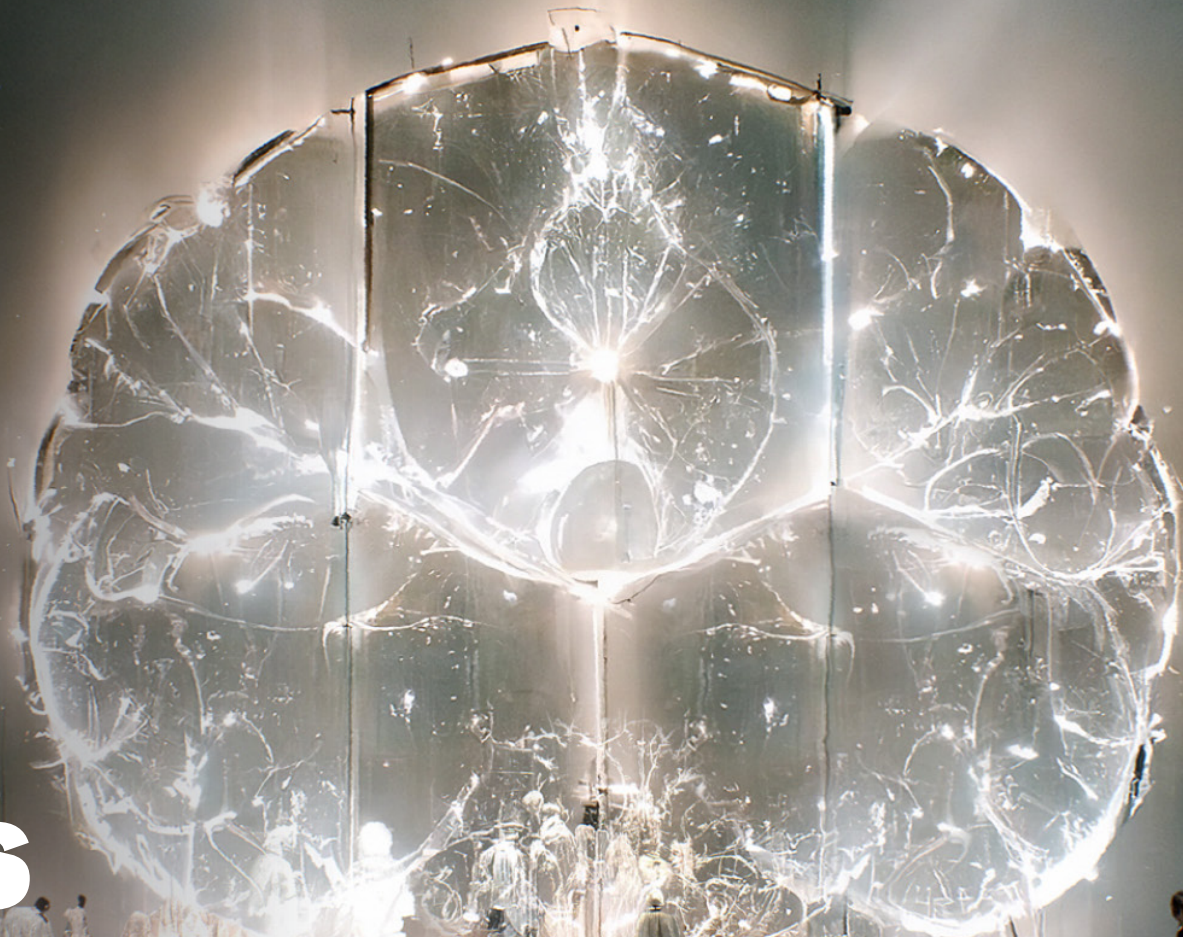


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Tech Trends 2023





Trend 5
In us we trust:
Decentralized architectures
and ecosystems

In an environment of ever-increasing mistrust, blockchain and Web3 could power “trustless” systems that decentralize data to rebuild trust.

We noted last year in [Blockchain: Ready for business](#) that exciting and creative enterprise use cases built on blockchain-powered systems are driving real productivity and value at scale.¹ As organizations begin to understand blockchain’s utility and promise, they’re realizing that stakeholder trust-building could be one of its primary benefits. In fact, blockchain-enabled “trustless” systems—so-called because trust is not placed in a single person or organization but in the community of users—could be an antidote to diminishing faith in government, media, money, businesses, and other civic and private institutions.

From cybercrimes to data misuse, digital trust issues undermine confidence in traditional institutions and the technology that powers them. With digital ledger technologies and decentralized business models that achieve consensus through code, cryptography, and technology protocols, decentralized architectures disintermediate trust and distribute it across network participants.

As decentralized platforms and protocols mature, many organizations are beginning to invest responsibly and explore at their own pace. From everyday enterprise applications to blockchain-native business models, these organizations are demonstrating that none of us is as trustworthy as all of us.

Moving forward, we anticipate further opportunities for organizations to cement their credibility with their key stakeholders by helping reinvent a more decentralized and transparent internet. Web3, what many call this next iteration of the internet, posits a future in which the loudest voices can’t overshadow a single, immutable version of the truth, based on public blockchains. In this world, forward-thinking digital natives are increasingly likely to demand higher-quality proof of truth. Indeed, we anticipate tomorrow’s leaders to assert “chain or it didn’t happen.”

Now

The digital trust gap

Numerous surveys highlight the erosion of the public's belief in civic and private institutions.² Social media and other Web2³ ventures have made it easy to rouse negative emotions against individuals, businesses, and other organizations and institutions, says Nate Rackiewicz, chief data officer of Gannett. "At a prior research company I founded, Meteor Now, we discovered that hatred is the most impactful emotion for driving lift in consumer engagement across media verticals," he says. "We need to be mindful of this risk and on alert for bad actors that may be weaponizing this emotion against us in a quest for clicks."⁴

Disorganized business processes and systems can also lower stakeholder trust. For example, trust is paramount to participants in capital markets, but capital markets infrastructure is typically bloated and inefficient. It often takes six weeks to

issue a bond and 25 days for a dividend to pass from the issuer to the end investor.⁵ Settlement costs increase by 14% year over year, and 27% of settlement systems are more than 20 years old.⁶ Perhaps it's inevitable that the tokenization of assets in capital markets is one of the top enterprise blockchain use cases, with organizations such as Broadridge, Clearstream, and Goldman Sachs using blockchain-based transaction platforms to help eliminate system and process inefficiencies and help increase participants' trust in capital markets.⁷

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**—Nate Rackiewicz,
chief data officer, Gannett**

Businesses that lose the faith of stakeholders can pay a stiff price. Deloitte researchers studied three large global companies, each with a market cap of at least US\$10 billion, that had been embroiled in scandals. The analysis found that the companies lost 20% to 56% of their value—a total US\$70 billion loss—after losing their stakeholders' confidence.⁸

Many organizations build credibility with stakeholders by going beyond traditional business objectives such as product quality, profit, and growth to include environmental, social, and governance (ESG) efforts and diversity, equity, and inclusion (DEI) commitments. Blockchain can help bridge another credibility gap: digital trust.

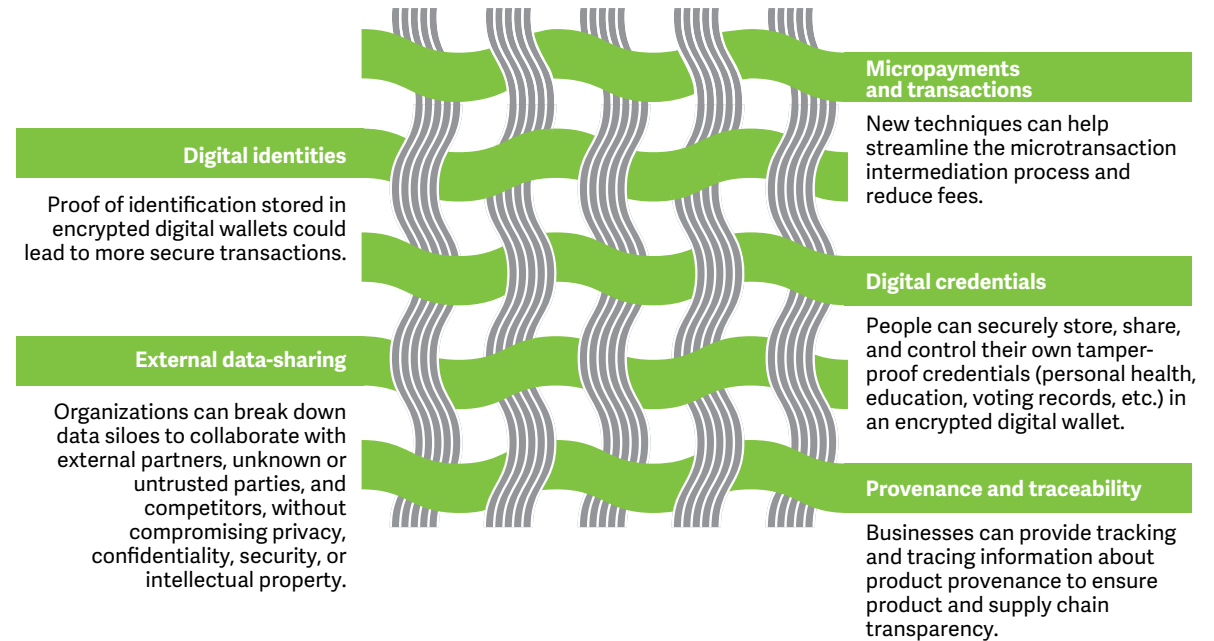
New

Minding the gap

Decentralized systems, applications, and business models add a protective layer to the existing transaction infrastructure, enabling organizations to close the digital trust gap by helping them create a single version of irrefutable truth. They rely on cryptography- and code-driven consensus of systemwide users, rather than moderation by third-party intermediaries—without sacrificing data privacy. The resulting shared, trusted record can be inspected by selected third parties but cannot be controlled by any single, central superuser. A consortium of participants keeps the information up to date so that each participant maintains a copy of the updated, immutable database.⁹

Trust-related use cases include digital credentials and identities, data-sharing with third parties, provenance and traceability, and micropayments and transactions (figure 1).

FIGURE 1: Blockchain-based trust use cases



Source: Deloitte analysis.

Digital credentials

Individuals can own and manage their own tamper-proof credentials for applications such as personal health, education, and voting records in an encrypted digital wallet on their personal devices. Organizations such as [New York State](#) are using blockchain to verify identity and credentials: The Excelsior Pass digital health credential allows New Yorkers to securely store and verify negative COVID-19 test results and vaccination records on their mobile phones without sharing other personal health data.¹⁰

According to Sandra Beattie, the state’s first deputy budget director, credibility with citizens was crucial: “We centered on the belief that the citizen owned their data and transactions, and that our responsibility was to maintain the privacy and security of that data. Citizens had such a positive response to the app because they had trust in us to do that.”¹¹

Digital identities

Similarly, people can leverage blockchain to create, manage, and store their identities in digital wallets, potentially leading to more secure transactions between sellers and buyers, landlords and prospective tenants, and even users of dating apps.

Businesses can verify or issue credentials, identities, and licenses. For example, the BMW Group partnered with the German government on blockchain-based driver’s licenses that help prevent identity fraud and reduce friction in transactions such as renting or purchasing a car and getting insurance.¹²



External data-sharing

Blockchain systems are useful for applications in which multiple external business partners, unknown or untrusted parties, or even competitors need to achieve consensus, and an intermediary isn’t wanted, needed, or feasible. By breaking down the data siloes between such groups, blockchain allows data to flow among organizations without compromising privacy, security, or intellectual property.

For instance, fashion brand LVMH launched the Aura Blockchain consortium to track the provenance of products to prove product authenticity; founding members include fellow luxury brands Prada, Cartier, and Mercedes-Benz.¹³ Members develop their own unique experiences and maintain their own data according to the strictest privacy standards.¹⁴

Provenance and traceability

Like LVMH and its founding partners, organizations in nearly every industry and sector are experimenting with blockchain to help them, their customers, and other stakeholders track and trace information about the provenance of their products.

For example, the Japan International Cooperation Agency (JICA) used a blockchain-based system to monitor child labor on cocoa farms in Côte d'Ivoire. The project aims to make all aspects of the cocoa production process transparent, using blockchain to ensure traceability. Says Yushi Nagano, an economist at JICA, "The beauty of utilizing blockchain is in making an emotional connection from farmers in Côte d'Ivoire to consumers in Japan. Data technology is not cold; it can be warm and emotional, too."¹⁵

Micropayments and transactions

When made in cryptocurrencies, online microtransactions—small payments ranging from a few dollars to even fractions of a penny, as in the case of in-game purchases—can carry transaction fees that are often greater than the transaction cost. New techniques can help make microtransactions more equitable by streamlining the intermediation process and reducing microtransaction fees.

"Data technology is not cold; it can be warm and emotional, too."

**—Yushi Nagano,
economist, JICA**



Next

Chain or it didn't happen

To paraphrase Herbert Simon, theorizer of the concept of attention economics, a wealth of information means a dearth of attention.¹⁶ In Web2's attention economy, truth is devalued in favor of clicks. Social media's balkanization threatens to splinter the internet and intensify outrage and fake news. The increasing use of data and artificial intelligence (AI) leads to charges of bias and the rise of deepfakes, and concerns about the privacy and use of data continue to grow.

Integrating blockchain into new aspects of their technology architectures could help organizations regain the confidence of key stakeholders. In an era of deepfakes, AI-generated imagery, and alternative facts, seeing something with your own two eyes is not necessarily sufficient proof of the truth. But if an entire community sees it on a public blockchain? Trustless, decentralized platforms could become an arbiter of truth: Chain or it didn't happen.

Here are a few of the possibilities:

Web3

Blockchain, decentralization, and tokens are at the heart of the next iteration of the internet, Web3. "Web3 makes the most passive consumer into a community member," says Ridhima Khan, vice president of business development at [Dapper Labs](#), which uses blockchain technology to bring nonfungible tokens and new forms of digital engagement to consumers. "It's here to stay, and it's going to hit every sector and industry."¹⁷

By changing how content is made, managed, protected, and monetized, Web3 could rescue us from its predecessor's obsession with clicks and likes. A disintermediated web has the potential to transfer power from intermediaries to producers and consumers.

- **Producers.** In a Web2 world, "digital" is synonymous with "abundant." Nearly all digital content is infinitely shareable, legally or not. The infinite supply of content drives demand (prices and consumer attention) toward zero. By introducing the notion of "digital scarcity," Web3 architectures offer creators an opportunity to reassert some ownership and control of their content, data, profiles, and identities, with the ability to manage and monetize them across multiple websites and platforms rather than creating multiple copies. Creators could lock access to a song, video, or other intellectual property so it's only accessible via smart contract and programmable money, with the potential for revenue to be shared in real time.

- **Consumers.** The decentralized web could transfer ownership and control of identifying information and other personal data from intermediaries to individual consumers. End users could store their identifying information in a blockchain-based digital wallet and use it across multiple platforms, applications, and websites instead of creating a new identity for each one. This could give consumers more authority over data privacy and access, provide more protection from hackers, and allow them to monetize their data. With more control over their browsing and buying data, consumers could reduce email spam and unwanted advertising, or be compensated for providing their information or accepting email advertisements.¹⁸

Digital advertising

With consumers in charge of their own buying and browsing data, blockchain could significantly disrupt digital advertising. In addition to giving consumers control over their data and who uses it—in itself a massive disruption—it could also help eliminate advertising fraud caused by internet bots and domain spoofing, which fraudulently create traffic, clicks, impressions, conversions, or other data events that one research firm estimates will cost global advertisers US\$68 billion by the end of 2022.¹⁹ Adding a trust layer to the digital advertising process could help advertisers receive more representative data about the consumers reached by their ads.²⁰

Artificial intelligence

As we discuss in [Opening up to AI: Learning to trust our AI colleagues](#), enterprises understand the power of AI to transform their operations, but they often doubt AI’s ability to complete mission-critical tasks.²¹ Consumers, too, are wary of AI,²² with critical issues being the lack of transparency, interpretability, and explainability. In both cases, people don’t have confidence in AI because they don’t understand its decision-making process, and they’re leery of the data used to train it.²³

Blockchain’s transparency and immutability could provide insight into the origin, integrity, and authenticity of the data used by AI, improve the security of the data by preventing it from being altered, and provide an audit trail.

Cybersecurity

Many of the attributes of decentralized architectures could lead to better cybersecurity in the long term. For example, transferring control of digital identity from the platform to the user could help reduce the amount of sensitive data stored by third parties and eliminate single, data-rich attack points. It would be difficult for hackers to compromise enough network nodes to control the consensus mechanism used to validate data blocks. And encrypting the entire blockchain can help ensure that the data stored within it is not accessed or changed wrongfully and provides an audit trail.²⁴

While many public blockchains lack complete privacy and security, more trusted, secure options that reduce cyber risk are available. In non-public networks, only select, verified members can participate; in permissioned networks, those with a verified identity can join, and activities are controlled via permission-based roles.

Organizations are beginning to discover how trustless business models and operations could help them solve data-related credibility issues and win much-needed confidence across employee and customer groups, business ecosystems, and industries. And there are positive societal implications to consider as well.

Amid a crisis of faith in which seeing isn't believing, and people can't tell the truth from a lie, many of us have been waiting on a superhero: a person, company, or technology that might somehow serve as an unimpeachable arbitrator to help us settle quarrels and distinguish fact from fiction. Decentralized, trustless architectures are beginning to teach us that we are the heroes we've been looking for; and that none of us, in fact, is as trustworthy as all of us.



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