Unpacking decentralised hosting: 5 Blockchain-based trends to watch out for in 2024

As we move further into an era of technological advancement, our approach to website hosting is shifting in profound ways. The traditional model of centralised hosting, which has been the standard for years, is now facing competition from decentralised hosting.

Temps de lecture : minute

5 October 2024

This newer approach, powered by blockchain technology, offers businesses benefits that are increasingly critical in today's online space, such as enhanced security, resilience and autonomy.

For seasoned business owners and webmasters alike, grasping the nuances of this shift is essential for maintaining a competitive edge as the web becomes more decentralised.

With this in mind, let's explore the basics of decentralised hosting, its implications for website management, and five blockchain-driven trends you should be aware of in 2024.

What is Decentralised Hosting?

There are many different types of web hosting to choose from when securing your server online. Decentralised hosting refers to the distribution of website data across multiple nodes rather than storing it on a single, centralised server.

In traditional hosting models, websites are mostly hosted on servers owned and managed by a centralised authority, such as a web hosting provider like *Hostinger* and other top traditional hosting providers, from which you can choose from a range of web hosting options such as shared hosting, VPS hosting, and cloud hosting.

This said, this centralisation can create vulnerabilities, including the rising risk of data breaches, server downtimes, and censorship. It’s the age-old saying: “Don’t put all your eggs in one basket.”

In contrast, decentralised hosting leverages blockchain technology to distribute data across a network of nodes. Each node holds a copy of the website's data, ensuring that even if one node fails or is compromised, the website remains accessible and secure. This approach not only enhances reliability but also reduces the risk of censorship, as no single entity controls the entire network.

The decentralised nature of this hosting model aligns with the principles of Web 3.0, the next generation of the internet, which aims to create a more open, user-centric web where users have greater control over their data and online presence.

How Blockchain is revolutionising website hosting

Blockchain technology is at the heart of decentralised hosting, providing the framework for secure, distributed data storage. Blockchain operates as a digital ledger, where each transaction or data entry is recorded across a network of computers. These entries are grouped into "blocks" and linked together in a chronological "chain," ensuring that data is tamper-proof and transparent.

Enhanced security

According to *IBM*, blockchain's decentralised nature makes it more secure

than traditional hosting models. Each data block is encrypted and linked to the previous block, making it extremely difficult for hackers to alter or corrupt data.

This takes us one step up from cloud hosting, which is also known as one of the most secure hosting options on the market. With robust physical and virtual server security, cloud hosting offers multiple layers of protection, including firewalls, access control and identity management.

However, more businesses than ever before are choosing decentralised hosting for its cryptographic security features. These are particularly beneficial for businesses that handle sensitive information, such as financial institutions or healthcare providers, where data breaches can have severe consequences.

Resilience and redundancy

The redundancy offered by decentralised hosting ensures that even if one node in the network fails, the website remains accessible through other nodes.

This contrasts sharply with traditional hosting, where server outages can lead to significant downtime. A study by *MarketsandMarkets* projects that the global blockchain market will grow to $67.4 billion by 2026, driven in part by the demand for more resilient hosting solutions.

Transparency and trust

Blockchain’s transparent ledger system allows for greater accountability and trust among users.

According to *Deloitte*, every action within a blockchain network is recorded and visible to all participants, reducing the potential for fraudulent activities and increasing confidence in the integrity of hosted

content. For businesses, this transparency is crucial in industries where trust and verifiability are paramount, such as finance and legal services.

Cost efficiency

For those seeking cost efficiency, a decentralised hosting provider offers an affordable solution without compromising on security or performance.

With scalable plans that adapt to your needs, it's a budget-friendly way to enhance your website's reliability.

By cutting out intermediaries and leveraging peer-to-peer networks, blockchain-based hosting can reduce the costs associated with traditional hosting services.

A report by McKinsey highlights how decentralised technologies can lead to cost reductions by streamlining operations and reducing the need for expensive, centralised infrastructure. This cost efficiency makes decentralised hosting particularly attractive for startups and small businesses looking to maximise their budgets.

5 Blockchain-Based trends in decentralised hosting to watch in 2024

As decentralised hosting gains traction, several trends are emerging that are likely to shape the landscape in 2024. Here are five key trends to watch out for:

1. Interoperability among decentralised networks

One of the challenges of decentralised hosting is the fragmentation of blockchain networks. Different blockchains often operate in isolation, which can limit the functionality and accessibility of hosted content.

However, *Gartner* predicts that 2024 will see significant advancements in blockchain interoperability, enabling seamless communication and data sharing across different blockchain networks.

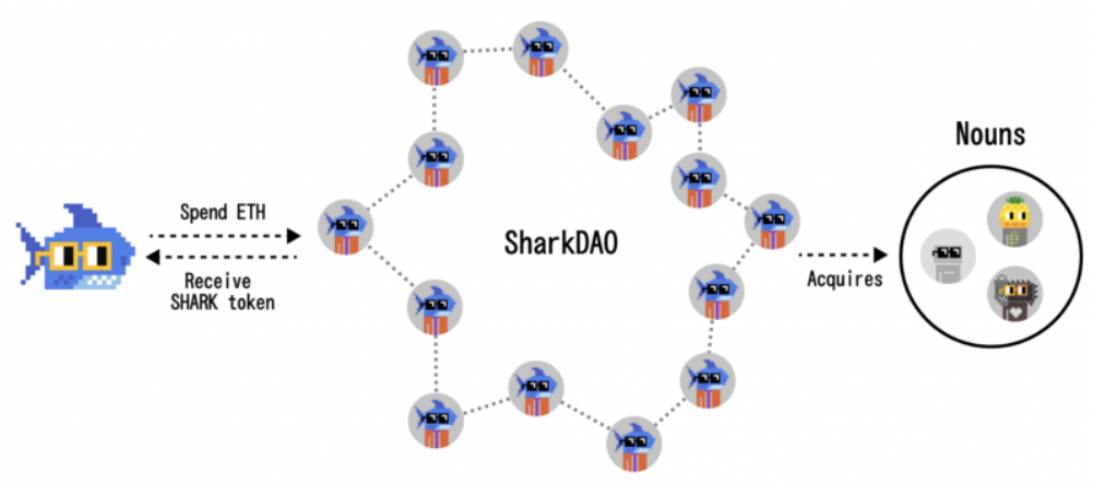
This trend will allow businesses to leverage the strengths of multiple blockchains, creating more robust and versatile hosting solutions. For example, a decentralised hosting provider might use one blockchain for its security features and another for its scalability, offering a hybrid solution that maximises the benefits of decentralisation.

2. The rise of Decentralised Autonomous Organisations (DAOs) in hosting

Decentralised Autonomous Organisations (DAOs) are blockchain-based entities that operate without centralised leadership.

Instead, they are governed by smart contracts and community consensus. In the context of hosting, DAOs can manage and maintain decentralised networks, ensuring that decisions about network upgrades, security protocols, and other key issues are made democratically.

In 2024, we can expect to see more hosting platforms adopting DAO structures. According to a report by *ConsenSys*, DAOs are becoming increasingly popular as a governance model for decentralised platforms, offering greater user engagement and transparency.



(Image Source: *What is a DAO And How DO They Work*)

3. Enhanced data privacy through zero-knowledge proofs

Data privacy remains a top concern for businesses and webmasters, particularly in the wake of increasing regulatory scrutiny.

Zero-knowledge proofs (ZKPs) offer a solution by enabling one party to prove to another that a statement is true without revealing any specific information about the statement itself. In decentralised hosting, ZKPs can be used to verify transactions or data exchanges without exposing sensitive information.

As more businesses seek to enhance their data privacy measures, ZKP technology is expected to play a pivotal role in decentralised hosting solutions in 2024.

According to research published in the *Journal of Cryptography*, ZKPs provide a powerful tool for enhancing privacy in blockchain-based systems, balancing the need for transparency with the requirement for confidentiality.

4. Increased adoption of Decentralised Content Delivery Networks (dCDNs)

Content Delivery Networks (CDNs) are essential for improving website performance by distributing content across multiple servers to reduce load times.

Decentralised CDNs (dCDNs) take this concept a step further by leveraging blockchain technology to distribute content across a peer-to-peer network.

Research by *IDC* indicates that dCDNs are expected to gain widespread adoption in 2024, particularly among businesses that prioritise speed, security, and censorship resistance. By using dCDNs, websites can deliver content more efficiently while benefiting from the enhanced security and decentralisation that blockchain provides.

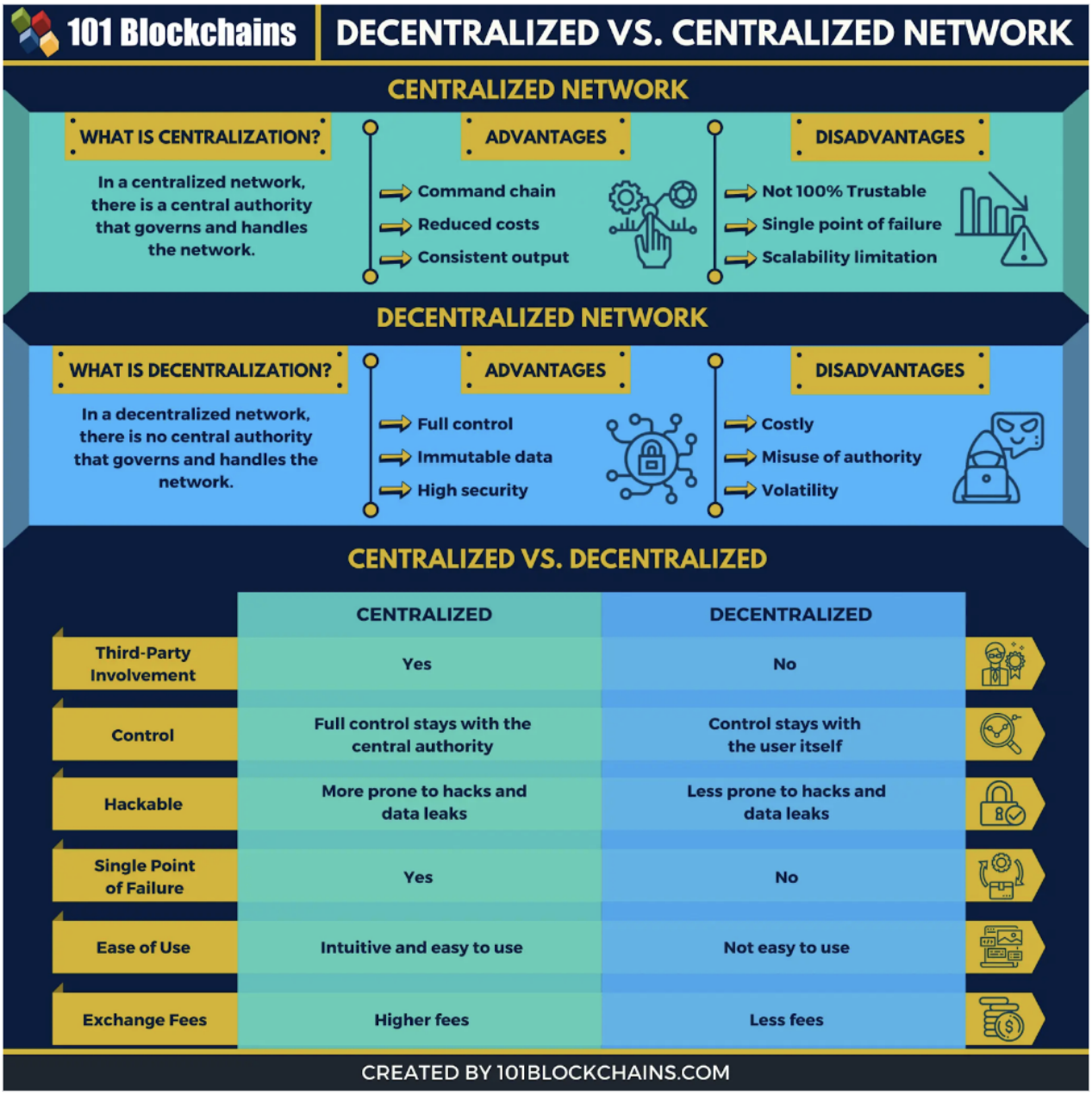
5. Integration of Decentralised Identity Solutions

Decentralised identity (DID) solutions are poised to become a cornerstone of Web 3.0, allowing users to control their online identities without relying on centralised authorities.

In the realm of decentralised hosting, DIDs can be used to authenticate users and grant access to websites or data without the need for traditional login credentials.

A report by the *World Economic Forum* highlights that the adoption of DIDs in hosting is likely to increase in 2024, as businesses seek to enhance security and user experience while complying with data protection regulations. This trend will not only provide users with greater control over their digital identities but also reduce the risk of data breaches associated with centralised identity management systems.

Decentralisation as the new standard for the future of website hosting



(Image Source: *Decentralized vs Centralized: A Complete Comparison*)

As these trends illustrate, decentralised hosting is set to become a major force in the web hosting industry.

For business owners and webmasters, this shift offers a host of benefits,

from improved security and resilience to greater autonomy and cost efficiency. However, it also requires a willingness to embrace new technologies and adapt to a rapidly changing online world.

Businesses that stay ahead of the curve by exploring and implementing decentralised hosting solutions will be more likely to thrive in the current era of Web 3.0. Whether through interoperability, DAOs, ZKPs, dCDNs, or decentralised identity solutions, the future of hosting is decentralised—and the time to start preparing is now.

Article écrit par Rebecca Barnatt-Smith