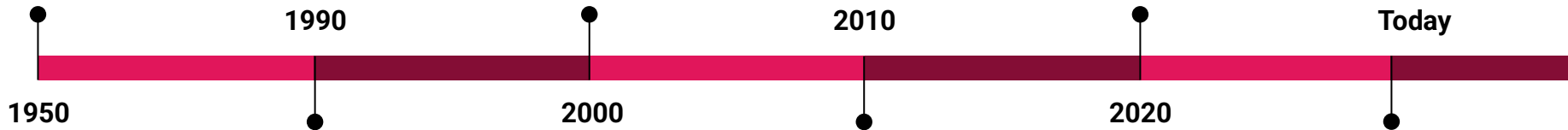
Business Specific Servers

On-premise servers become standard for businesses, allowing them to manage data in-house.

Financial institutions deploy costly data centers to handle growing transaction volumes.

Early Blockchains

The first blockchain based decentralized computers like Bitcoin and Ethereum focused on financial transactions.

Computing is expensive and limited to individuals with significant capital.
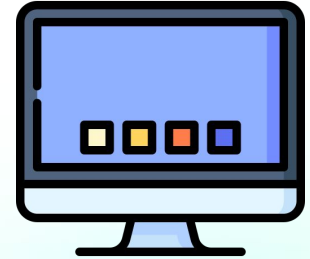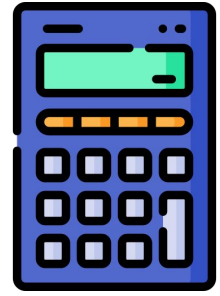
The Decentralized Cloud Revolution

The Web3 Cloud allows everyone to access scalable, decentralized, and permissionless computing power at a fraction of the cost.

Polkadot is the next evolution of the blockchain landscape.

Bitcoin created a calculator.
Ethereum created a computer.
Polkadot created a cloud server.
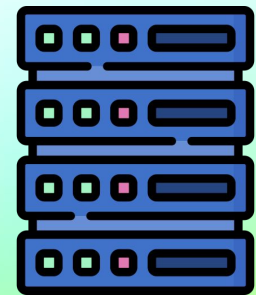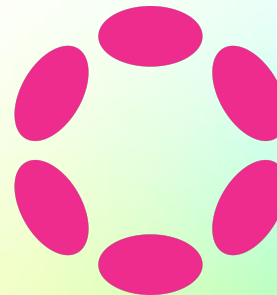
Polkadot will do to **Web3** what **AWS** did to **Web2**.

The heart of the difference between Web2 and Web3 lies in resilience.

Resilience against:

- Censorship
- Single points of failure
- Hacks and security breaches
- Network outages
- Data manipulation

- Regulatory overreach
- Corruption or collusion
- Ownership disputes
- Monopolization
- and more…

Community
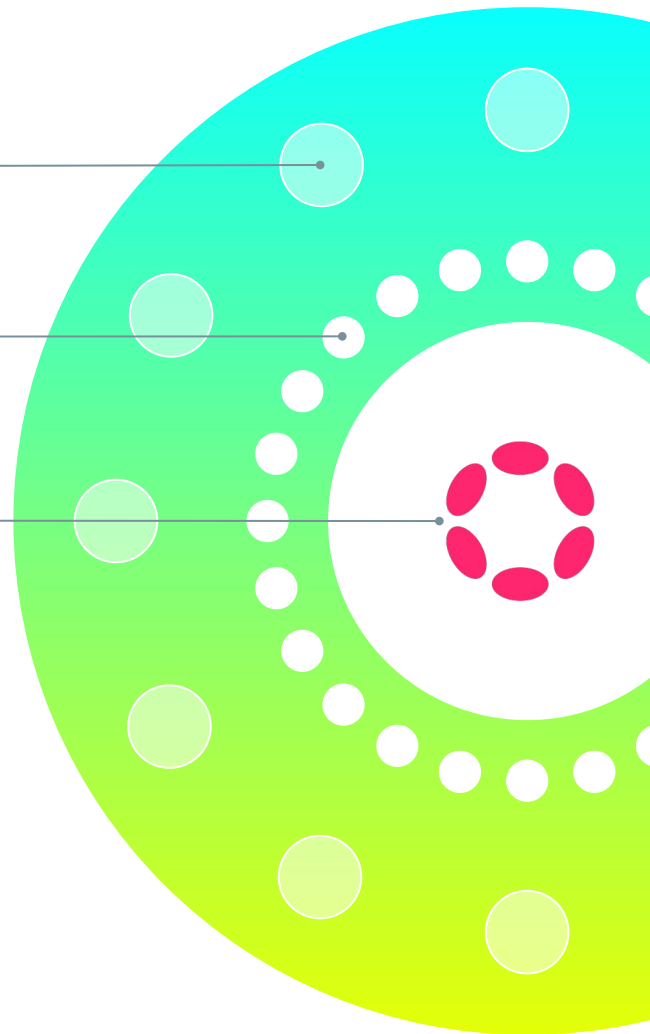Resilience through decentralization.

Ecosystem
Resilience through diversification.

Technology
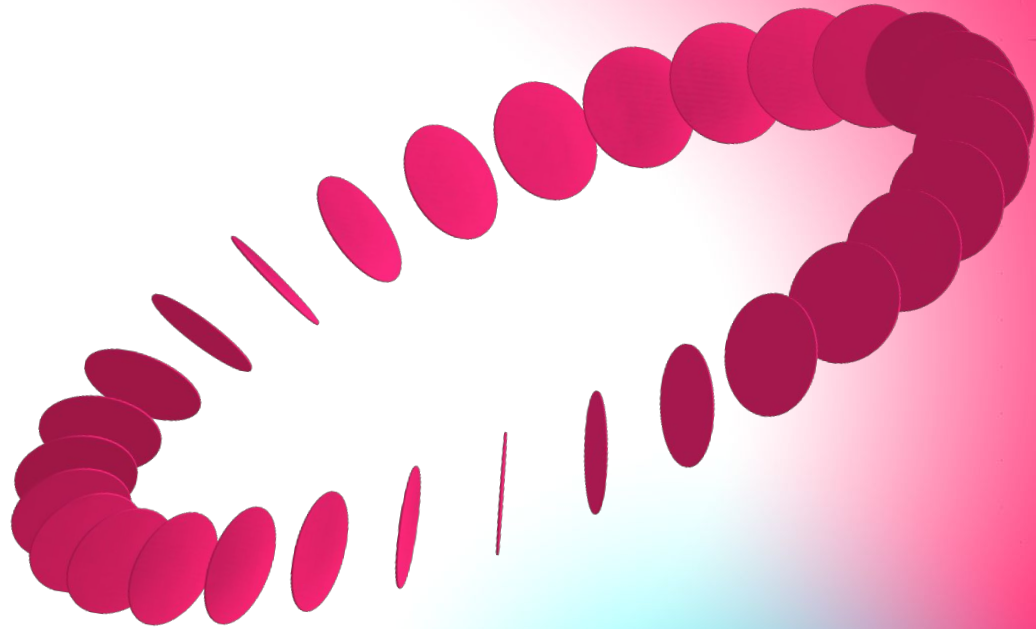Resilience through computer science.

Polkadot achieves resilience in every part of the network.

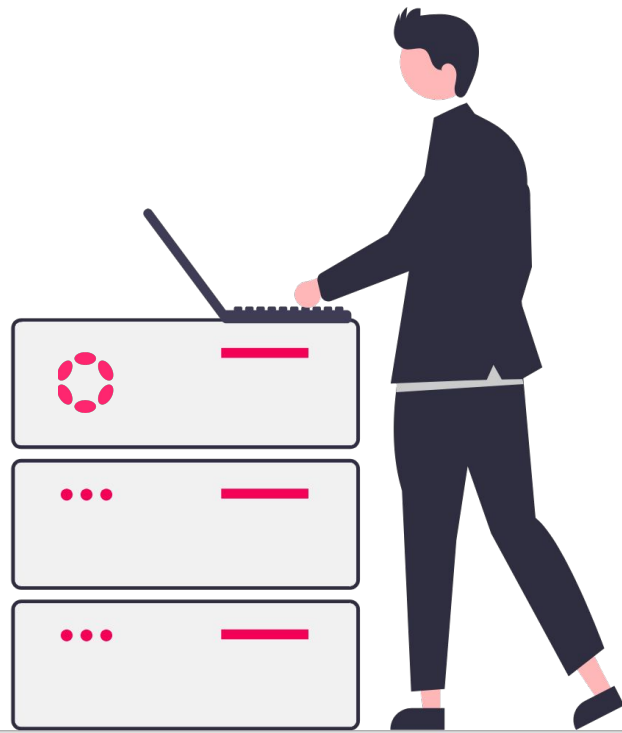Resilience Through Computer Science

Technology

How do you build a **Web3 Cloud**?

- Create a scalable, secure, decentralized, and resilient **supercomputer**.

- Design the computer to expose general, flexible, and verifiable Web3 resources.

- Allow affordable and predictable access to those resources.

The Resource of Web3 is **Blockspace**

"Blockspace is the best product to be selling in the 2020s."

Chris Dixon, Founder & Managing Partner, α16z crypto

- Blockspace is the accumulation of various resources needed to run decentralized applications.
  - For example: decentralized execution, storage, data availability, etc…
- Blockspace produced by different systems will vary in **quality, availability, and flexibility**.

**Polkadot is designed to create the highest-quality blockspace.**

Designed by Ethereum Co-Founder

Dr. Gavin Wood

- Co-Founder and CTO of Ethereum
  - Inventor of the EVM
  - Author of the Yellow Paper
  - Implementer of the first Ethereum Client
  - Creator of Solidity
- Founder of Polkadot
  - Author of the Polkadot Paper
  - Lead Architect of the Polkadot Protocol
  - Lead Developer of the Polkadot SDK
  - Author of the Gray Paper

Gavin envisions Polkadot as the ubiquitous world computer, capable of executing anything and everything with resilience.
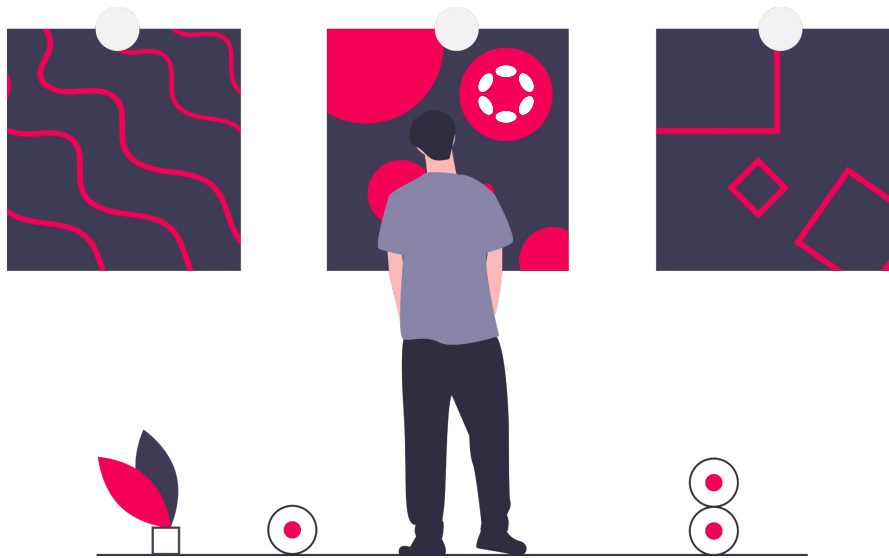
Multi-Core

Polkadot is the world's first decentralized multi-core computer.

The Polkadot Cloud exposes **hundreds of execution cores** and an abundance of blockspace.

Small applications can share a single core, while large services can use multiple cores at once!

Parallelization

Polkadot's primary scaling solution comes from **data and execution sharding**, allowing us to execute applications and services in parallel and over multiple cores.
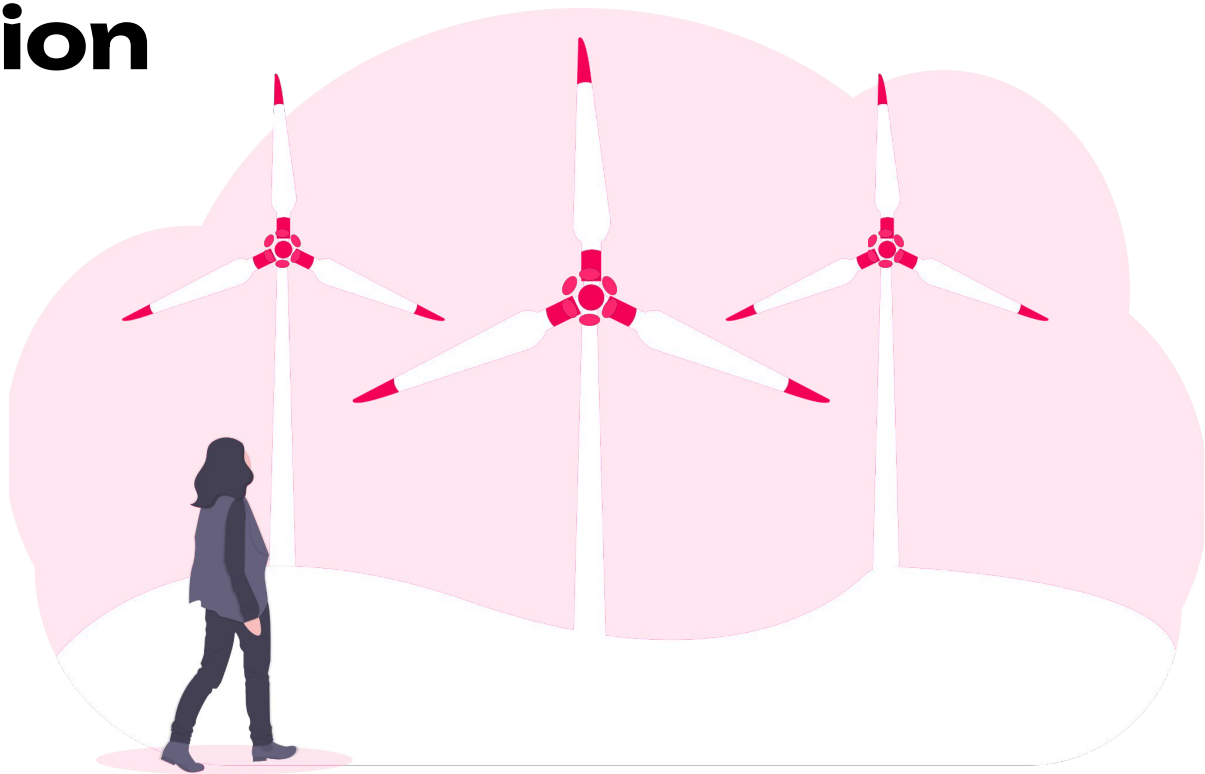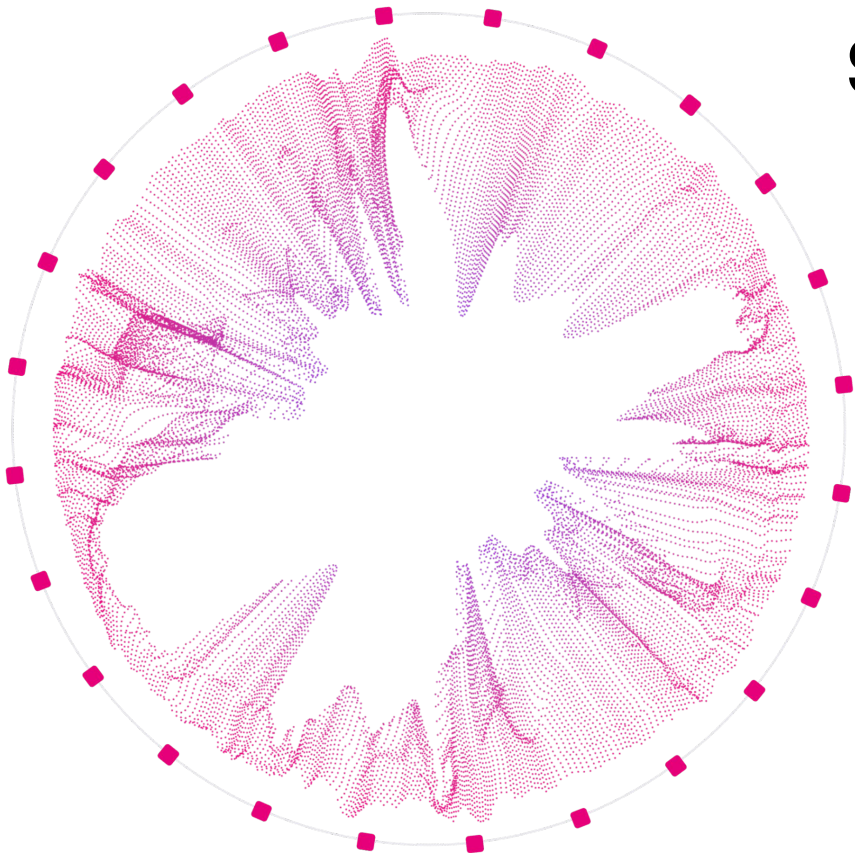
Shared Security

An often overlooked problem is the **economic scaling** of a sharded blockchain ecosystem.

Polkadot is unique in that it provides all applications running on the Polkadot Cloud with the same security guarantees that it has.

Interoperability

Polkadot provides a protocol-native interoperability layer, allowing for applications to **communicate** and **collaborate**.

Polkadot also has a growing ecosystem of trustless, secure bridges to other ecosystems like Ethereum, Bitcoin, and more...
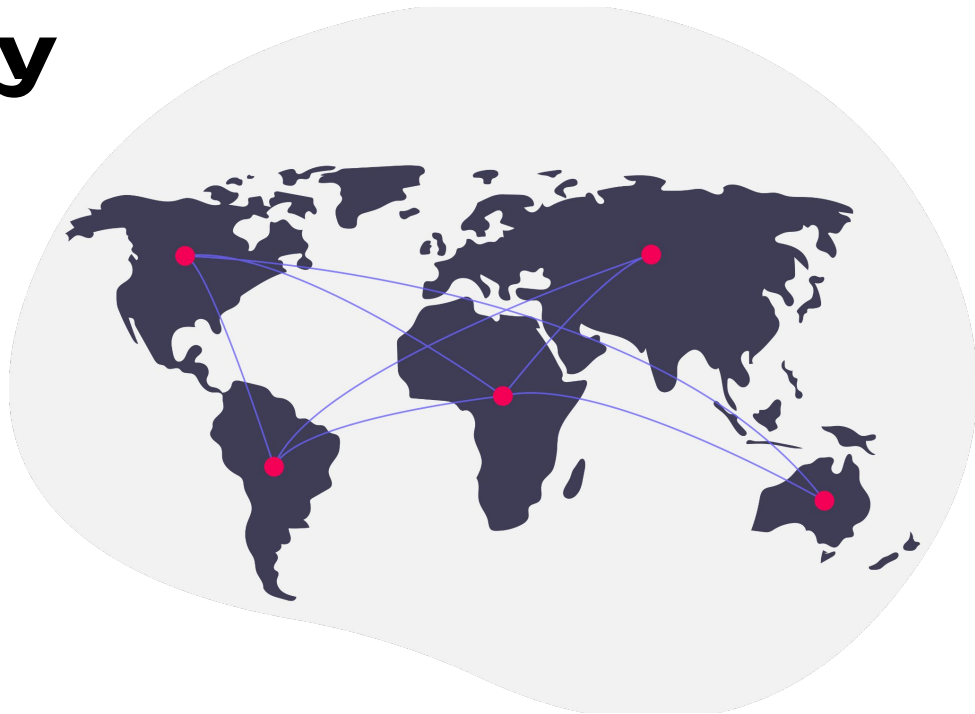
Data Availability

Polkadot also provides its own protocol native data availability layer.

Applications can access and use this at **no additional costs** and with no secondary token or network.

Our current DA solution provides more bandwidth than dedicated solutions for Ethereum.
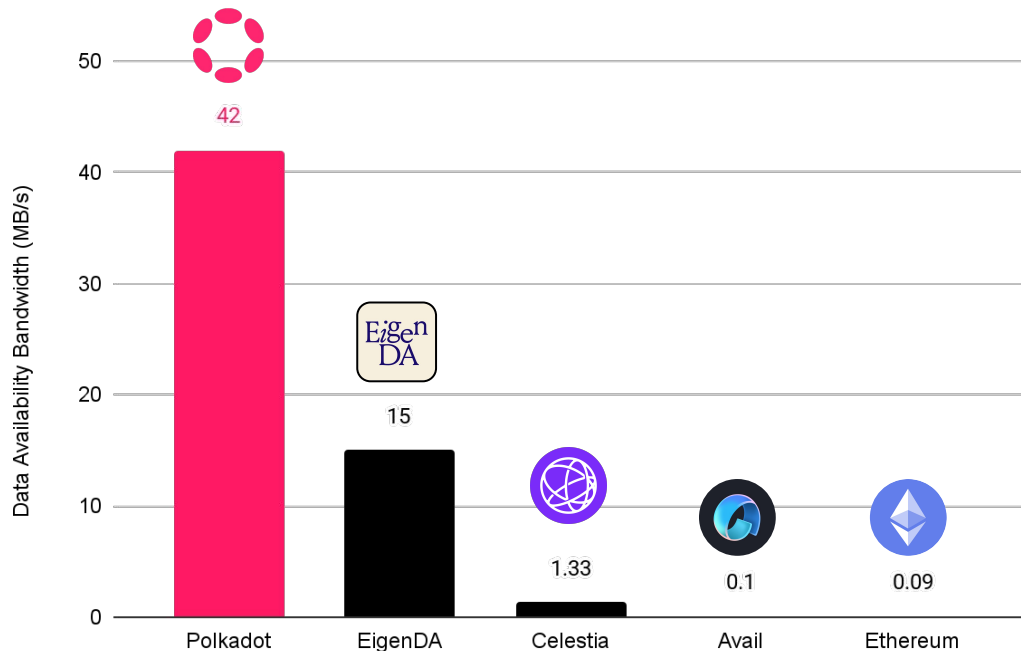
The Highest Bandwidth

Polkadot has been **optimized for L2 scaling and rollups**.

It provides the most data availability bandwidth, by a large margin compared to other "modular" solutions.
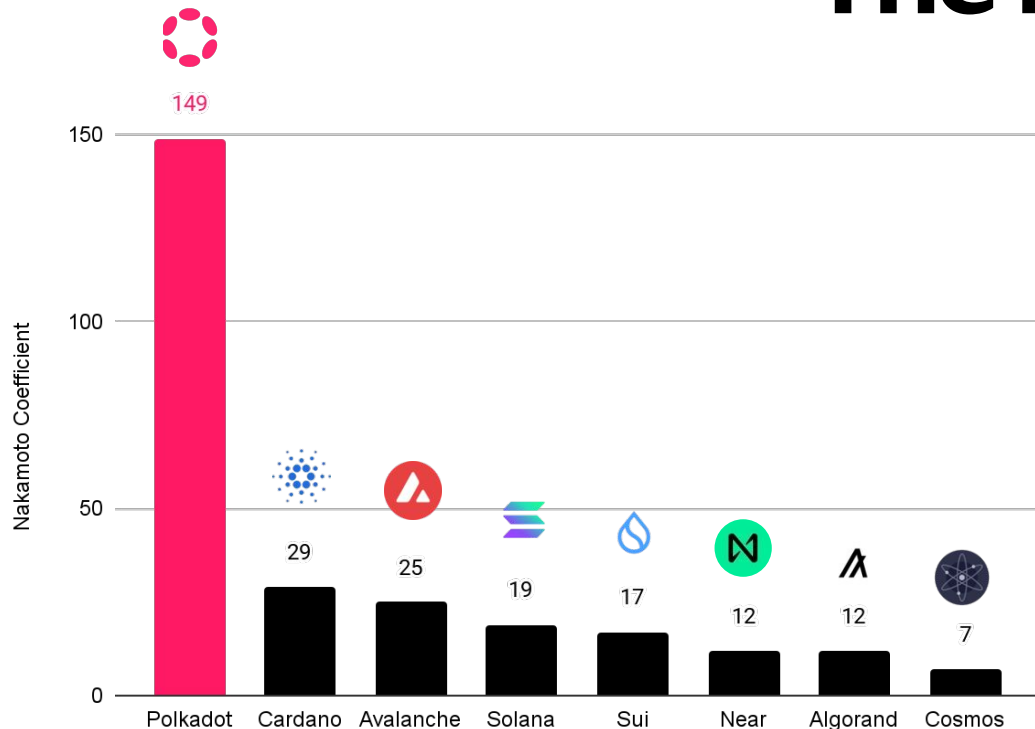
And remember, this all comes at no additional cost to the application.

Sourced from each chain, January 2025

The Most Resilient

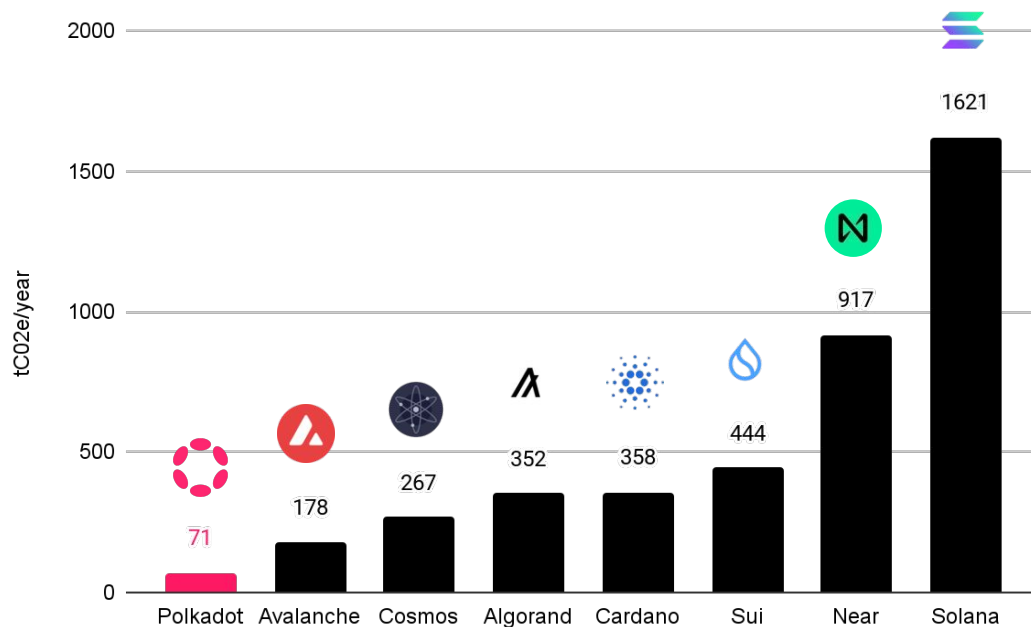The Nakamoto Coefficient measures how many independent entities would need to collude to halt a blockchain.

Higher values mean greater **decentralization** and **resilience**.

Nakamoto Coefficient

Polkadot	149
Cardano	29
Avalanche	25
Solana	19
Sui	17
Near	12
Algorand	12
Cosmos	7

Source: nakaflow.io, February 2025

The Most Energy Efficient

An independent study showed Polkadot had the lowest total annualized carbon footprint among L1 proof-of-stake networks.
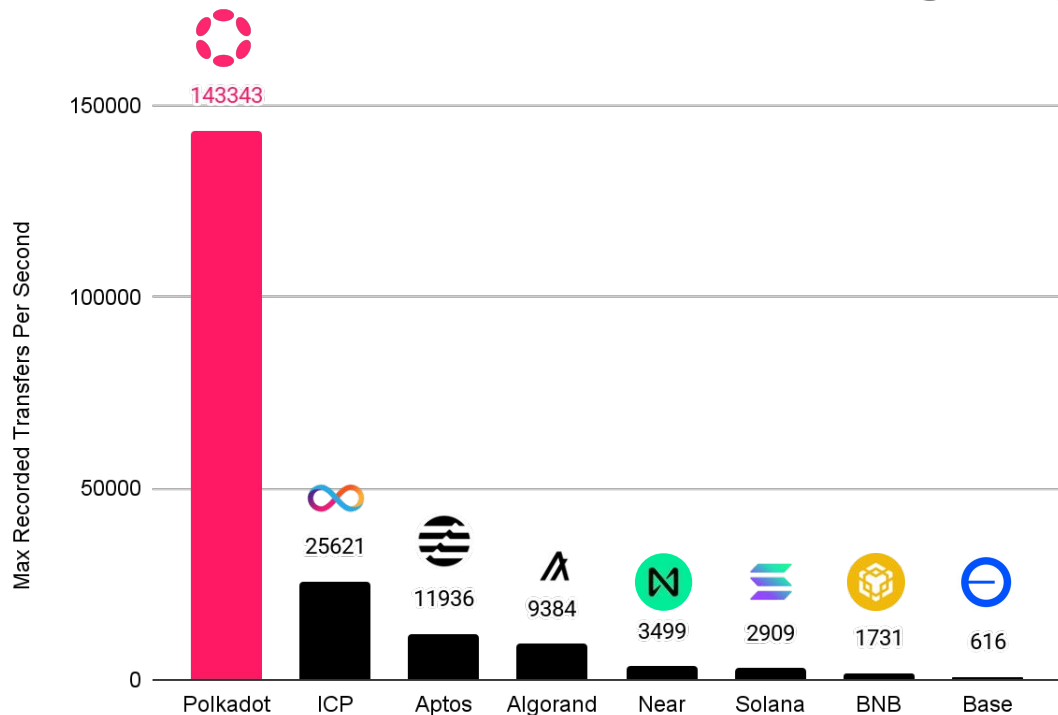
Lower values mean more efficiency and represents a **lower carbon footprint**.

tCO2e/year

Polkadot	Avalanche	Cosmos	Algorand	Cardano	Sui	Near	Solana
71	178	267	352	358	444	917	1621

Source: Crypto Carbon Ratings Institute, October 2023

The Fastest by TPS

Max Recorded Transfers Per Second

Chain	Value
Polkadot	143343
ICP	25621
Aptos	11936
Algorand	9384
Near	3499
Solana	2909
BNB	1731
Base	616

Polkadot scales horizontally through parallel execution.

Polkadot holds the record for most transfers per second recorded and secured by a live production chain.

This was only at 23% capacity, suggesting more than a 4x max throughput.

Source: chainspect.app, February 2025
Learn more at: polkadot.com/spammening

Further Development

Polkadot is way ahead of its peers, and not slowing down at all:

- "**JAM**" is Polkadot's latest technical specification, formalized in the "gray paper".
- It will increase performance of the Polkadot Network by orders of magnitude across all metrics.
- It will make Polkadot a more flexible **Web3 cloud platform**.
- It is being implemented by 35 independent teams across 14 programming languages.
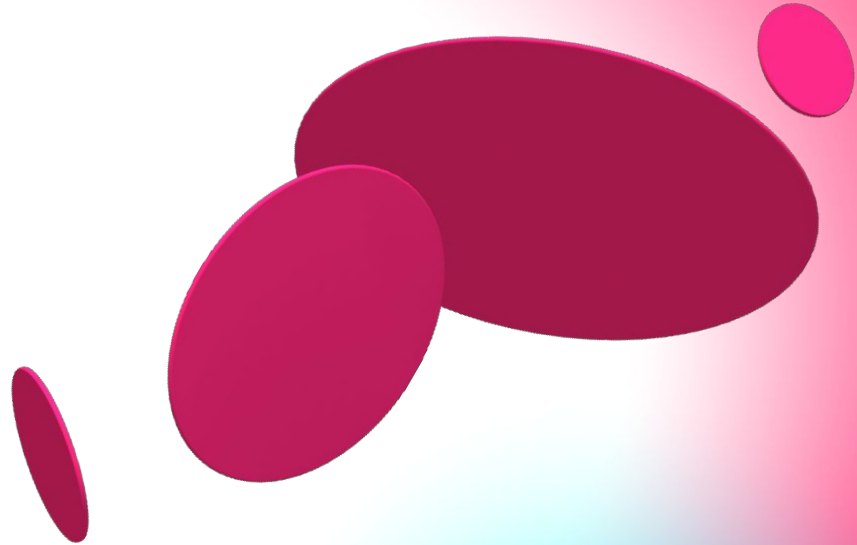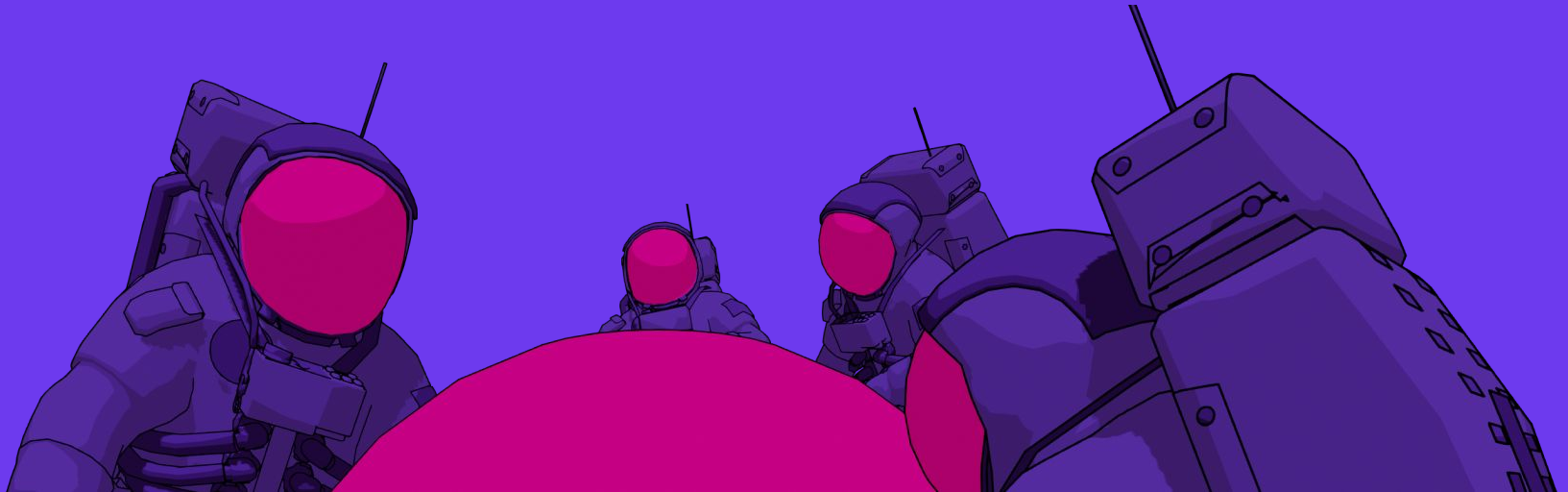
Learn more at: https://graypaper.com/

Resilience Through Decentralization

Community

Everyone in the Polkadot community believes in building a better, more **resilient** world with blockchain technology.

DOT Stakers

Validators

The backbone of Polkadot. They provide security and resilience to the entire network.

1,000+

Nominators

A decentralized selection committee used to find the highest quality validators.

36,000+

Rewards

They are rewarded for their contributions to the network.

~15%

The Polkadot DAO

OpenGov

1,350+
proposals per year

43M
DOT voter turnout

Polkadot's decentralized governance manages everything from the treasury to automated trading and code updates.

Treasury

$200M
treasury size

Polkadot's treasury funds network growth and is automatically replenished by network activity.

Students to Entrepreneurs

February 2023

POLKADOT BLOCKCHAIN ACADEMY

.UBA 200   IALAB

BUENOS AIRES 2023

edX
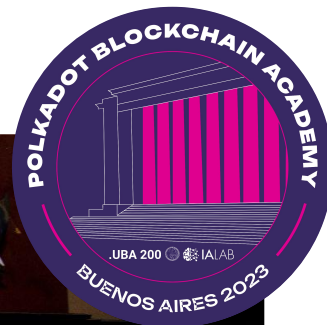
15,000+
Introductory Students
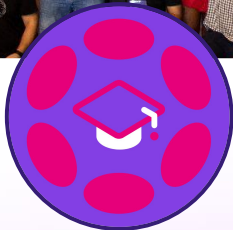
400+
University Level Students

470+
Supported Teams

The Technical Fellowship

Polkadot has one of the largest developer ecosystems among all blockchains.

The technical fellowship is another DAO that helps **train**, **organize**, and **pay** core developers!
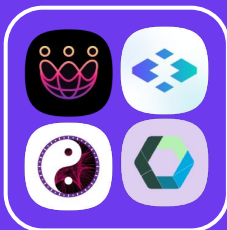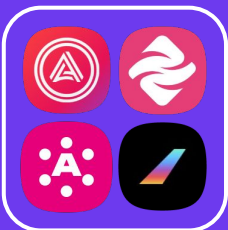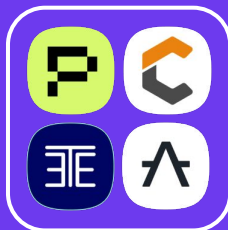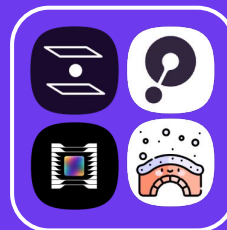
Resilience Through Diversification

Ecosystem
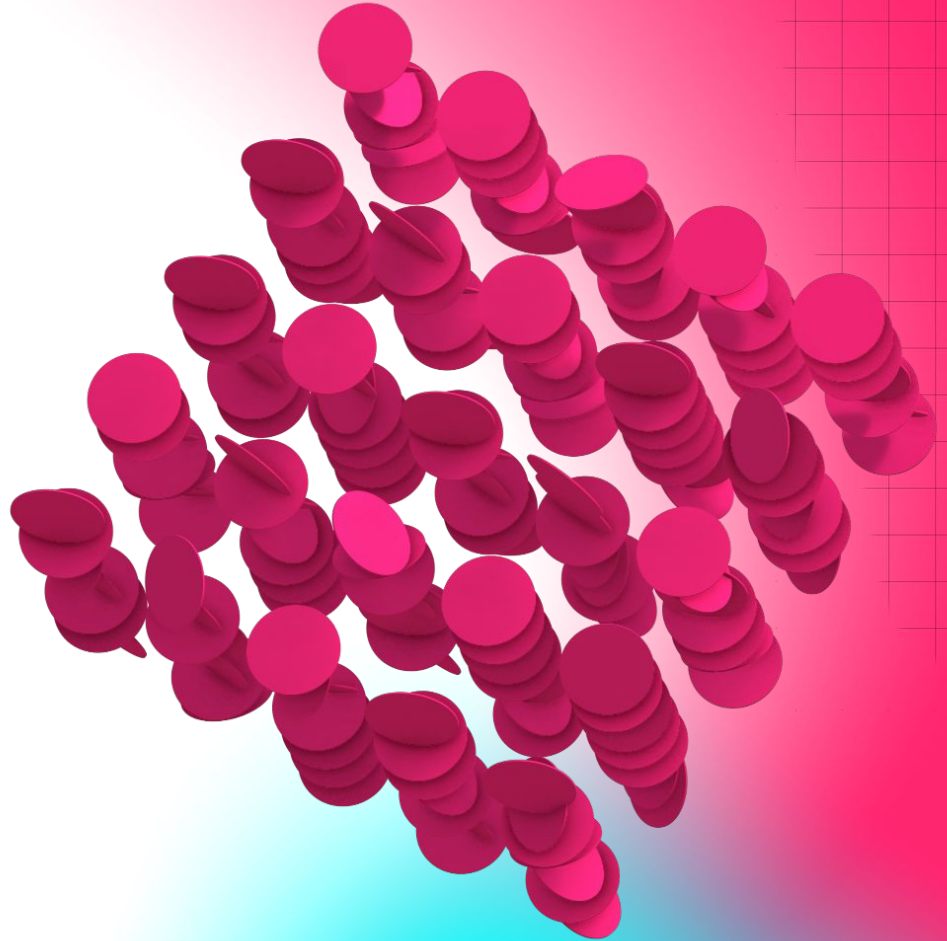
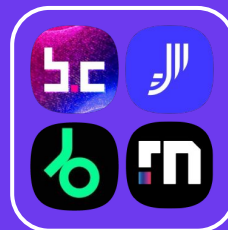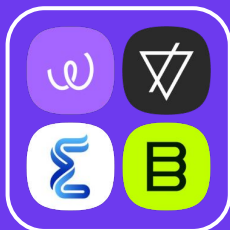Wallets · DAO · DeFi · SocialFi · Privacy · Bridges · RWA
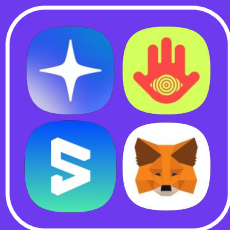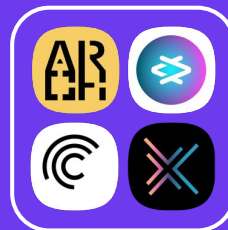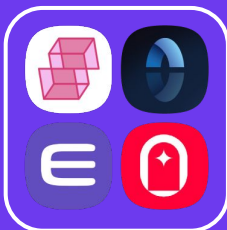
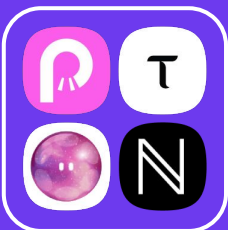Data · Gaming · Identity · NFTs · DePIN · Contracts · Metaverse
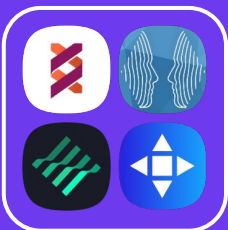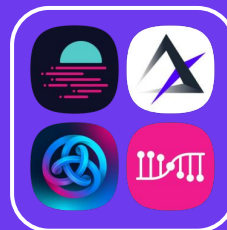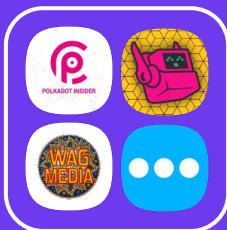
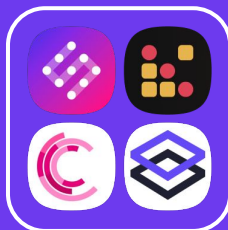Sustainability · Dev Tools · AI · Media · Explorers
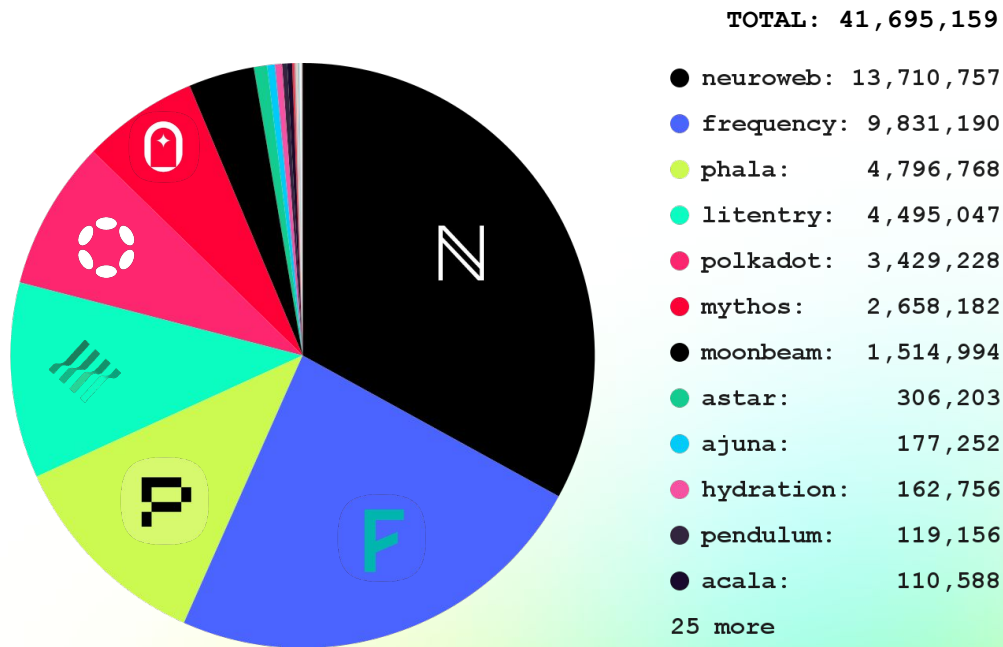
600+
more teams

High Volume, Low Fees

The Polkadot Cloud is already securing over **40M+ transactions per month** across its diverse set of applications and services.

Polkadot's multi-core architecture prevents cross-application congestion caused by transaction volume, ensuring consistently low fees.

TOTAL: 41,695,159

- neuroweb: 13,710,757
- frequency: 9,831,190
- phala: 4,796,768
- litentry: 4,495,047
- polkadot: 3,429,228
- mythos: 2,658,182
- moonbeam: 1,514,994
- astar: 306,203
- ajuna: 177,252
- hydration: 162,756
- pendulum: 119,156
- acala: 110,588

25 more

Source: data.parity.io, November 2024
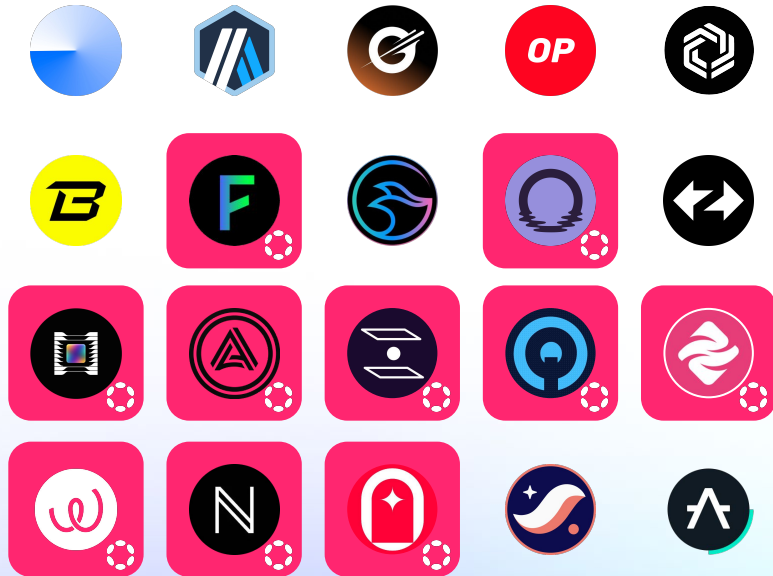
Built to Help You **Scale**

The Polkadot Cloud uses a **pay-as-you-go** model, thus Web3 applications only pay for the resources they use, keeping costs low and predictable.

It also has **elastic scaling**, allowing any Web3 application to dynamically adjust the amount of resources they need based on active demand.

# 10 of the top 20 rollups are powered by the Polkadot Cloud.

And many are exploring beyond DeFi:

- **Frequency**
  - Decentralized social profiles and graphs.
- **Energy Web**
  - Energy industry work packages.
- **NeuroWeb**
  - Verifiable knowledge for AI.
- **Mythos**
  - AAA game assets, ownership, and trading.
- **Hyperbridge**
  - Trustless cross-ecosystem proofs.

Source: tokenterminal.com, February 2025

Polkadot

Use our Technology.
Join our Community.
Build in our Ecosystem.

Join the **revolution**.

Polkadot
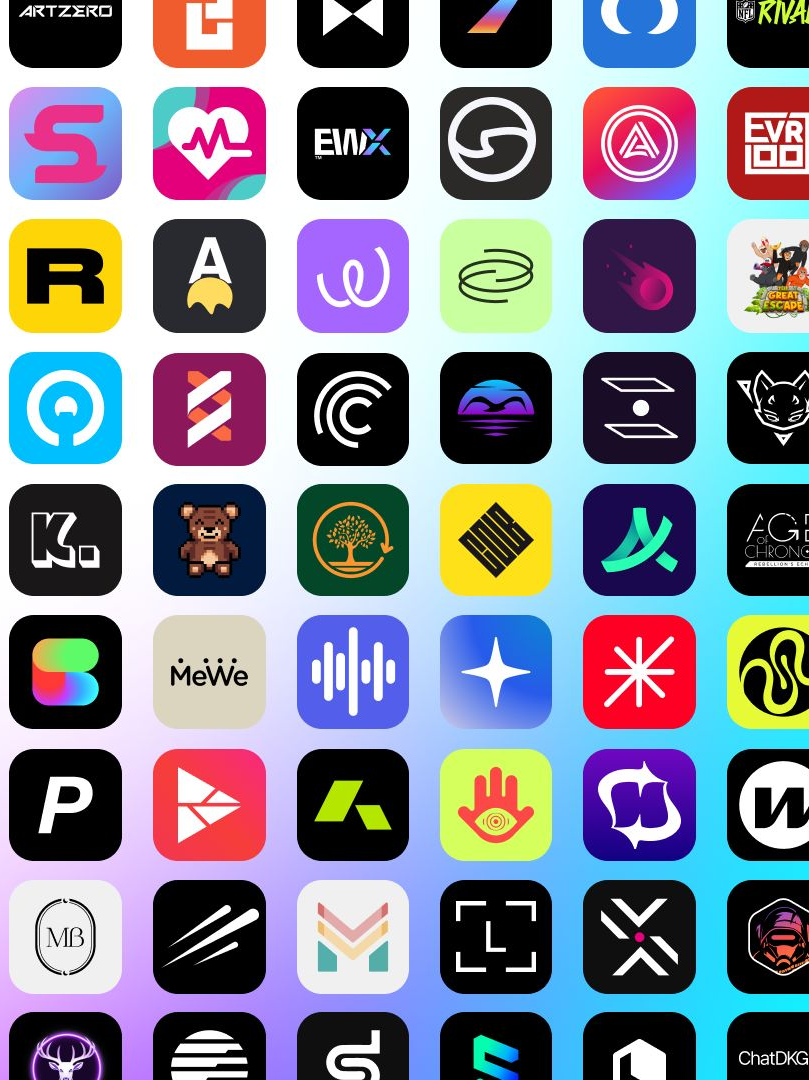
Thank you!

Shawn Tabrizi (@shawntabrizi)

← Link to this presentation.