

and digital currencies will provide that solution. It takes days for ACH transfers to settle, whereas blockchain-based payments are received nearly instantly. Such payments effectively settle in a few minutes on a highly decentralized and secure network like Ethereum and a bit more slowly on the Bitcoin network.

Blockchain-based payments provide users with more granular control over how merchants are able to use their funds. Whereas with a credit card there is an implicit understanding that the merchant will not charge you for a recurring subscription service more than you initially signed up for, you are entrusting the merchant with your credit card, rather than with that amount of money. With a smart contract agreement, the buyer has complete certainty that the upper bound of a payment will never exceed the authorized amount, and can authorize the cancellation of that subscription at any time. Blockchain-based payment platforms, such as ConsenSys Codefi's Daisy, allow anyone to accept recurring payments without absorbing credit card fees or requiring the customer to trust merchants with their credit card data.

Novel payment structures such as state channels mechanisms, which let parties interact directly off-chain and settle when ready on the mainnet, can allow merchants to nimbly process micro-transactions of fractions of a cent. Other payment structures will emerge that are uniquely suited to smart contract-governed payments, such as regular subscriptions payments, intermittent licensing payments (for music or other content, perhaps), or an auto insurance provider offering a parametrized insurance policy that charges fractions of a cent for each second behind the wheel of a covered car, adjusting the rate based on time of day and region travelled.

All of this is happening on the Ethereum blockchain. These areas of innovation, combined with increasing momentum in enterprise applications of Ethereum, tokenization of assets, and software contained within these new subsystems as they mature, will all begin to combine to form the substrate for the new global digital economy - and they will amplify one another.

The global economy needs an objectively trustworthy frame of reference to coordinate logic and transactions between business networks. That frame of reference is shaping up to be the Ethereum mainnet, which will function as the global settlement layer for digital assets of the future web. In order to be maximally secure, it must also be maximally decentralized in its architecture. If the goal is building, or re-build-

ing, a more secure, reliable, and interoperable global financial system, it is suboptimal to architect it on centralized, open platforms subject to censorship, single points of control and failure and other kinds of potential improper manipulation.

Atop and alongside the maximally decentralized trust foundation and global settlement layer of the Ethereum mainnet, the future of decentralized protocol technology will consist of many functional elements: for trusted transactions, automated agreements, smart software objects, storage, bandwidth, heavy compute, identity, reputation, proof of location, legally enforceable agreements, certificates, equity and real estate tokenization and ease of fractional ownership, financial inclusion, clearing and settlement in the instant of the transaction, and more.

So many aspects of our global financial infrastructure are built on outdated software platforms, and vulnerable database architectures, use antiquated and sluggish cross-border settlement systems, and little of it is fluidly interoperable. Financial institutions are, of necessity, reconciliation companies that fix misunderstandings and broken transactions between disparate databases that each house a fraction of the understanding of a transaction. When things go right, they are able to offer financial services to their corporate and consumer customers. It doesn't have to be this way. Blockchain financial infrastructure will allow such institutions to interoperate with one another on a new trust foundation that represents a single share source of truth. Trillions of dollars in wasted or untapped value is waiting to be unlocked by this new decentralized protocol financial tooling.

But the potential for blockchain in 2020 goes far beyond DeFi and payments: it is about automating trust to facilitate collaboration, and enabling digital scarcity to allow for the creation of digital assets; it is about convergence of platforms, reducing inefficiencies, doing business faster and better than ever while creating healthier economic dynamics in the process. I have no doubt that this will be an exciting, and likely defining, year for our ecosystem.