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WORLD ECONOMIC FORUM

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Blockchain
Dynamic Briefing

Generated 25 January 2021 for Gustavo Figueroa

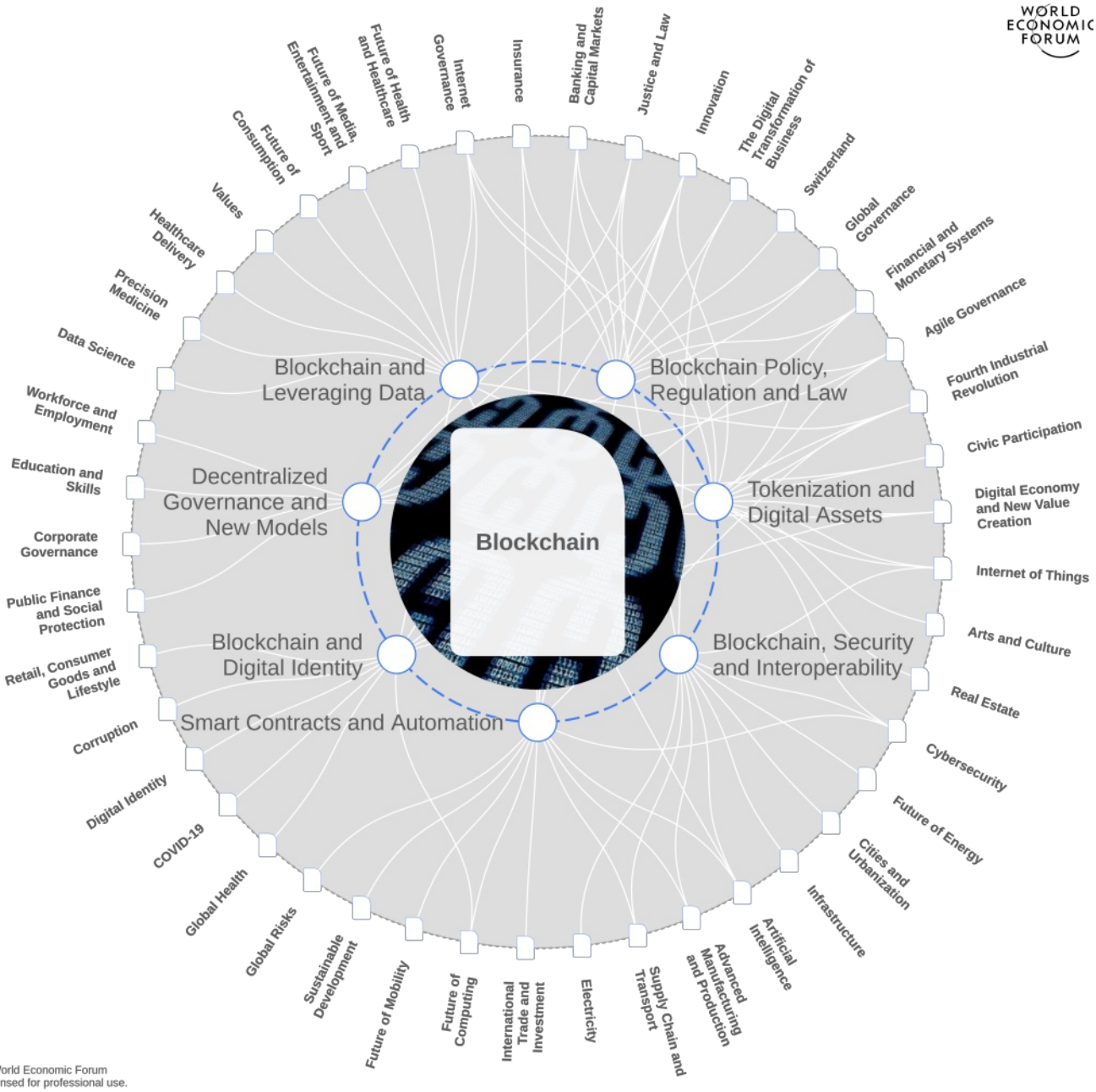
Blockchain

Co-curated with **Korea Advanced Institute of Science and Technology (KAIST)**

Last review on Fri 13 November 2020

About

This dynamic briefing draws on the collective intelligence of the Forum network to explore the key trends, interconnections and interdependencies between industry, regional and global issues. In the briefing, you will find a visual representation of this topic (Transformation Map – interactive version available online via intelligence.weforum.org), an overview and the key trends affecting it, along with summaries and links to the latest research and analysis on each of the trends. Briefings for countries also include the relevant data from the Forum's benchmarking indices. The content is continuously updated with the latest thinking of leaders and experts from across the Forum network, and with insights from Forum meetings, projects communities and activities.



Executive summary

Blockchain can enable greater trust and transparency through decentralization, cryptography, and the creation of new incentives. Best-known as the digital underpinning of Bitcoin, it has evolved into a foundational technology with promise in many areas and applications. The financial sector is investigating blockchain as a means to replace expensive and inefficient payment systems, and it could reshape supply chains - particularly in combination with the Internet of Things and artificial intelligence - while boosting the practical, day-to-day use of smart contracts, digital currencies, and digital identities. However, blockchain is not a silver bullet. Many questions remain about the best use of the technology and its governance.

This briefing is based on the views of a wide range of experts from the World Economic Forum's Expert Network and is curated in partnership with Dr. Kibae Kim, Principal Researcher at Korea Advanced Institute of Science and Technology (KAIST).

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The technology can provide infrastructure for data sharing, exchange, and ownership.

Blockchain Policy, Regulation and Law

Places that have adopted relatively accommodating stances, like Switzerland, have seen an influx of companies

The decentralized nature of blockchain technology can easily come into conflict with regulations requiring centralized monitoring, evaluation, and decision-making - especially when it comes to sensitive financial transactions. In recognition of this potential conflict, some countries have been creating regulatory sandboxes that enable experimentation and, potentially, more agile policy-making. For example, the Financial Conduct Authority (FCA) in the United Kingdom launched a regulatory sandbox in 2017 in order to enable more innovative businesses to test their products with real people albeit with safeguards in place. This created an opportunity for the authority to learn about policy and regulatory needs in an experiential, real-time way, and adapt accordingly (other countries including Singapore, South Korea, and India have since emulated this sandbox model). In the 2020 cohort of the FCA Sandbox, six were participants focused on distributed ledger technology (a category that includes blockchain) and digital assets. However, particularly given the borderless and distributed nature of distributed ledger technology, which enables the simultaneous recording of transactions in in multiple places, greater international cooperation with such government efforts is called for.

In a repeat of the current situation when it comes to the global regulation of financial and monetary systems, fragmentation has created several barriers for blockchain-focused companies. This can exist even within a single country; many different states across the US, for example, taking varying approaches to regulating the use of the technology. And, beyond the technology itself, blockchain's introduction and enabling of entirely new business models has brought regulators in charge of overseeing a functioning private sector into unchartered territory. Those places that have adopted relatively crypto-friendly stances, such as Switzerland, have attracted an influx of companies - a "Crypto Valley" has formed around the Swiss city Zug, for example, and many consortia including the Libra Association have incorporated as Swiss-based entities. Ultimately, the foundational nature of blockchain technology means that it intersects with an array of industries, like payments and supply chains, each of which has its own intricate set of policies and regulations. It remains to be seen whether these industries will be able to adapt sufficiently to make the best use of the technology.

Related insight areas: Internet Governance, Insurance, Banking and Capital Markets, Justice and Law, Innovation, The Digital Transformation of Business, Switzerland, Global Governance, Financial and Monetary Systems, Agile Governance

World Resources Institute

Locally Led Climate Adaptation: What Is Needed to Accelerate Action and Support?

22 January 2021

This working paper examines the existing literature on locally led adaptation, looking at efforts that have optimized finance through direct and consistent collaboration with local actors and identifying initiatives that embody locally led principles rather than traditional stakeholder consultation or participation. In line with the Global Commission on Adaptation's Year of Action, the authors sought to identify specific projects and designs that aim to catalyze accelerated action and support for locally led adaptation.

SpringerOpen

Regime specific spillover across cryptocurrencies and the role of COVID-19

06 January 2021

The aim of this study is to examine the daily return spillover among 18 cryptocurrencies under low and high volatility regimes, while considering three pricing factors and the effect of the COVID-19 outbreak. ...

International Monetary Fund (IMF)

Fintech and the Future of Mobile Money

10 December 2020

Harvard Business Review

What Does PayPal's CEO Think About Bitcoin?

01 December 2020

World Economic Forum

The Global COVID-19 Fintech Market Rapid Assessment

06 November 2020

Tune in to this virtual session on 30 November 2020 from 7am EST – 830am EST. (13:00-14:30 CET).

Tokenization and Digital Assets

Digital representations of value on blockchain open up new possibilities for finance and asset ownership

Digital currency - perhaps the best-known application of blockchain technology - has a wide variety of potential uses. Bitcoin, for example, is viewed by many as a potentially critical store of value; the payments company Square said it invested $50 million in the cryptocurrency in 2020 “as in instrument of economic empowerment,” around the same time that Fidelity Investments launched its first Bitcoin fund. Central Bank Digital Currencies (CBDCs) are meanwhile being explored for everything from consumer payments to inter-bank settlements. It is estimated that more than 40 central banks have or are exploring CBDC issuance, with China’s on track to be the first. One particular form of digital currency, “stablecoins,” is pegged to a fiat currency and is being closely watched not least due to Facebook’s announced plans to issue stablecoins including a “Libra” coin that is a composite of others. In addition, a completely new funding model, initial coin offerings (ICOs), has increased the public visibility of blockchain and digital assets as people have become able to buy into companies via coins representing different entitlements.

The intersection of automation and digital assets has enabled a so-called decentralized finance, or “DeFi,” ecosystem - which can potentially automate many of the processes deployed by centralized (and often costly) financial intermediaries for the purposes of lending, exchanges, and derivatives. Blockchain technology can also introduce new asset management models, if and when tangible and movable properties are registered and tokenized - that is, mapped with digital references to valuable or sensitive elements for security purposes. For example, fine art and real estate could each theoretically be tokenized, making the management and ownership of these potentially pricey assets possible “on-chain.” In such a system, professional agencies could be relied upon to oversee the digital management of properties and shape specialized markets for their trading, which could function much like existing financial markets. However, new and sophisticated rules are needed for the next-generation, blockchain-based economy - and they will have to be adequately enforced - in order to help ensure the stability of digital markets and to bolster the legal protection of consumers.

Related insight areas: Innovation, Fourth Industrial Revolution, Civic Participation, Banking and Capital Markets, Digital Economy and New Value Creation, Internet Governance, Agile Governance, Internet of Things, Financial and Monetary Systems, Arts and Culture, Real Estate, Cybersecurity

Asian Development Bank

Fintech can drive a strong post-COVID-19 recovery in Asia

18 January 2021

The pandemic has highlighted the power of digital technology. Now is the time to harness this power for inclusive growth so that communities, especially in poor and remote areas, can survive the crisis and thrive.

Bocconi Knowledge

Andrea Resti Gets a European Parliament Grant

21 December 2020

For a study on shadow banking regulation, to be concluded by May 2021.

Scientific American

2020's Top 10 Tech Innovations

09 December 2020

Scientific American and the World Economic Forum sifted through more than 75 nominations for the most innovative and potentially game-changing technologies in 2020. The final top 10 span the fields of medicine, engineering, environmental sciences and chemistry. And to win the nod, the technologies must have the potential to spur progress in societies and economies by outperforming established ways of doing things. They also need to be novel (that is, not currently in wide use) yet likely to have a major impact within the next three to five years. Here's your guide for the (hopefully) near future. Read the full report here .

Frontiers

Analysis Techniques for Illicit Bitcoin Transactions

30 November 2020

This comprehensive overview of analysis techniques for illicit Bitcoin transactions addresses both technical, machine learning approaches as well as a non-technical, legal, and governance considerations. We focus on the field of ransomware countermeasures to illustrate our points.

VoxEU

Central bank digital currencies: Drivers, approaches, and technologies

28 October 2020

Central bank digital currencies are in the limelight. Yet the motives for issuance and, relatedly, the policy approaches and designs differ. This column surveys the drivers, policy approaches and technical designs, based on a comprehensive and publicly available database. It finds that all Central bank digital currency projects aim to complement cash rather than replace it. Many projects would allow for an important role of the private sector in the payment system.

Blockchain, Security and Interoperability

The technology's unique aspects and vulnerabilities must be considered during the design process

One of the major selling points of blockchain is the ability to converge it with other core technologies of the Fourth Industrial Revolution in creative ways. Starbucks, for example, announced plans to develop an artificial intelligence-based demand forecast and logistics management system called Deep Brew. The artificial intelligence aspect of the system relies on data aggregated through the Internet of Things from the coffee company's equipment and products, which can then be traced transparently through blockchain. Many governments have begun lending support to businesses to pursue such efforts by funding and developing the infrastructure necessary for smart cities and smart factories. As with most other technologies, the ultimate level of security that is afforded by blockchain technology boils down to decisions made during the design process. While many aspects of blockchain design, such as evaluating trade-offs among the confidentiality, integrity, and availability of data, are similar to or the same as those that apply to other cybersecurity evaluations, blockchain also involves often unique, added elements such as decentralization, consensus mechanisms, cryptography, and smart contracts.

Given the relatively early stage of the technology's development, our understanding of blockchain's vulnerabilities and related best practices grows every day. Its nascent state of development is an important consideration when it comes to scaling applications built on top of blockchain - especially those containing sensitive data. Another important technical consideration where blockchain is involved is interoperability. Currently, the options for communicating between blockchain systems are limited - which means often replicating or creating new siloes for information-sharing. There are several efforts underway to explore potential new commercial interoperability solutions, such as such as the open-source project Polkadot, the decentralized Cosmos network, and the Interledger network of exchanges, though they are all still at relatively early stages. Meanwhile standardization efforts, which are key to achieving cross-protocol information sharing, are also relatively immature when it comes to blockchain - and so far suffer from both limited coordination and uptake. In addition, blockchain interoperability needs to be envisioned beyond the infrastructure layer, and should involve platform considerations, like consensus mechanisms and authentication, in addition to business aspects like commercial models and legal frameworks.

Related insight areas: Justice and Law, Internet of Things, Cybersecurity, Future of Energy, Cities and Urbanization, Infrastructure, Artificial Intelligence, The Digital Transformation of Business, Advanced Manufacturing and Production, Supply Chain and Transport, Electricity

Business and Human Rights Resource Centre

YouTube freezes Trump's channel & deletes recent video

13 January 2021

"YouTube suspends Trump's channel and deletes recent video", 13 Jan 2021 YouTube has frozen Donald Trump's channel on the platform, suspending it for at least a week from uploading new videos and deleting a recent video following ongoing concern of "potential for violence". Google-owned YouTube joined its fellow social media giants Twitter and Facebook in their crackdown on the US president over the fear of rerun of the US Capitol mayhem on 6 January. "In light of concerns about the ongoing potential for violence, we removed new content uploaded to Donald J Trump's channel for violating our policies," YouTube said in a statement. "As a result, in accordance with our long-standing strikes system, the channel is now prevented from uploading new videos or livestreams for a minimum of seven days—which may be extended.".

World Economic Forum

The missing link between blockchains and enterprises

15 December 2020

It has been difficult to connect blockchains with existing systems, slowing down adoption. Blockchain oracles provide the infrastructure to fill this gap.

Project Syndicate

COVID-19 and the End of Cash: Is Money Moving to Digital?

07 December 2020

With an increase in digital translations and contactless payments, the COVID-19 pandemic has brought us closer to a cashless future. In the latest installment of CoronaNomics , PS contributors Kenneth Rogoff and Howard Davies join The Independent 's Ben Chu and The Telegraph 's Lizzy Burden to ask whether the end of cash has been exaggerated and to discuss the implications of leaving cash behind.

Quanta Magazine

Computer Scientists Achieve 'Crown Jewel' of Cryptography

10 November 2020

A cryptographic master tool called indistinguishability obfuscation has for years seemed too good to be true. Three researchers have figured out that it can work.

Smart Contracts and Automation

Blockchain has the potential to change everything from production to lifestyles

"Smart" contracts are blockchain technology-based and self-executing. That means that they have conditions embedded within their underlying code - formulated as 'if X happens trigger Y,' for example - which makes the resulting interactions immutable and censorship-resistant, some of the primary characteristics that have helped to make blockchain distinct and desirable. This ability to automate has shown particular promise in a variety of areas, from the functioning of supply chains to providing insurance. When combined with Internet of Things (IoT) devices, for example, self-executing contracts can facilitate the automation of tasks that were previously manual, such as receiving a series of necessary signatures and verifications. One specific potential example is travel insurance that guarantees a refund for a cancelled flight - currently, this can be a lengthy process that involves multiple phone calls, filing a claim, and other time-consuming tasks. By using smart contracts, however, a reimbursement could theoretically be automatically issued once pre-populated data provided by the airline reflects that the flight in question was indeed cancelled.

Smart contracts are a critical element of "decentralized applications," or DApps, which by virtue of running on blockchain can be free from the interference of a single authority or entity (as opposed to an application like Uber, for example, which is run by one company). They are also core to decentralized autonomous organizations (DAOs), which are controlled by members without a hierarchical structure, and to the decentralized finance movement (DeFi) - which advocates for a system that is not reliant on intermediaries like banks, and could play a significant role in the future of smart factories and smart cities. However, technical and governance gaps remain. For example, the minimization or potential elimination of human involvement makes data integrity crucial, though a large amount of data entry remains subject to error - especially when it comes to cataloguing "off-chain" activities. Until there can be absolute confidence in the underlying data, automation can lead to costly mistakes. In addition, the legal enforceability of smart contracts remains in question, particularly given regulatory fragmentation on the subject.

Related insight areas: Insurance, Cybersecurity, Fourth Industria Revolution, International Trade and Investment, Future of Computing, Future of Mobility, Banking and Capital Markets, Artificial Intelligence, Innovation, Supply Chain and Transport, Sustainable Development, Advanced Manufacturing and Production, Global Risks

Brookings

The new urgency of global tech governance

07 January 2021

Landry Signé, Mark Esposito, and Sanjeev Khagram underscore the urgent need for international rules and standards governing data to catch up with the accelerated diffusion of digital technologies during the COVID-19 pandemic.

LSE Business Review

Central bank digital currency – nine key questions answered

15 December 2020

Central bank digital currency is turning into a pre-occupation of central banks and much of the fintech world. Hundreds of pages of analysis have been produced in the last eighteen months. However, the concept dates back almost three decades and has so far had little impact on the world. So, what are the essential questions about CBDC that need to […].

Land Portal

A Blockchain-based Land Title Management System for Bangladesh

03 December 2020

Bangladesh is a small country with a large population. Its increasingly developing economy further makes land a lucrative source of fixed capital. On the other hand, land titling is a cumbersome and lengthy process, where different government bodies process different sets of documents, and bureaucratic loopholes encourage fraudulent activities by organized people.

VoxEU

Regulating Fintech in Europe: Lessons from Wirecard

22 November 2020

The default of Wirecard highlights several problems in the regulation and supervision of Fintech companies, with regulatory holes in investor protection, customer protection, and financial stability. This column argues that since Fintech companies can be very complex, their oversight requires understanding their business model and combining regulation and supervision based on both entities and activities. The global reach of Fintechs also calls for better coordination at the European level and beyond, but the authors do not see the need for new regulatory body to oversee Fintechs in Europe.

Blockchain and Digital Identity

Current systems for identity management are siloed and inefficient, and call for new models

About one billion people around the world remain without the official proof of identity often crucial for receiving services and benefits - and those with official proof often have little-to-no control over how it is being managed. The concept of digital identity has therefore become increasingly important for many governments and institutions, given the ways it can potentially help knock down barriers when it comes to everything from property ownership, to political participation, to receiving fair access medical care and services. The COVID-19 pandemic has only brought issues related to identity management further into focus - as pandemic relief and stimulus payments, medical records, and address information all generally reside in separate systems with no means of interoperating. Many governments are therefore now exploring the use of blockchain technology to enable more seamless and secure systems for identity management. Some countries, such as Estonia, had already become leaders in the use of blockchain-based digital identity; an estimated 98% of Estonian residents have a national ID-card that functions as a travel ID, health insurance card, proof of identification for banking, and more.

In Canada, blockchain technology has been used to credential over 500,000 businesses through its “Verifiable Organizations Network.” In any country, adequate oversight and management are central to the use of blockchain - not least because unique and consistent identifiers are prerequisites for decentralized services. For example, blockchain-based currency transactions are routed via public addresses that represent a transacting entity, and signed off on via a unique private key (a cryptography tool used to encrypt and decrypt code). However, the anonymity this enables may come into conflict with regulations related to identification that are designed to minimize illicit transfers of funds. As a result, blockchain-based digital identity systems still face considerable technological, managerial, and regulatory issues. In addition to the scalability considerations first required in order to support billions of individual users, data integrity will be critical - especially given the potential for administrators to interact with a large volume of relatively unsecure, “off-chain” data. Regulatory models will likely need to adapt, in order to accommodate new models of identity and prevent adverse related consequences such as social exclusion or widening digital divides.

Related insight areas: Financial and Monetary Systems, Internet Governance, Future of Computing, Global Health, COVID-19, Digital Identity, Digital Economy and New Value Creation, Corruption, Innovation, Retail, Consumer Goods and Lifestyle, Fourth Industrial Revolution

The Conversation

Bitcoin: why the price has exploded – and where it goes from here

07 January 2021

Bitcoin achieved a remarkable rise in 2020 in spite of many things that would normally make investors wary, including US-China tensions, Brexit and, of course, an international pandemic. From a year-low on the daily charts of US$4,748 (£3,490) in the middle of March as pandemic fears took hold, bitcoin rose to just below US$30,000 by the end of the year. Since then it has climbed to all-time highs above US$38,000, making headlines day after day and driving up the prices of other cryptocurrencies at the same time. So what has driven this huge price appreciation and is it different to the bubble of 2017? .

Asian Development Bank

Blockchain Technology for Paperless Trade Facilitation in Maldives

15 December 2020

BLOCKCHAIN TECHNOLOGY FOR PAPERLESS TRADE FACILITATION IN MALDIVES DECEMBER 2020 ASIAN DEVELOPMENT BANK BLOCKCHAIN TECHNOLOGY FOR PAPERLESS TRADE FACILITATION IN MALDIVES DECEMBER 2020 ASIAN DEVELOPMENT BANK Creative Commons Attribution 3.0 IGO license (CC BY 3.0 IGO) © 2020 Asian Development Bank 6 ADB Avenue, Mandaluyong City, 1550 Metro Manila, Philippines Tel +63 2 8632 4444; Fax +63 2 8636 2444 www.adb.org Some rights reserved. Published in 2020. ISBN 978-92-9262-605-1 (print); 978-92-9262-606-8 (electronic); 978-92-9262-607-5 (ebook) Publication Stock No. TCS200403-2 DOI: http://dx.doi.org/10.22617/TCS200403-2 The views expressed in this publication are those of the authors and do not necessarily reflect the views and policies of the Asian Development Bank (ADB) or its Board of Governors or the governments they represent.

Nature

How blockchain and genetic engineering could make food safer for people with allergies

02 December 2020

The two technologies might ultimately bring an end to ‘may contain’ food labels, which consumers find confusing. The two technologies might ultimately bring an end to ‘may contain’ food labels, which consumers find confusing.

SpringerOpen

Discovering interlinkages between major cryptocurrencies using high-frequency data: new evidence from COVID-19 pandemic

09 November 2020

Through the application of the VAR-AGARCH model to intra-day data for three cryptocurrencies (Bitcoin, Ethereum, and Litecoin), this study examines the return and volatility spillover between these cryptocurrencies during the pre-COVID-19 period and the COVID-19 period. We also estimate the optimal weights, hedge ratios, and hedging effectiveness during both sample periods. We find that the return spillovers vary across the two periods for the Bitcoin–Ethereum, Bitcoin–Litecoin, and Ethereum–Litecoin pairs. However, the volatility transmissions are found to be different during the two sample periods for the Bitcoin–Ethereum and Bitcoin–Litecoin pairs.

Decentralized Governance and New Models

The distributed nature of blockchain can facilitate new ways of doing business

In order to make the most of blockchain technology, organizations will have to collaborate. In an acknowledgement of this fact, there has been a proliferation of industry consortia dedicated to blockchain exploration and implementation. These groups are often collaborating to an unprecedented degree, even drawing together rival businesses determined to cooperate in order to truly unlock the full potential of technology through new governance models. To-date, almost 400 such organizations have been registered, with several seeming to appear every month. The Blockchain Insurance Industry Initiative (b3i), for example, has brought together 20 key industry players such as Allianz, Liberty Mutual, and the China Pacific Insurance Company in order to explore and deploy the technology in different ways. The consortium's core activities include developing the standards and infrastructure necessary to facilitate data-sharing across separate organizations. However, collaborative models also raise new questions about intellectual property ownership, shared liability, data sharing, and more. To address such questions, consortium models generally require clear communication and alignment on roles and responsibilities.

Blockchain technology can enable decentralized autonomous organizations, also known as "DAOs" - which operate on code-based rules and are intended to be controlled by members without a hierarchical structure. These organizations are designed to provide a secure, digital ledger in a way that eliminates the need for a third party to approve or warehouse a transaction or agreement - so that parties could securely sign and execute a contractual work agreement, for example, without even necessarily knowing one another's identity. By enabling the re-thinking of the foundations of businesses and organizations from the ground up, there may be opportunities to consider new incentive structures. For example, traditional organizations have faced the "principal-agent" problem, where the decisions of front-line workers may not align with the interests of top-level decision-makers. Decentralized autonomous organizations present the opportunity to integrate demand, decision-making, and production in ways that enable an organization to adapt in a more nimble and aligned manner. However, the anonymity provided by this decentralized means of decision-making can come into conflict with corporate governance rules and regulations.

Related insight areas: Public Finance and Social Protection, Civic Participation, Corporate Governance, Innovation, Digital Economy and New Value Creation, Global Governance, Agile Governance, Education and Skills, Workforce and Employment, Justice and Law

LSE Business Review

Would society be better off were Facebook to divest WhatsApp and Instagram?

06 January 2021

The US Federal Trade Commission and 46 states have brought antitrust cases against Facebook, which could potentially require the company to unwind its acquisitions of Instagram and WhatsApp. The Initiative on Global Markets at the University of Chicago Booth School of Business invited both their US and European panels to express their views on this issue by asking the experts whether […].

World Economic Forum

5 reasons dispute resolution is critical for blockchain's growth

14 December 2020

Why do we need to care about resolving disputes around transactions happening on a blockchain? Here are five reasons backed by findings from a recent paper.

Bank for International Settlements

Stablecoins: potential, risks and regulation

24 November 2020

The technologies underlying money and payment systems are evolving rapidly. Both the emergence of distributed ledger technology (DLT) and rapid advances in traditional centralised systems are moving the technological horizon of money and payments. These trends are embodied in private.

Wired

Feds Seize $1 Billion in Stolen Silk Road Bitcoins

05 November 2020

More than seven years have passed since Ross Ulbricht was arrested in the science fiction section of a San Francisco library and charged with running the sprawling, dark web drug bazaar known as the Silk Road.

Blockchain and Leveraging Data

The technology can provide infrastructure for data sharing, exchange, and ownership

Data is the lifeblood of the Fourth Industrial Revolution, with 2.5 quintillion bytes of data now being produced daily amid some of the most profound technological change in history. To date, many large, centralized companies have been able to leverage data to target online advertising, sell products, or to simply re-package data (including personal internet user data) for sale to other companies - which calls for serious ethical considerations. Many prohibitive siloes remain in critical areas - for example, in the application of genomic data to attempt to treat rare diseases - due to a combination of regulation and proprietary oversight. The features that make blockchain technology unique may enable entirely new models for the valuation of data, its consumption, and means of compensating others for it. The DataNet project hosted at University College London, for example, is exploring related technical specifications for addressing, data tagging, permissioning, and more. These aspects are all key to facilitating data marketplaces and exchanges, where entities can freely share data and people can potentially be compensated for its use.

Blockchain can be especially powerful in this regard when combined with other Fourth Industrial Revolution technologies. Ant Group, the large Chinese financial services company, is for example combining the Internet of Things, artificial intelligence, and blockchain in order to try to provide secure, integrated services in diverse markets around the world; while Internet of Things devices are able to provide large amounts of valuable data, artificial intelligence is used to process that data, and blockchain serves as a trust-enabling layer of infrastructure. However, using blockchain for data transactions can create technological, institutional, and ethical problems. In terms of technology, privacy can be breached during “off-chain” data integration and analysis (even if data “on-chain” is safe). From an institutional point of view, containing data in a blockchain might be technically impossible if it has been collected from multiple, non-standardized platforms or countries. And, in terms of ethics, a social consensus is required on what constitutes adequate privacy protections, fair access for both people and companies aiming to exploit their data, and just rules to dictate sharing.

Related insight areas: Data Science, Fourth Industrial Revolution, Internet Governance, Internet of Things, Precision Medicine, Healthcare Delivery, Values, Future of Consumption, Future of Media, Entertainment and Sport, Future of Health and Healthcare, Artificial Intelligence

SpringerOpen

Forecasting and trading cryptocurrencies with machine learning under changing market conditions

06 January 2021

This study examines the predictability of three major cryptocurrencies—bitcoin, ethereum, and litecoin—and the profitability of trading strategies devised upon machine learning techniques (e.g., linear models,...

Frontiers

The City as a License. Implications of Blockchain and Distributed Ledgers for Urban Governance

14 December 2020

Distributed ledger technologies (DLTs) such as blockchain have in recent years been presented as a new general-purpose technology that could underlie many aspects of social and economic life, including civics and urban governance. In an urban context, over the past few years, a number of actors have started to explore the application of distributed ledgers in amongst others smart city services as well as in blockchain for good and urban commons-projects. DLTs could become the administrative backbones of such projects, as the technology can be set-up as an administration, management and allocation tool for urban resources. With the addition of smart contracts, DLTs can further automate the processing of data and execution of decisions in urban resource management through algorithmic governance.

Frontiers

Open Platform Concept for Blockchain-Enabled Crowdsourcing of Technology Development and Supply Chains

19 November 2020

We outline the concept of an open technology platform that builds upon a publicly accessible library of fluidic designs, manufacturing processes, and experimental characterization, as well as virtualization by a “digital twin” based on modeling, simulation, and cloud computing. Backed by the rapidly emerging Web3 technology “Blockchain,” we significantly extend traditional approaches to effectively incentivize broader participation by an interdisciplinary “value network” of diverse players.

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- Some URLs have been shortened for readability. Please follow the URL given to visit the source of the article. A full URL can be provided on request.

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Explore the collective intelligence of the World Economic Forum

In today's world, individuals and organizations can find it difficult to keep up with the latest trends or to make sense of the countless transformations taking place around them.

How can you decipher the potential impact of rapidly unfolding changes when you're flooded with information—some of it misleading or unreliable? How do you continuously adapt your vision and strategy within a fast-evolving global context?

Leaders require new tools to make better strategic decisions in an increasingly complex and uncertain environment. The World Economic Forum developed Strategic Intelligence to help you understand the global forces at play and make more informed decisions.

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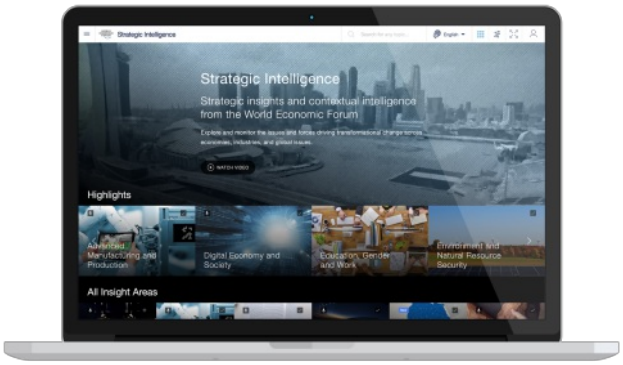

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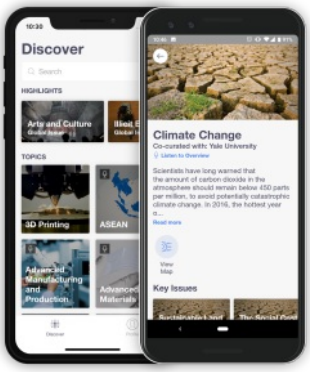

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