

A New Bretton Woods

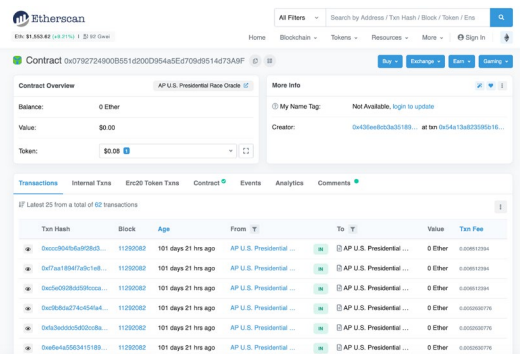
Mid-future neutral scenario

In 1944, 44 allied nations met in Bretton Woods, New Hampshire, to map out international monetary regulations and financial policies post-World War II. In addition to establishing the International Monetary Fund, they also created a fixed foreign exchange market and set the U.S. dollar as the global reserve currency. While fixed foreign exchanges are a thing of the past, the hegemony of the U.S. dollar remained intact, allowing the United States to borrow at lower interest rates and giving Americans the ability to import goods with higher purchasing power. Given what we know about digital currencies, inflation rates, and global trade, a new global summit is held to reimagine international monetary policies or displace the U.S. dollar. This “sequel” to Bretton Woods builds on John Maynard Keynes’ idea, proposed at the original summit in 1944, for a “bancor,” a supranational currency for global trade. Thanks to existing modern technology that allows for such a currency to be pegged to a basket of assets, and ensures that no single country has a dominant financial advantage on the world stage, Keynes’ dream of a bancor is finally made reality.



3RD YEAR ON THE LIST

Content Provenance and Permanent Archiving



The Associated Press posted verified election results from the 2020 U.S. presidential race on the Ethereum blockchain.

KEY INSIGHT

Blockchains can be used as a universal index of content authorship and edits. This is a powerful tool to authenticate content and to combat censorship and misinformation.

EXAMPLES

Blockchain can permanently archive content that would otherwise be subject to censorship or suppression. After censorship by social media sites like WeChat, Chinese activist Yue Xin at Peking University used the Ethereum blockchain in 2018 to publish a letter that detailed a pattern of abuse and intimidation from school administrators. People in China and Turkey also use the InterPlanetary File System, or IPFS—a peer-to-peer file sharing service—to publish and preserve otherwise censored content, such as news articles and Wikipedia pages. In 2020, the Associated Press used Ethereum blockchain to post verified results from the U.S. presidential race, and The New York Times may use the technology to combat misinformation. The News Provenance Project traces the origins of journalistic content and detects doctored or manipulated images and videos.

DISRUPTIVE IMPACT

Governments and large corporations routinely delete, alter, or censor online information, but blockchain lets us create a shared permanent ledger from which nothing can be deleted. By adding original content or an index to the blockchain, journalists and media companies can make their content permanent, verifiable, and traceable. Expect more blockchain experimentation for verifying original online content and its origins, and for more secure archiving. This is key: The decline of internet freedoms globally over the past decade means more internet censorship, more media manipulation, and less access to information. In an increasingly digital world, small newsrooms and large media companies struggle to maintain permanent archives.

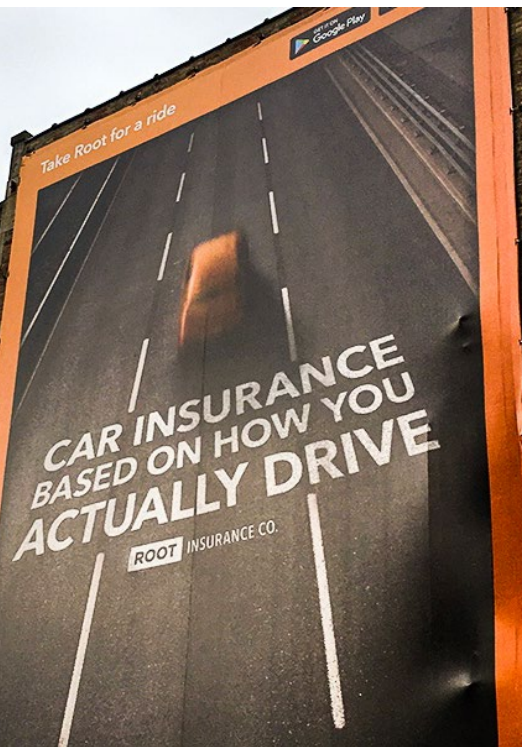
EMERGING PLAYERS

- Associated Press
- Internet Archive
- New York Times
- InterPlanetary File System



8TH YEAR ON THE LIST

Automated Credit Risk Modeling



Root Auto Insurance uses the accelerometer in mobile phones to assess customers' driving and issue an insurance quote accordingly.

KEY INSIGHT

Banks and insurance companies are using artificial intelligence to automate credit risk modeling.

EXAMPLES

Spin Analytics is a fast-growing startup that uses predictive analytics, artificial intelligence, and machine learning techniques to forecast credit behavior, future costs, and credit losses of both customers and entire credit portfolios. It's just one example of the AI-powered automated credit risk modeling services being studied and tested at commercial banks, including BBVA and Crédit Agricole. Similarly, Root Auto Insurance issues auto quotes by analyzing customers' driving based on the accelerometer in their mobile phones.

DISRUPTIVE IMPACT

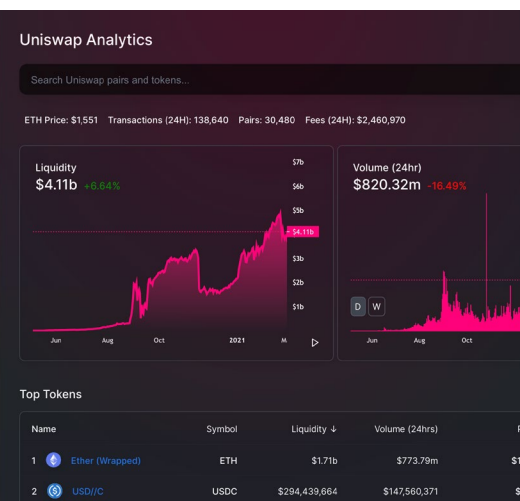
In many cases, using AI in credit modeling has increased bias against marginalized groups. However, automated processes based on behavior, and not demographics, could result in more just and equitable outcomes.

EMERGING PLAYERS

- BBVA
- Crédit Agricole
- Genpact
- Spin Analytics
- RapidRatings
- Root Auto Insurance

1ST YEAR ON THE LIST

Decentralized Exchanges and Automated Market Makers



Uniswap, with more than \$1 billion in liquidity, is one of the most recognizable decentralized exchanges.

KEY INSIGHT

Crypto-currency developers have created software to decentralize the exchange process, allowing individuals to trade directly with one another, without relying on a centralized third party to determine prices and settle the trades. Automated market maker algorithms make these decentralized exchanges work.

EXAMPLES

Centralized markets like the New York Stock Exchange or Nasdaq maintain fair, consistent, and transparent processes for publishing prices and orders, where market makers provide liquidity with both buy and sell positions. In crypto-currencies and fully electronic markets, algorithms typically price assets, rather than traditional market books. Ethereum-based decentralized exchange Uniswap surpassed \$50 billion in lifetime volume, despite concerns about liquidity and volume from darknet markets. Just months after its 2020 start, Curve.fi hit more than \$47 billion in volume and became a decentralized finance leader. Total trading volume for these exchanged ballooned to \$6 billion as of the first half of last year, up from \$2.5 billion in 2018 and 2019.

DISRUPTIVE IMPACT

Both of these trends—decentralized exchanges and automated market makers—are part of a larger wave of decentralized finance or DeFi. Although it is unlikely to disrupt traditional markets in the short term, there will be a greater demand for modern, impartial, secure systems to settle trades and transactions as more aspects of the global financial system are digitized. Expect bugs, bubbles, and user experience hurdles ahead, because it's the early days of decentralized exchanges and automated market makers. Still, the underlying innovation in finance is undeniable, and it will have lasting impact.

EMERGING PLAYERS

- Uniswap
- Curve
- Compound
- 0x
- Kyber
- dYdX



3RD YEAR ON THE LIST

Web 3.0



The InterPlanetary File System is a peer-to-peer hypermedia protocol that facilitates decentralized file sharing and cloud computing.

KEY INSIGHT

Web 3.0 allows for web browsers and mobile applications to perform more complex processes and enable entirely new kinds of transactions. In this new iteration of the internet, individual users would potentially have more autonomy and control of their privacy and data.

EXAMPLES

Collaboration and decentralized creation is accelerated in Web 3.0—often referred to as the semantic web. Advanced techniques in data mining, natural language processing, and text analytics will make gathering and understanding unstructured data much easier. Plus, artificial intelligence and machine learning allows machines to collaborate directly with one another and, eventually, teach one another. In media, Otoy is cutting the costs of 3D visual effects production with a decentralized, distributed network of partners that can chip in spare processing power with a digital token known as RNDR. The InterPlanetary File System, a peer-to-peer hypermedia protocol, facilitates decentralized file sharing and cloud computing. Companies like Blockstack and Cosmos are building networking products that will unlock a new generation of applications and services.

DISRUPTIVE IMPACT

The world wide web celebrated its 30th anniversary in 2019. Decentralization and collaboration are driving its next iteration. Smart cities, Internet of Things, and AI-enabled tools are simply not possible without Web 3.0 software and infrastructure. Just as cloud computing revolutionized how businesses manage and store information, blockchain and distributed computing will enable a new wave of innovation for information technology and databases.

EMERGING PLAYERS

- Blockstack
- Cosmos
- Lightning Labs
- RSK
- The International Political Economy Society

4TH YEAR ON THE LIST

Smart Royalties



Blockchain networks like Ethereum offer new ways to track ownership.

KEY INSIGHT

Blockchain networks like Ethereum offer new ways to track ownership, licensing, and royalties through smart contracts, or self-executing agreements in which the terms are directly written into lines of code. Blockchains form the foundational infrastructure layer for new, low-friction ways to automate royalty payments for digital intellectual property.

EXAMPLES

A smart contract, for instance, could automatically pay an artist when her song is streamed or simply track the number of times people share online content, preserving it in a shared public database. Blockchain is at the core of the Open Music Initiative (OMI)—made up of IBM, Netflix, Pandora, and Spotify—which is developing a standardized open-source protocol and APIs for the music industry. OMI launched a pilot with Massachusetts Institute of Technology that lets Berklee College of Music students license their work to other universities. Media organizations may use smart contracts, digital intellectual property rights structures, and micropayments—potentially revisiting the 1980s CompuServe economic model in which readers paid per view for high-quality journalism articles and images. It failed upon the arrival of free high-quality journalism online.

DISRUPTIVE IMPACT

Digital asset ownership is evolving in favor of content creators holding the rights to their content. Europe's GDPR law gives ownership rights to data that people create, no matter the platform. Expect more platforms to embrace this ownership model and compensate creators—musicians, photographers, videographers, writers—for driving engagement. Today, Instagram doesn't pay content creators; instead, brands pay to gain access to their followers. The Impact Musicians may be the first to publish content on platforms with smart contracts without management and distribution companies. It may succeed, due to enduring music demand and more artist revenue. News platforms may follow suit with video and photo libraries—but journalists tend to have more elastic followings than other artists. Regardless, creative industries face digital ownership and licensing challenges.

EMERGING PLAYERS

- Associated Press
- Ethereum
- Mycelia
- Open Music Initiative
- Berklee School of Music