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DIGITAL VENTURES

Evolution, Not Revolution: Investing in Digitization & Blockchain

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The Digitization of the World is Accelerating

Digitization is one of the most prominent and deeply rooted global trends unfolding today, and it intersects with and offers solutions for virtually every industry and aspect of life. Over the course of several decades, this evolution has profoundly altered the way people work, learn, interact, spend, and invest—sometimes gradually and undetectably, and other times seemingly overnight. Looking forward, the long-term foundational shift from an analog world to a more fully digital one continues to accelerate, and blockchain technology will play a key role in enabling the next phase of this transition.

The COVID-19 pandemic has increased our reliance on digital connectivity and underscored its importance, and the lasting impact will likely be substantial. Many people have quickly adapted to a new work-from-home paradigm and are now dependent on remote interaction for business and digital learning for their children. For some, this transition has been relatively seamless. Many others were first-time users who quickly learned to utilize Zoom to congregate for virtual happy hours, Slack to manage digital workflow, Venmo to pay friends, and DocuSign to execute contracts. Further, the urgent need to overhaul our antiquated and fragmented financial infrastructure was exemplified by Congress's consideration of a national digital currency in a draft of the CARES Act to allow for quick and efficient distribution of stimulus payments.

Society is without question experiencing the necessity of digitization and growing accustomed to it in new ways; the pandemic has further cemented and accelerated the broader digitization trend that has long been in motion. Executives and business leaders who have already recognized this phenomenon include Microsoft CEO Satya Nadella, who on the company's first quarter earnings call noted that "we've seen two years' worth of digital transformation in two months." In late April, Gary Cohn, a former Goldman Sachs executive and former Director of the U.S. National Economic Council, penned a piece in the *Financial Times* to share insights on the rise of digital money and the ways in which COVID-19 is accelerating the shift from cash to digital wallets and currency.

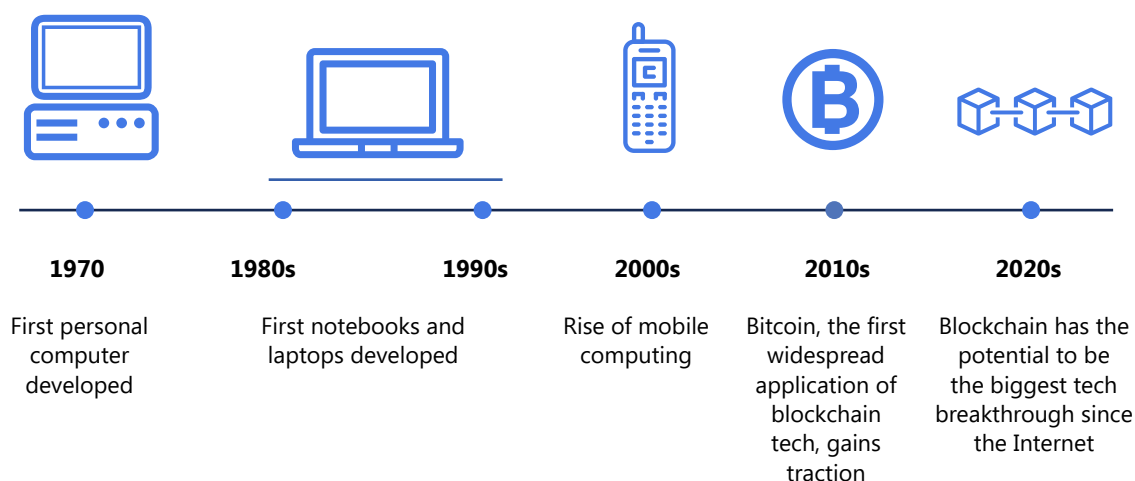
As the world becomes more connected and digital, people will encounter new and heightened tensions around trust, data privacy, digital identity, and security. Blockchain technology offers new structures and mechanisms to address this expanding set of challenges, while also delivering opportunities to significantly improve operational efficiency. Though blockchain is not an overnight solution for the issues and obstacles that arise in a more digital world, it is an essential enabling technology that can uniquely address problems that have previously held back certain components of digitization. As the global digitization trend accelerates, blockchain will be an increasingly important ingredient. To capitalize on this, many seasoned entrepreneurs are building and scaling exciting and practical blockchain-based products and services that are market-ready today, particularly in the areas of Digital Finance, Enterprise Digitization, and Web 3.0.

Blockchain is a Transformative Technology

Transformative technologies catalyze innovation and step function change, advancing the long-term trend toward a more digital world. Historically, a new leading-edge technology has emerged approximately every 10 to 15 years. From the development of the first personal computers (PCs) in the 1970s, use of computers became more widespread with early notebooks and laptops in the 1980s. The 1990s brought the start of the Internet age, and in the early 2000s the world started to experience the rise of mobile computing that was driven, in large part, by the remarkable success of smartphones which were able to harness the power of the Internet.

We are now well into the current Internet and mobile computing cycle, with many pondering the big question of what's next. In recent years, blockchain technology has quietly played a pivotal role in helping the world evolve toward digitization, and has perhaps even accelerated that trend by virtue of its distributed ledger and often open source nature. Bitcoin, which is the first widespread application of blockchain technology, was first introduced in 2008, and a little more than a decade later has grown to be a global asset valued at more than \$175 billion. Bitcoin is only one of the wide range of potential use cases for blockchain technology, which has the potential to impact and alter virtually every industry and may become the world's largest technological breakthrough since the Internet.

A new, leading-edge technology has emerged approximately every 10 - 15 years



Blockchain and the Next Wave of Digitization

The existing digital infrastructure is an amazing global resource, connecting billions of people across the world. Yet, it is broken in many ways. As Internet adoption grew and more people demanded use of its services, centralized providers stepped in and commercialized the process of accessing, communicating, and navigating the digital world.

Fast forwarding to today, society is left with very a functional, albeit highly centralized, global Internet infrastructure. The current system, due to its aggregation of services, providers, and control, is much less secure than many realize and often prone to attacks. As more and more public and private institutions' systems become compromised or hacked, the trust we place in those centralized providers is breaking down, demonstrating the vulnerabilities of today's networks. Many applications also require users to share personal information, making the protection and ownership of sensitive private data highly important. It will become ever more important as the world becomes increasingly interconnected online. By utilizing blockchain technology to improve or replace the back-end architecture that facilitates communication and commerce today, people can address the trust, privacy, and security tensions present and mounting in the current system.



The role of trust is a key differentiating feature of blockchain technology, and it drives many of its advantages over the existing digital infrastructure. Blockchain transfers trust from a centralized point of potential failure and attack to a decentralized system governed by rules-based code. In a closed and permissioned system, blockchain technology can also automate the functions of intermediaries with the special feature of provable trust guarantees.

Importantly, a blockchain's digital ledger is immutable and tamper-resistant, improving security and reducing the chances of a hack, while facilitating far more efficient data verification among large groups of participants. Privacy is also a strong feature offered by many blockchain networks. Using cryptography, a blockchain can facilitate a more secure transfer of private data between users and entities, maintaining identity protection and data ownership at the single user or individual level.

Blockchain can be utilized to enable efficient contract execution and fulfillment via "smart contracts" that automate the governance of many legal or transactional agreements. By simply removing the middleman or gatekeeper, automation through code eliminates costly, time-consuming, and error-prone manual processes. As the use of smart contracts expands, they have the potential to improve productivity, reduce fees and friction, and shorten settlement times across many industries.

What is a Blockchain?

Blockchain is a decentralized, distributed ledger technology. It can best be described as a computing platform or software that is "trustless" and operates in accordance with pre-set rules, and it is not controlled by any one party. Its components form a virtual database that runs on top of a network of physical computers. Data is shared across participants and governed and updated using rules prescribed by code. This virtual database is akin to an accounting ledger in which anybody, or anybody with permission, can make an entry. Each entry is submitted through code in a specifically packaged format that is then sent to the network for the needed verification and approval in order to be added to the blockchain, which is then re-distributed to all participants. The system structure also enables the use of smart contracts that can execute automated business logic, or enforced if-then statements.

Why is Blockchain an *Evolution*, Not a *Revolution*?

Blockchain is progressing along two vectors—there is an evolution of the technology itself, as well as an evolution of the business models that the technology can enable. As a first step, the technology is currently evolving to become faster and more robust, with more user-friendly interfaces. In time, technological improvements will add new ingredients and tools for executives and innovators to leverage, and novel business models will emerge and take hold. We are still in the early days of blockchain's growth and technology evolution, likely years away from a widespread shift to disruptive business models enabled by blockchain.

Like the Internet, many of the truly transformative applications require time and resources to develop, as well as infrastructure to support them. Despite the tremendous promise of the Internet in its early days, the first wave of adopters had to utilize slow, inefficient dial-up and broadband connections for years before cloud-based computing infrastructure was eventually developed and allowed for significantly speedier and more efficient connectivity. In the dial-up era, it was probably hard to imagine a world of multiple streaming services with uninterrupted access to content.



Similarly, many blockchain products and services available today also offer great promise and potential, but they are currently experiencing growing pains of their own. Innovative token economic models that incentivize users to help drive adoption via native tokens continue to evolve for certain networks that offer compelling use cases, but many of these token models remain challenged in their ability to accrue value and realize adoption at present. Decentralized Finance—also known as DeFi—continues to attract new users and grow transaction volumes by the day. Some of these systems have experienced bugs that risk loss of funds, and many are still determining the right governance

and voting protocols. Today, DeFi is still in the experimentation phase, but it presents a potentially large opportunity over the longer term.

As with most technological advancements in history, change begins with a handful of very clear and useful improvements to the current system. Then, suddenly, the change itself becomes ubiquitous, making it hard to believe we ever operated without it. The blockchain solutions that are gaining customer traction today bridge the gap between aging legacy systems and a more fully digitized world. Large incumbents in many industries are active participants in this transition, as it is not realistic to cut out trusted intermediaries and other entrenched players overnight. Today, companies often implement blockchain as a SaaS solution and welcome the resulting efficiency gains and cost savings. Those who recognize the need to constantly adapt will be the most likely to successfully navigate a transformational shift that is gradually and incrementally changing the way the world operates.

**The solutions that are gaining traction today are bridges
between the incumbents and a more fully digitized world**



Blockchain Use Cases: Three Areas of Opportunity

Many Fortune 500 companies, such as Goldman Sachs, Microsoft, Starbucks, Wal-Mart, and Vanguard to name a select few, are exploring and implementing blockchain technology to improve their operations and gain first-mover competitive advantages in their respective industries. Many others are investing large sums of money into promising companies and projects in the space to capture the incredible potential that they see in the technology.

In the context of global digitization, there are attractive opportunities to invest in practical, market-ready blockchain products and services today in the areas of Digital Finance, Enterprise Digitization, and Web 3.0

Digital Finance

There are two primary components of digital finance: one, infrastructure to facilitate the trading and transfer of digital assets and money, and two, automation and digitization of traditional assets and markets.

First, investments into platforms that facilitate institutional trading, aid in compliance with regulatory requirements, and provide the necessary infrastructure for adoption and institutionalization of digital assets are a straightforward and practical way to execute the first component of the digital finance thesis. Blockchain technology enables the trading, fractionalization, and transfer of a wide range of digital assets—from liquid cryptoassets, such as bitcoin, to digital collectibles and tokenized securities—but new infrastructure is necessary to support these advancements. Digital assets have matured into an established global asset class with institutional demand, and several of the world's largest and most successful hedge funds, including Renaissance Technologies and Tudor, are now participating in regulated segments of the market. However, significant additional infrastructure is necessary to continue to broaden institutional adoption, as much of the sector's build-out to date has focused on retail investors. In fact, as of early 2020, digital asset exchange Coinbase reported over 30 million registered users, surpassing the estimated combined 23.5 million active brokerage accounts at Charles Schwab and TD Ameritrade.

Across the world, cash is phasing out in favor of more virtual forms of money, and the “rails” that support digital asset trading can also power the transfer of digital money. Digital money can be transferred faster and at a lower cost than the existing financial infrastructure allows, and perhaps most interestingly, it can become programmable with enforceable rules via blockchain smart contracts. Bitcoin is one of the earliest

forms of digital money, though its use case has evolved from a non-sovereign, peer-to-peer currency to a store of value with a public, predictable, and unchangeable monetary policy. More recently, Facebook's announcement of the Libra project in 2019 was a watershed moment for digital money as it brought the concept into the mainstream. Libra's form has since shifted to support digital coins tied to local currencies rather than a new cryptocurrency, and the project is rapidly moving forward to bring a new global digital payments system to Facebook's 2.5 billion users.

Many central banks and governing authorities throughout the world are now contemplating issuing their own digital currencies as they have started to recognize the significant benefits, especially in meeting the needs of an increasingly digital economy. Notably, China's President Xi Jinping has been highly vocal about the PBOC's plans to launch the world's first Central Bank Digital Currency (CBDC) with the digitized renminbi, and Sweden is currently testing its e-krona digital currency. The push toward digital forms of money is garnering more support even in the U.S. Drafts of the recent CARES Act and ABC Act stimulus proposals to counteract the economic fallout from COVID-19 included a digital dollar and the creation of "Fed Accounts" for U.S. residents,

Company Spotlight | Digital Finance



Bakkt, a subsidiary of Intercontinental Exchange (ICE), has built key pieces of the regulated institutional infrastructure for digital assets of all kinds, not limited to cryptoassets. Bakkt's early products include an enterprise-grade bitcoin custody offering and a federally regulated futures exchange and clearinghouse. It also developed regulated futures and options contracts that help support the hedging and risk management requirements for a broad range of institutional market participants. The continued development of this new financial infrastructure is attracting more institutional investors to participate in these markets and to interact in new ways as the digital financial world of the future takes shape.

Bakkt is building an end-to-end platform that targets regulated institutional capital on one end, and consumer facing applications and use cases on the other. Through Bakkt's soon-to-be-launched digital wallet and consumer app, users will be able to manage all of their digital asset accounts in one place, including crypto holdings, loyalty points, rewards programs, and gaming assets. The app will allow users to convert all of these holdings to cash instantly and utilize any of their digital assets as payment. Bakkt has partnered with Starbucks as a strategic launch partner to facilitate payment at Starbucks stores through the Bakkt app. Additionally, Bakkt recently acquired Bridge2 Solutions, a loyalty points solution provider for both merchants and consumers, to further augment the options it can provide consumers to interact with digital assets in new ways via its consumer application.

citizens, and businesses, which would have enabled them to quickly and efficiently receive stimulus payments and financial services directly from the Federal Reserve.

The second component of the digital finance opportunity is the automation of traditional securities by way of blockchain technology. Blockchains operate as 24/7 networks and can be used to process financial transactions and transfer value in new ways, beyond the limitations of normal bank and market business hours and systems. This global, low-cost, always-on interconnectivity is a major improvement relative to the legacy financial infrastructure. Digitization and automation of traditional securities can simplify many of the manual operational complexities of the current system. Manual cash distributions, paper documentation prepared by expensive lawyers, and time-intensive ratings processes can be replaced with automated cash distributions, coded governing documents, and self-rating securities or digital voting. Digitization also promotes greater transparency for audits via transaction history, trade logs, and other financial information in real time. Additionally, digitization enables previously illiquid assets, such as partnership interests in funds, real estate, and thinly traded debt instruments or derivatives, to become more easily tradable. By reducing the friction associated with transferring and operating these assets, blockchain allows for smaller transaction sizes, strong governance, improved liquidity, and active, efficient markets.

Enterprise Digitization

Many enterprises have begun to implement blockchain technology in their organizational workflows and processes, replacing antiquated legacy systems. According to Deloitte, over 53% of enterprises say that blockchain technology had become a critical priority for their organizations in 2019—a 10-point increase over the previous year. The benefits of blockchain include increased transparency and operational efficiency, with reduced costs, manhours, and resources expended on manual tasks. By automating certain functions and placing trust in the efficiency of carefully audited code via blockchain technology, companies reduce the chance of human error and enable operations to proceed more expeditiously. Companies are also able to share select information in new and more efficient ways, sometimes even with competitors in a shared network, since the privacy and integrity of their data can be maintained. These benefits allow businesses to scale in ways that are not practical with reliance solely on human capital, unlocking latent potential.

For example, contracts and agreements can often be one of a company's biggest assets, and they are vital to the proper functioning of global commerce. However, their structuring and maintenance can be one of the company's most time-consuming and labor-intensive activities. They require significant time to manage, become static post-execution, and require large back office teams for organization, storage, and enforcement. Utilizing blockchain technology to digitize these agreements into smart contracts that can

execute autonomously brings them to life dynamically. This allows companies to build workflows around the contracts and integrate them with existing CRM, payment, and task management workflows. Additionally, coding the terms of a contract into a blockchain makes it much easier to enforce compliance protocols, resulting in fewer disagreements and less litigation over interpretation. These dynamic contract benefits can easily be extrapolated to wills, trusts, escrow agreements, and any important document of organization or mutual condition.

Blockchain technology is also used to improve global supply chains and enable the efficient movement of goods around the world. When inventory logs are digitized and accounted for on a transparent ledger, it becomes nearly impossible to lose or misplace inventory, and much easier to precisely know an item's geographic location or position in the supply chain in real time. The technology reduces the need for large teams to track and audit purchasing activities across an organization. To enable multiple participants to coordinate, permissioned ledgers also allow visibility across an entire supply chain without requiring individual entities to directly share data that may potentially be competitively sensitive. The technology shortens the payment cycle for most companies; codifying the final delivery status of a product into a smart contract tied to an automatic release of payment reduces unnecessary accounts receivable delays, and cross-border payments can be expedited. This makes capital flows more efficient for all businesses in the supply chain. Consumers can also benefit from improvements in data on the origin and authenticity of their foods and goods, now made possible by tracing the inventory back to the source with a high degree of confidence instilled by the transparency of a blockchain's ledger.

Company Spotlight | Enterprise Digitization



Clause is a technology company that builds infrastructure for the future of contracting. Clause allows for the digitization of all types of business contracts, with the option to partially or fully automate these processes. This provides businesses the flexibility to adjust to the level of automation that is most comfortable and appropriate for them over time. Clause believes that contracts should be a source of value for businesses, not a burden or high cost.

Clause's technology is utilized in a white-label fashion by large corporations including DocuSign and Salesforce. DocuSign utilizes the smart contract technology provided by Clause to automatically check and verify the accuracy of contract data in real-time via its Verify Smart Clause Template. Clause for Salesforce brings real-time visibility to the status of contracts from within a Salesforce account and allows commercial agreements to perform calculations and integrate with other IT and payment systems.

Web 3.0

The third vertical of current digitization and blockchain innovation may ultimately present the largest opportunity, but it is also the earliest in its development. Web 3.0 is the next evolutionary phase of the Internet, made possible by advances in blockchain technology and artificial intelligence. One of the most important tenants of Web 3.0 is empowering users to control their own data or maintain anonymity, rather than cede control to large data monopolies that capitalize on knowing a user's every move on today's Internet. As previously noted, blockchain technology can play a critical role in Web 3.0's implementation given its ability to provide an elegant solution for the problems that arise from the flaws and limitations of today's highly centralized Internet.

The current Internet infrastructure (Web 2.0), resulted mainly from the explosive growth of smartphones, which led to increased demand for mobile computing by virtue of Internet services and centralized applications built on top of these mobile operating

Company Spotlight | Web 3.0



Spring Labs is a decentralized infrastructure company for credit and identity data, and it is enabling new ways of attesting to private and permissioned information in compliance with consumer protection and privacy regulations. The Spring Labs protocol allows competitively-sensitive parties to exchange information directly by facilitating data attestation without the explicit exchange of the underlying data. Because data is not exchanged, but rather attested to, participants are able to get the informational value they need without sharing private data. It also lessens the need for third parties like credit bureaus to aggregate, create, and distribute sensitive and private credit or identity data. By establishing a secure and anonymous data exchange across the industry, Spring Labs allows financial institutions to be compensated for contributing data and information to the system, which lowers the costs for consumer access to financial services in the process. Further, the protocol allows for access to granular data that otherwise may have only been available to very few and for a high price.

Spring Labs has partnered with a number of large traditional financial institutions, including GM Financial, to improve industry data standards and fraud prevention. Spring Labs is also backed by an experienced advisory board, including Shelia Bair, the former Chair of the FDIC, Gary Cohn, the former Director of the U.S. National Economic Council and President/COO of Goldman Sachs, Nigel Morris, the Co-Founder of Capital One, Bobby Mehta, former CEO of Transunion, and Ray Lane, the former President and COO of Oracle.

systems. Most of the successful Web 2.0 companies are merely applications with simple and pleasant user interfaces sitting on top of databases that aggregate vast amounts of user data and benefit from sharing and selling this data to undisclosed third parties, oftentimes without the knowledge of the individual user of the services. This has further been exacerbated by the lack of transparency around data collection techniques, data usage, and aggressive, but opaque terms of use.

Web 3.0 improves upon the legacy system by enabling the self-sovereign ownership of individual user data. This provides a user the ability to grant and revoke access to their own data and opt-in to direct monetization opportunities, including paid advertising. Sensitive user data becomes verifiable and specifically owned by an individual through privately generated alphanumeric passwords and storage. Central servers no longer own and control the user data; instead, control is returned to the hands of the users themselves.



The potential applications in a fully decentralized Web 3.0 world are vast, including critical improvements in data management, digital identity, and decentralized storage. The applications themselves no longer become the storehouses of a user's digital footprint. By allowing a user to verifiably prove his or her identity or knowledge of specific information without the need to reveal that sensitive information itself, Web 3.0 applications powered by blockchain technology enable users to interact in a way that wasn't previously possible. Web 3.0 has emerged as a widespread global movement for users creating a more democratic, open source, and frictionless Internet experience and method of sharing and maintaining information.

Blockchain: Investing in the Future of Digitization

Too often, the prospects for blockchain technology, and therefore its perceived investability, have been tied to a utopian vision of a fully decentralized world. The reality is that blockchain-influenced and enabled digitization is integrating quietly but rapidly within existing corporate and technological constructs. This is driving a paradigm shift in computing, networks, payments, and, ultimately, the Internet. As history has demonstrated, digital evolution begins by taking shape gradually through incremental progress, often in cooperation with industry incumbents to hasten adoption. Then it not-so-suddenly appears everywhere overnight. By increasing our reliance on digital solutions to stay connected and productive while together apart, COVID-19 has meaningfully accelerated the global digitization trend to which blockchain is inextricably linked.

Over the last several years, many highly talented entrepreneurs have recognized the technological evolution afoot and set out to build and scale the products and services that are bringing our digital future to fruition today. Digitally-enabled contracts, digital asset infrastructure, and digital wallets are all here now, and new forms of credit verification, proxy voting, and identity management are visible on the horizon. Now with proof of concept, forward-thinking institutions have been intelligently backing the leading-edge companies, projects, and networks that are investable today to capture the growth potential associated with the next great technology paradigm shift.

For more information about digitization, blockchain, and investable opportunities within this space, please contact us:

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