Blockchain Platforms

SUMMARY: Blockchain technology uses a distributed digital ledger to record data, contracts, and transactions, financial and otherwise, without the need for third-party validation. While bitcoin was the first proof-of-concept for the efficacy of blockchains, blockchains have applications beyond virtual currencies. By embedding trust in the algorithms of the blockchain, blockchains can enable trustless transactions and data exchanges, eliminating the need for supervision by intermediaries or government authorities.

Forecasts

- The financial services sector is working to mainstream blockchain. Stable and secure blockchain platforms could drive decentralization of global finance by embedding trust and transparency into blockchain platforms.
- Blockchain is likely to be a disruptive technology. While incumbent firms are introducing the technology, blockchain platforms are likely to create opportunities for new entrants and entirely new types of services.
- Blockchain platforms will be developed for a wide variety of non-financial applications, such as education credentialing, worker-reputation systems, and supply chain management.

Key Uncertainties

Ability of incumbents to capture the emerging blockchain market

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Scalability of blockchain to handle millions of simultaneous transactions

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Security of blockchain and ability to resist hacking and subversion

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Willingness of HR and credentialing institutions to adopt blockchain technologies

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Supporting Trends

- **Companies on blockchain.** New companies are being created on blockchain software, such as distributed autonomous organizations (DAO), a kind of corporation that exists as software code and smart contracts.
- **Commercialization of blockchain.** Blockchain technologies are being commercialized into mainstream financial products.
- **Smart contracts.** Smart contracts could replace conventional contracts with algorithmically enforced digital agreements.
- **Criminal use of blockchain.** Blockchain is being used in criminal activities ranging from identity theft to drug trafficking and money laundering.
- **Blockchain for cybersecurity.** Blockchain's inherent security features are being applied to a multitude of cybersecurity issues.
- **Internet of things.** The internet of things (IoT) is the next wave of internet development, extending internet connectivity and interaction to billions of objects and devices.
- **Data-trail control.** People are generating vast data trails of personal information, leading to growing questions about who should own and control that data.

Related Drivers of Change

- Anticipatory Intelligence
- Reputation by the Numbers
- Declining Trust
- Ethical Edge of Innovation

Notable Data Points

MAINSTREAMING BLOCKCHAIN

The World Food Programme's use of Ethereum cryptocurrency as a payment mechanism for food aid **saved $150,000 a month by eliminating 98% of bank transfer costs.**

Source: Jonathan Tirone, "Banks Replaced With Blockchain at International Food Program," Bloomberg, February 16, 2018.

BLOCKCHAIN GROWTH

Global spending on blockchain development and services is **forecasted to grow from $1.8 billion in 2018 to $8.1 billion in 2021.**

Source: International Data Corporation

BLOCKCHAIN SCALABILITY

The Mitsubishi UFJ Financial Group and Akamai Technologies are developing a scalable blockchain that, when mature, will be able to handle up to **10 million transactions per second.**

Source: Robert Hackett, "Japan's Biggest Bank to Switch on Blockchain Payments in 2020," Fortune, May 21, 2018.

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Strategic Insights

- Blockchains can be applied to credentialing, simplifying the verification of degrees and certifications. Associations could accelerate this process by developing or participating in blockchain-based certification platforms. This could bolster the credibility of credentials created by new approaches to microlearning, distance education, or continuing education.
- Blockchains could be used in scientific publishing to validate and archive the underlying datasets used in studies. This could increase the credibility of research and make it easier for scientists to attempt to replicate scientific findings.
- Blockchains could enhance the transparency of emerging worker-reputation systems, providing an unalterable record of verified evaluations. Associations could certify their members in such blockchains or start more ambitious initiatives for specialized reputation blockchains within their industry.
- Blockchains can be used to verify the provenance of products across distributed global supply chains. Associations could collaborate with companies or other industry associations to develop inter-industry blockchains that provide supply chain transparency and security.

Timing

- **Stage:** Emerging
- **Speed:** Medium, though early innovation is happening rapidly

Potential Alternative Futures

- **Blockchain blowup:** Blockchains prove inefficient at mass scale, or too insecure for critical transactions. The technology is only adopted in small niches and is rejected by the mainstream.
- **Blockchain takeover:** Financial services companies jumpstart early blockchain applications. They successfully use blockchains to transition into the next era of financial services.
- **Blockchain disruption:** Blockchain services are introduced by upstart firms, directly competing with industry incumbents. Over time, these services gradually erode the power of dominant transaction gatekeepers.

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Take Action

- **Alert members to emerging technologies.** Associations need to be constantly scanning the horizon for emerging technologies like blockchain, clarifying their utility, and explaining why and how members might use them. Association boards should regularly explore the implications of new technological capabilities.
- **Help members learn faster.** Associations are safe places to gain expertise in emergent capabilities. Identify pioneering members willing to share what they are learning. Provide timely learning experiences and briefs to get your members up to speed. Look to early-adopting industries to explore how they are using new technologies to solve similar problems your members have.
- **Define potential use cases for your industry.** Blockchain platforms offer potential solutions for data-intensive transactions that now require third-party verification. Many uses are likely to be internal rather than customer-facing. Associations can research these uses and help accelerate development by convening members eager to collaborate in research and development.
- **Keep standards and regulations in sync with new technologies.** Blockchain is a good example of an alternative solution proposed in areas now subject to extensive standards and regulations. Could blockchain platforms offer a way to efficiently verify regulatory compliance or even replace cumbersome and restrictive systems? Standard-setting organizations have to look ahead to consider the implications and possibilities.
- **Consider cryptocurrencies' potential for international transactions.** Global associations may get member requests to use cryptocurrencies to minimize the cost of currency exchange for everyday association transactions like paying member dues, conference registrations, and other purchases. Even if bitcoin isn't yet a viable solution, an alternative and universal payment system might someday exist.

Keyword Search

To continue researching this change driver, use combinations of these search terms: ***blockchain, distributed ledger, bitcoin, Altcoins, Ethereum, cryptocurrency, smart contracts, blockchain applications, BankChain, fintech, finance, proof of stake, ICO, initial coin offering, utility coin***

Who Will Be Affected

Trade associations in industries that need greater efficiency and transparency in data-intensive transactions will be working to pilot test and scale up blockchain platforms. Professional associations training people for these industries will need to help members learn and anticipate these developments. Business and technology partners will be essential to bringing these new capabilities online.

About ASAE ForesightWorks

ASAE ForesightWorks is a deliberate, evidence-based research program and emerging line of products to provide association professionals with a continual stream of intelligence about the changes facing the association industry, including:

- regularly updated action briefs;
- tools for applying insights from the research in your association;
- guidance in performing environmental scans; and
- opportunities to engage with peers around the research.

Ultimately, the program's mission is to empower association leaders to create a culture of foresight.

Check **asaecenter.org/ForesightWorks** and follow **@ASAEfdn** on Twitter for updates on new findings and events.

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