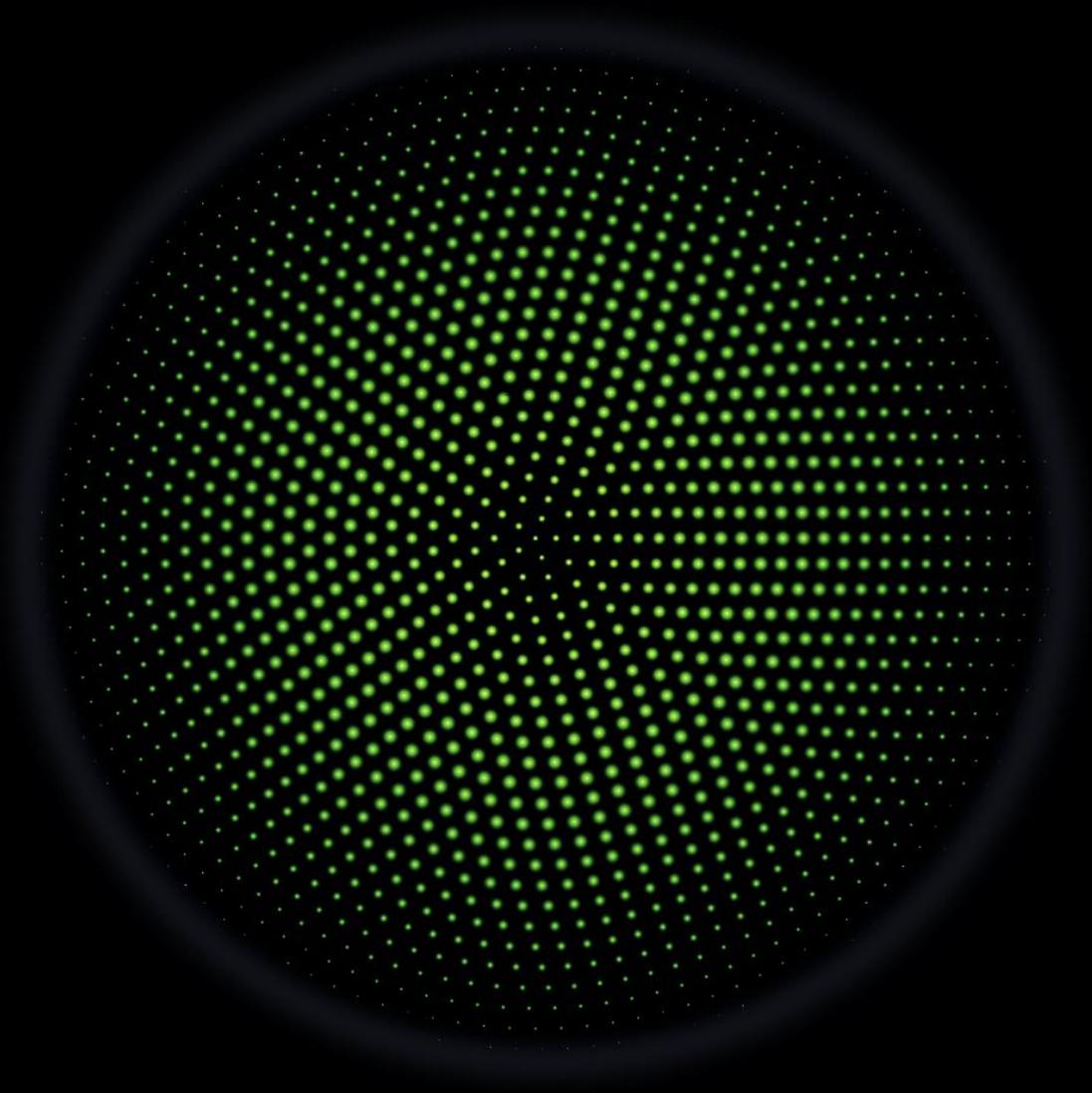


**Deloitte.**



## **C-Suite Briefing**

### 5 Blockchain Trends for 2020

March 2020

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# A glance back...

Now that we've settled into 2020 and the beginning of a new decade, we have the opportunity to look back at how far we've come, and how far we have to go.

## Moving forward in 2020

Now eleven years on from the mining of the genesis block on the bitcoin network, Blockchain technology's popularity has seen a historic rise and a significant fall. 2020 brings with it an opportunity for the technology to move further away from experimental PoCs and pursue more significant investment for real business-ready solutions.

## Where did 2019 leave us?

Like a small child, the early years of a nascent technology bring dramatic growth spurts coupled with a changing personality and growing pains. This rings especially true for young adolescent Blockchain, who turned 11 only weeks ago. Despite her youth, her tenth year was full of moments which will define the coming years.

2019 saw the proposition of Facebook's Libra and the People's Bank of China's announcement that they would soon launch a sovereign digital yuan. These bold reveals, which bring the potential of a global digital currency ever closer, caused ripples across the global financial services sector.

Across the board, we saw greater participation from government and central banks in discussions regarding the regulatory environment that this disruptive technology should exist in. And in the growing blockchain community, we observed a move away from 'get-rich-schemes' grabbing the headlines in the Blockchain space and more viable solutions and consortia taking their place. 2019 brought a broader range

of industry players into conversation on blockchain, moving away from the FSI focus that we had years ago predicted.

True, the adoption of the technology has not occurred with the ferocity which the crypto hype of 2017 indicated to many. Rather, we have seen the slow and challenging growth of ecosystem consortia highlighting that companies are *waking up to the idea that to go far, they ought to go together.*<sup>1</sup>

Blockchain is here to stay. And 2020 is the start of her decade.

"This is the beginning of the decade of Blockchain and I think in 2020, we'll start to see the global recognition of crypto assets in the FS industry."

Antonio Senatore, EMEA Blockchain Lead

## Top 5 Trends



The Hype is Over



Evolving Platforms



Adoption rates across industries



Governance is critical



The Rise of Tokens

<sup>1</sup> [World Economic Forum](#)

# The Hype is Over

The Deloitte 2019 Blockchain Survey showed that blockchain adoption has shifted. As the technology matures, we have seen a move away from experiments toward the development of robust enterprise ready solutions.

## The corporate blockchain hype cycle is slowing

In recent years, Blockchain has been heralded as a major disrupter on track to rattle almost every industry from agriculture and manufacturing to FS and insurance. While in many cases, the technology's promise can be clearly seen, faith in Blockchain has fallen victim to *"the massive hype and irrational exuberance in the past, driven largely over a Bitcoin-buying frenzy."*<sup>2</sup>

In the wake of the hype, a tendency toward *Blockchain tourism* developed – where we would see intrigued companies come to gawk at the technology, kick it around for a few weeks before deciding they were more comfortable where they currently were. But as we moved through 2019, we saw a fall away in

this trend and a greater focus developing on utilising the technology to solve real business issues and deliver value.

2019 revealed the emerging shared belief that blockchain is real and that it can serve as a pragmatic solution to business problems. Even leaders, initially wary of tech-based solutions, appeared to see potential in the technology. Specific supporting indications from our [2019 Global Blockchain Survey](#) include the increasing perception of blockchain as a top-five strategic priority, the sustained levels of blockchain investment, and the improved sentiments measured across an array of attitude statements, including the share of respondents who agree that blockchain offers compelling use cases.

Additional signs of blockchain's maturation could be seen in the diverse—and sometimes discordant responses of surveyed CEOs; the barriers to entry that they faced varied, as did the perceived advantages of blockchain which they identified. Such diversity of thought can be viewed as a mark of maturation because it reflects an enhanced sense of seriousness in consideration of the technology's possibilities and limitations.

Now, in 2020, we can see that the prevailing question among executives is no longer, "Will the technology work?" but rather, "How can we make technology work for us?"

## Learnings for the year ahead

### Significant investments planned for upcoming year...



**40%** will invest \$5M+ in Blockchain coming year

### Companies building blockchain teams

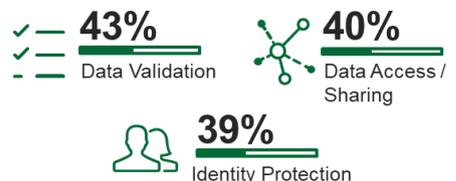
United States Ex-U.S. Avg.



**86%** **70%**

### ...across a breadth of use cases

#### Top 3 Use Cases



### ... to address critical enterprise challenges across industries



Data continues to explode in the enterprise



Centralized processes are costly



Functional processes have low visibility



Asset & value transfer is costly and slow



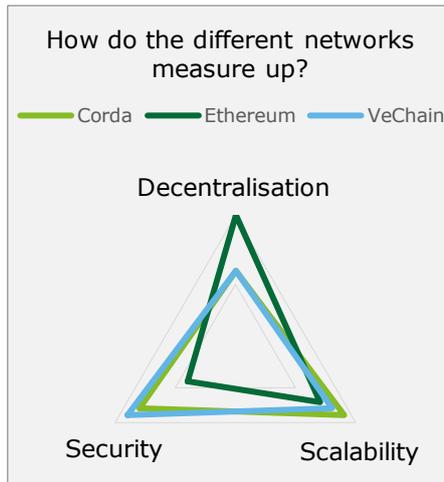
<sup>2</sup> [Forbes](#)

# Evolving platforms

The leading platforms at the end of 2020 will be those that can offer a unique combination of features to players and consortia building enterprise level solutions.

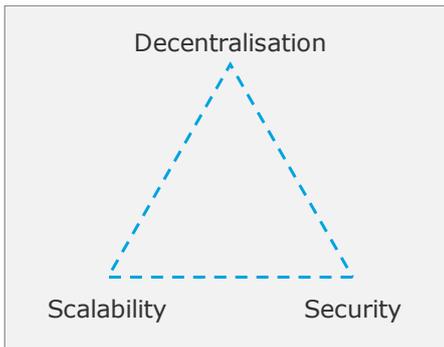
2018 saw a much needed clean up of the Blockchain ecosystem as overhyped projects failed and shady get-rich-quick schemes were weeded out; 2019 brought the rise of Blockchain's viable platforms and more pragmatic developers such as VeChain, Corda, Hyperledger, and Ethereum; Now in 2020, the leaders will emerge based on the unique combination of features that they offer to companies and consortia building production level solutions.

## The Blockchain Trilemma



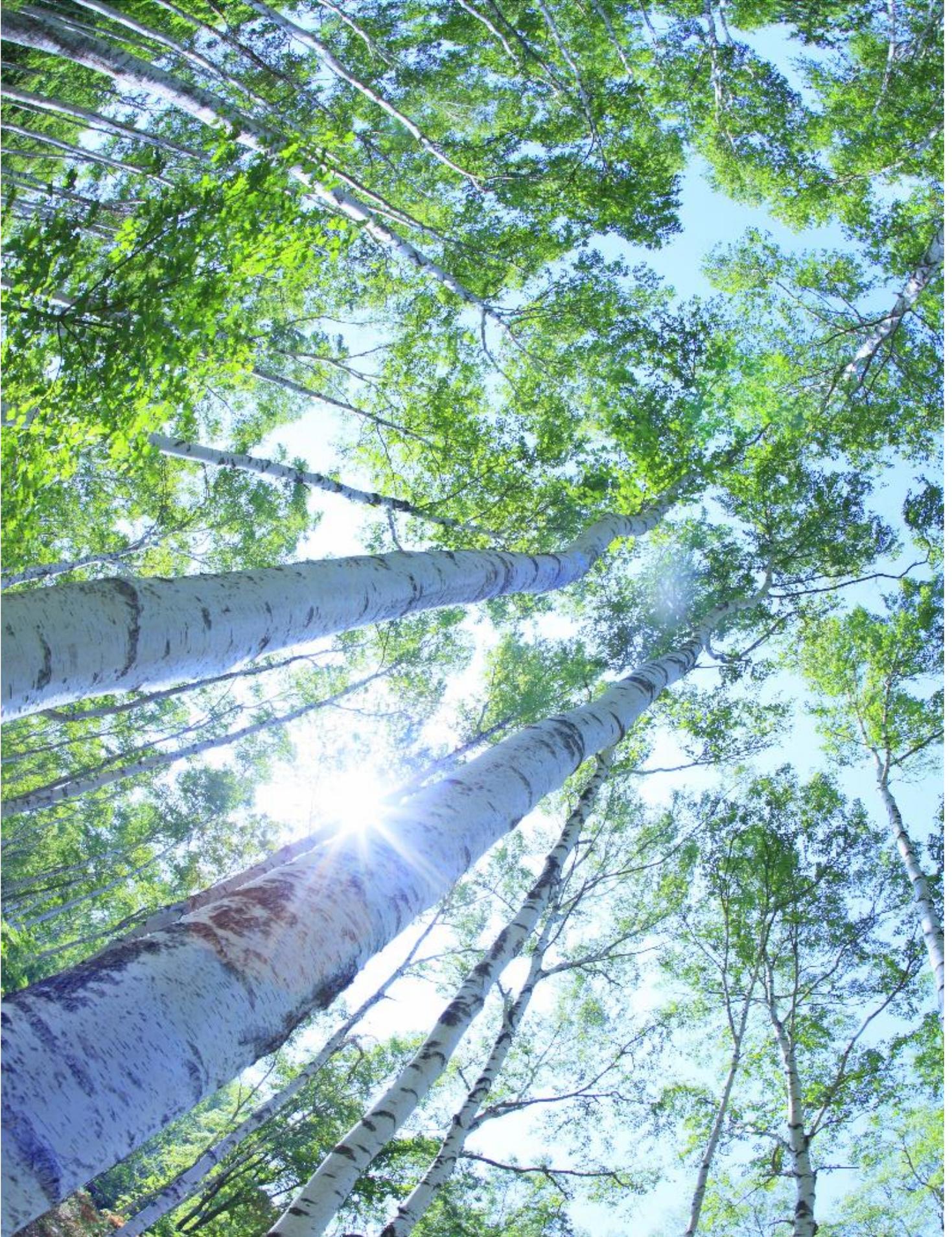
The balance of these three characteristics is thus a major consideration for any blockchain network provider, as well as for their customers who choose to build their solutions on the network

In 2019, we saw a diversification in the industries investing in blockchain with a particular rise in players from supply chain, life sciences and TMT. Their needs differ from the needs of the initial forerunner, FSI, and thus the network that appeals the most, also differs.



What has often been coined as 'the blockchain trilemma', refers to the trade off in any network between **scalability, decentralization** and **security**. Any two will succeed at the expense of the third.

	Permissionless	Permissioned	
Public	<ul style="list-style-type: none"> <li>Anyone can <b>join, read, write</b> and <b>commit</b></li> <li>Hosted on <b>public servers</b></li> <li><b>Anonymous</b>, highly secure</li> <li><b>Low scalability</b></li> </ul>	<ul style="list-style-type: none"> <li>Anyone can <b>join and read</b></li> <li>Only authorized and known participants can <b>write</b> and <b>commit</b></li> <li><b>Medium scalability</b></li> </ul>	<p>We have found that, for the vast majority of enterprise use-cases, a permissioned and private network is usually the best fit.</p>
Private	<p><b>Not possible /Futile</b></p>	<ul style="list-style-type: none"> <li>Only authorised participants can <b>join</b> and <b>read</b>.</li> <li>Only the network operator and authorised nodes can <b>write</b> and <b>commit</b>.</li> <li><b>High scalability</b></li> </ul>	



# Adoption Rates across Industries

2019 brought a greater diversification to the pool of players and ecosystems investing in Blockchain technology – We anticipate that diverse adoption will continue throughout 2020.

## Adoption across industries is not even

Deloitte's 2019 Global Blockchain Survey revealed that blockchain is going through a path of diffusion across industries far beyond its initial fintech applications. More organizations in more sectors—such as technology, media, telecommunications, life sciences, health care, and government—are expanding and diversifying their blockchain initiatives.

With leaders across industries looking at potential applications, many may wonder; How are different industries adopting and leveraging blockchain technology? Why might companies in one industry—but not others—be highly concerned about a particular kind of barrier to adoption? Do blockchain attitudes and investments vary by industry because of something inherent about the technology? Or is it something about different industries' individual cultures?

Figure 1, confirms that Blockchain investment across industries is varied. TMT leads with 49% of respondents confirming that their company is planning a spend of at least US\$5 million in the coming year. This industry also leads the adoption charge with 32% of respondents saying that they have already implemented blockchain in some area of their business. Interestingly, TMT's intention to invest has increased by 4% over the 2018 figure, indicating a steady increase in belief in the technology.

## Industries where we are seeing rapid adoption and potential for 2020

As new industries explore blockchain applications they do so in ways that reflects their own respective operational and strategic needs. Regulatory issues emerged as a central concern of respondents in the 2019 survey which may shed light on why some industries, more than others, have found it more difficult to identify opportunities to implement blockchain solutions in their business. We have seen particular interest emerge from the Life Science & Healthcare sector as well as Farming and Supply Chain. FSI have expanded their suite of use-cases and also promise to be a sector in which we will see further Blockchain growth in 2020.

### Life Sciences and Healthcare



There may be nowhere that blockchain can have a more immediate and meaningful impact than in life sciences and health care—an industry in which data transparency, speed of access, immutability, traceability, and trustworthiness can provide the information necessary for life-altering decisions.

The possibility of utilising blockchain technology in clinical trials and pharmaceutical supply chains have been at the centre of much experimentation in the past 12 months. While few have reached production, we envisage that there will be a wave of solutions which will go live once regulatory concerns have been abated.

Another area of interest, is that of digitising health records, a particularly challenging transformation that appears inextricably linked to the emergence of self-sovereign identification. The WEF and the World Bank have acknowledged the need for this development to realise a more inclusive and patient-led healthcare experience and we look forward to significant developments in the coming year.

### Farming and Supply Chain



The supply chain is at the heart of every manufacturing organization; it is the channel through which information, materials, services, and financial resources flow from idea to end-use delivery in a life cycle of value-added transactions.

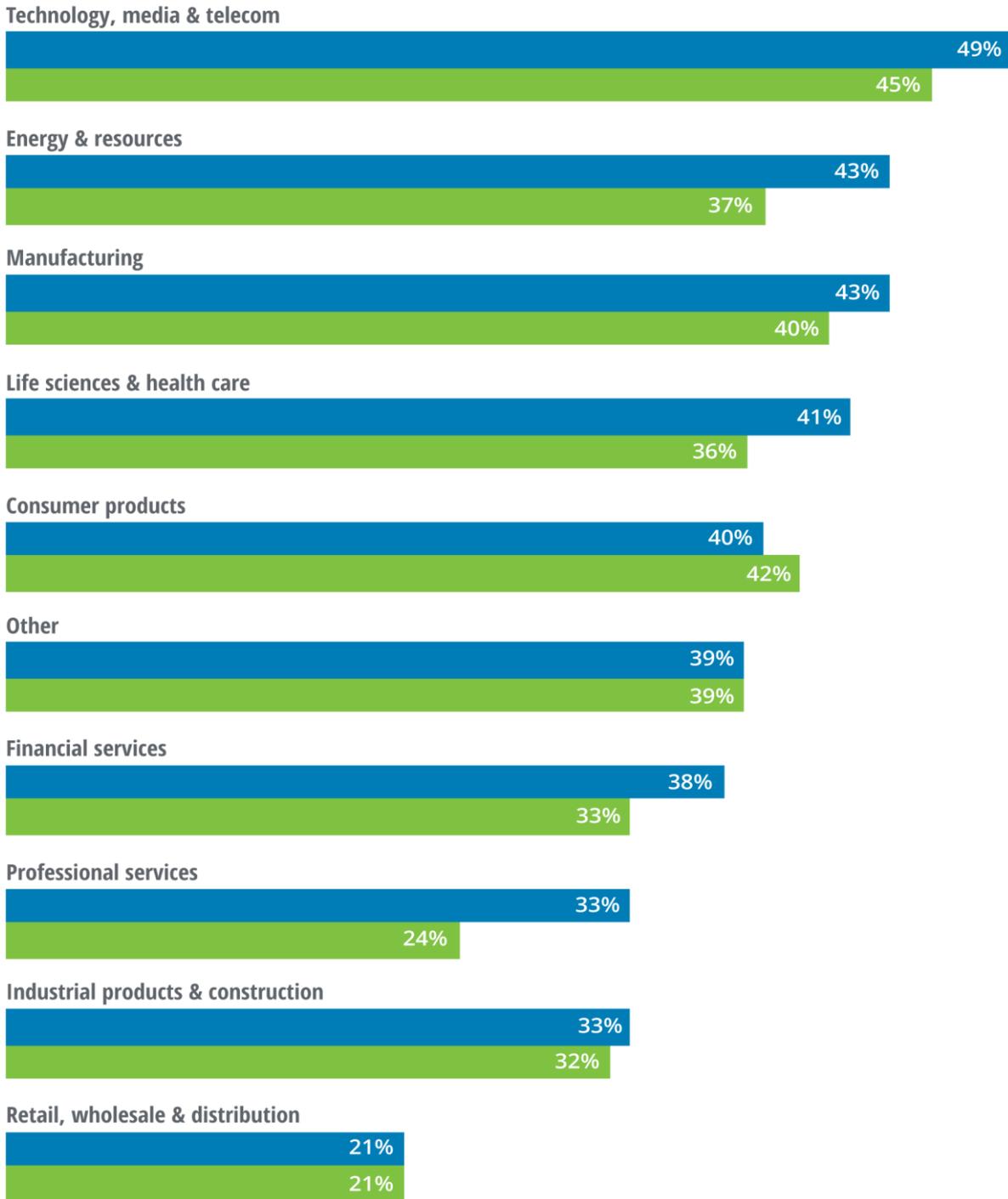
FIGURE 1

### Share of respondents investing at least US\$5 million in blockchain initiatives

In nearly every case, planned spending of at least US\$5 million increased or stayed the same relative to the prior 12-month period

Survey question: Thinking specifically of blockchain technology, approximately how much has your organization or project invested in the next/prior 12 months?

■ Next 12 months    ■ Prior 12 months



N=1,386 (2019 global enterprise)

Source: Deloitte 2019 Global Blockchain Survey; Deloitte analysis.

Blockchain is a technology which enables scrutiny and optimisation of processes in a supply chain that traditionally fall outside of enterprise solutions. We anticipate that its rise could lead to an evolution of supply chain management and logistics in the not so distant future. The IBM Foodtrust platform established itself as a meaningful provider in the Track and Trace space in 2019, working with Walmart, Carrefour and Nestle. Undoubtedly, there is room for other players here and we would expect to see an increase in interest throughout 2020.

### Financial Services

Financial services was the sector tipped to see both the most disruption and most significant investment in Blockchain technology. Although other sectors now look like they may rival it, the previous statement remains largely true. The news in 2019 was dominated by projects like Libra, Calibra, J.P Morgan's stable coin and the Interbank Information Network as well as Central Bank Digital Currencies (CDBC's) from the European Central Bank and The People's Bank of China. Financial sector players big and small have entered the blockchain game.

Although investment in Blockchain projects and ICOs was down in 2019 over 2018, we can expect a steady increase in this figure throughout 2020. Interest remains high, particularly with governments joining the conversation to provide financial institutions with regulatory clarity around the technology.



# Governance is Critical

As the technology matures, we can see that the core challenge in the path of Blockchain’s large-scale adoption is stakeholder management and bringing competitors and unlikely collaborators together to solve shared problems.

2019 made clear that technology barriers are not holding blockchain back – but rather human barriers. With our clients, we have discovered that many of the core benefits of blockchain technology are only realized through collaborating with other parties in the ecosystem or indeed forging new cross-industry partnerships. In short, a solution’s value is often directly linked to the value of the network it serves.

McKinsey has suggested that Blockchain is still three to five years away from feasibility at scale, primarily because of the difficulty of resolving the “coopetition” paradox to establish common standards. Gartner’s senior VP for technology, Peter Sondergaard echoed this, *‘there are still technical things that you need to solve and scale and there are still counter-aspects – business model wise – that aren’t necessarily fully clear.’*

## Emerging Governance Models

Centralized governance has allowed business leaders to experiment with the technology while sidestepping controversial questions around security, consensus, identity and anonymity, among others. Yet the centralized model also creates new risks around how the technology, economics and governance of the blockchain are controlled.

## Core Challenges in developing blockchain consortia

- 1 Allying with competitors
- 2 Agreeing on participants
- 3 Reaching consensus on shared goals
- 4 Defining a funding structure
- 5 Sharing both risks and successes

## Consortia Governance Models

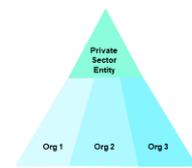
Three major governance options are emerging for blockchain consortia;



### Working Group

As in a traditional working group, this governance model works on the basis of equal power and contribution. Decisions are made through consensus and members contribute resources in the pursuit of

driving a shared objective. A working group does not operate as a legal entity – each participant owns and operates their own node.



### Private Sector Entity

A separate and autonomous legal entity is created in order to establish a private sector entity governance structure. The platform is typically offered as a utility for participants who operate their individual nodes. The project tends to be jointly funded by founding members as core stakeholders in the Steering Committee.



### Hybrid

A hybrid governance model can typically involve a shared infrastructure operator as a key facilitator to create an organization jointly owned in the industry. Members follow the organisation’s directives and contribute in order to drive a common objective.

The core benefits of Blockchain technology are realized through collaborating with others parties in an ecosystem and establishing a consortia.

## Blockchain Consortia

### Strategic Considerations



#### Goals of collaboration

Which goals do the involved parties want to achieve? How will success be measured?



#### Responsibilities of involved parties

What is expected of each involved party? What are the major responsibilities and how are they divided?



#### Contribution

How high should the financial contribution be for each involved party? Should it be possible to contribute partially or fully in FTE?



#### Intellectual Property

Should the intellectual property lie with all involved parties or only with those who took part in the technical development?



#### Technology Considerations

Which Blockchain technology or platforms should be used? Will it be possible to change the technology depending on the project progress?



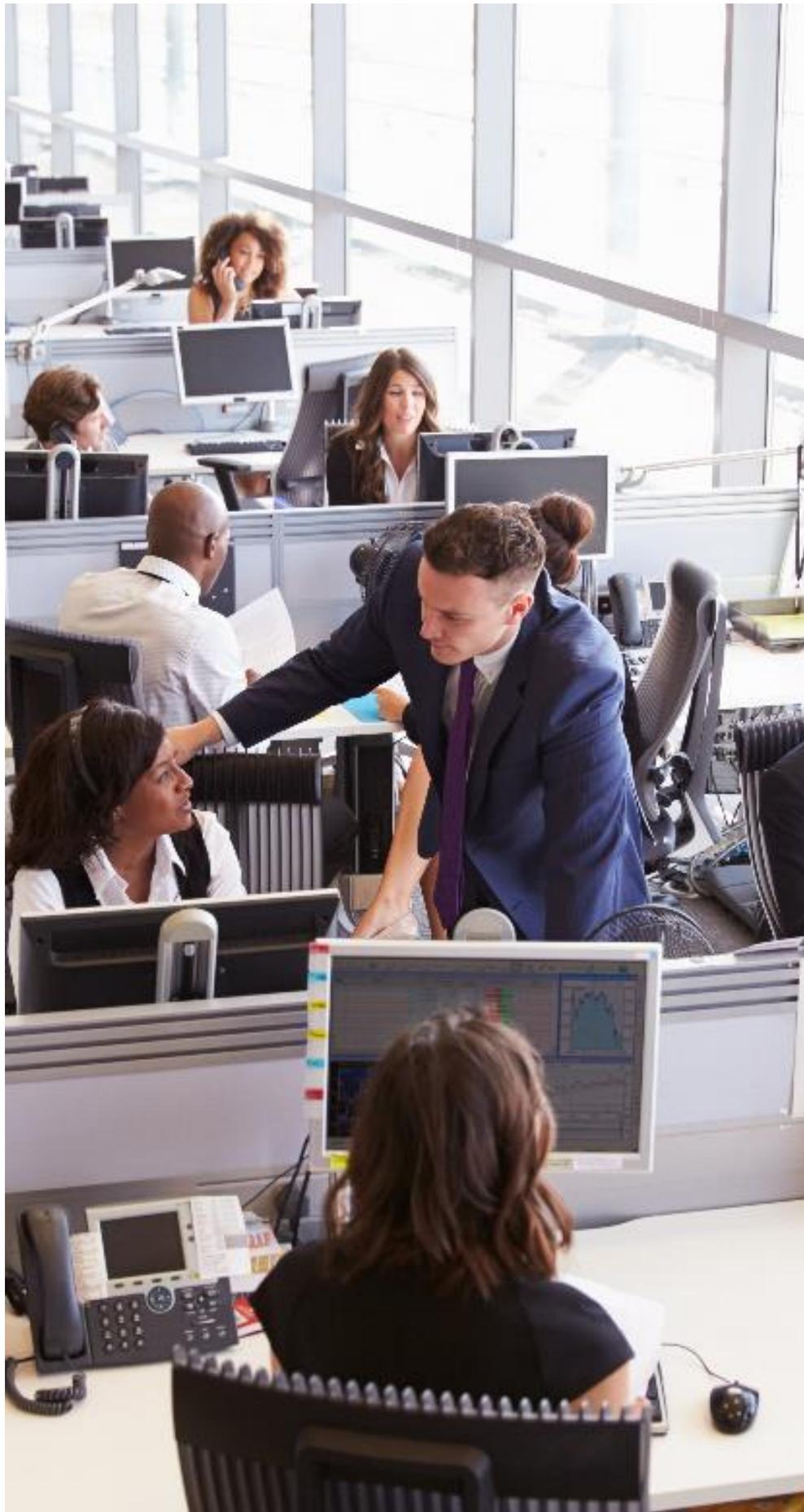
#### Confidentiality Agreement

In which cases will it be allowed to share information about the project? Will involved parties be restricted from independent projects?



#### Legal Entity

Is it planned to found a legal entity for the project? What are the strategic considerations and which parties would take part?





The human challenges that arise in the building of a blockchain solution require personal collaborations to be remedied

### What have we learned from Blockchain solutions so far?



#### Adoption is the measure of success

- The key to a successful consortium is industry wide adoption
- Consortium needs to be established in such a manner that will entice others to participate
- In an industry consortia, one company should not have the position to have more power than the rest of the participants



#### Do not underestimate the human factor

- Collaboration is hard
- Understanding the individual and company interest for participation
- Buy-in from decision makers is needed; Participants must be willing to commit time and resources to support the initiative
- Building a community platform in addition to the technical platform is key for stakeholder engagement



#### Decision making should be based on level of participation

- Equal participation can slow down decision making
- Votes should reflect investment and sub committees should reflect interests



#### A strong business case for all participants

- Start with an efficiency case as the business case is much easier to assess
- The platform needs to bring some form of value to all participants.

## “Coopetition”

—a willingness to work with your competitors and others in your industrial ecosystem toward some common purpose.

# The Rise of Tokens

From art to property, the way we invest in assets is on the verge of fundamental change. Tokens are becoming more sophisticated and aren't as far away from mainstream adoption as we might think.

Digital technologies have in recent years made possible a new class of assets called "digital assets." We define a digital asset as "something represented in a digital form that has an intrinsic or acquire value." There is no practical limit as to what can be characterized digitally and therefore be considered a digital asset. Examples of digital assets include land, goods, certificates, identity, works of art and literature, rewards, and even currency, among many others.

A new token economy could make the financial industry more accessible, cheaper, faster and easier, thereby possibly unlocking trillions of euros in currently illiquid assets, and vastly increasing the volume of trade.

Tokens have been broadly sorted into two categories; Fungible and Non-fungible.

**Fungible Token;** Fungibility refers to the ability of a good or asset to be interchanged for another good or asset for like kind. Therefore a fungible token is one which might represent currency, crude oil, shares, bonds. Each token, or fraction of a token, is equivalent to the next.

**Non-fungible Tokens;** a non-fungible token represents an asset or commodity which is not interchangeable. NFTs are designed to be special or unique. Two tokens representing different cars are not interchangeable as the underlying asset is different and unlikely to be valued equally.

Non-fungible tokens (NFTs) have seen a rise in the past 18 months, carving out a niche in the Ethereum ecosystem in which they are governed. The most common non fungible token standard, ERC-721, saw dramatic growth of 350% in 2019 largely driven by decentralised gaming. Although this is a niche area of the market, this rise and the new ERC1155 standard suggests that we will see increased numbers of mainstream players in this arena by the end of 2020.

It goes without saying that obstacles continue to stand in the way of widespread adoption, principally in the form of regulation. The bold suggestion from industry in 2019 of an imminent digital currency will push governments to provide guidelines on this uncharted territory sooner than they may have envisaged paving the way for the rise of tokens to mainstream society. We can remain confident that only institutions that engage with the technology, plan for the future and adapt to the realities will thrive.

## Ready to Play?

Considerations for Financial Institutions entering the token economy



### Platform Integration

Platform selection should be guided by regulatory requirements, service offering, product strategy and size and scale of community.



### Business Model

Where to play is a core question to be answered. The choice may vary from advisor to token exchange broker depending on the institutions business model.



### Cybersecurity

Sufficient security measures need to be ensured to secure the entire value chain when interacting with a blockchain platform. SECaaS (Security as a Service) could be an additional revenue stream.



### Jurisdiction

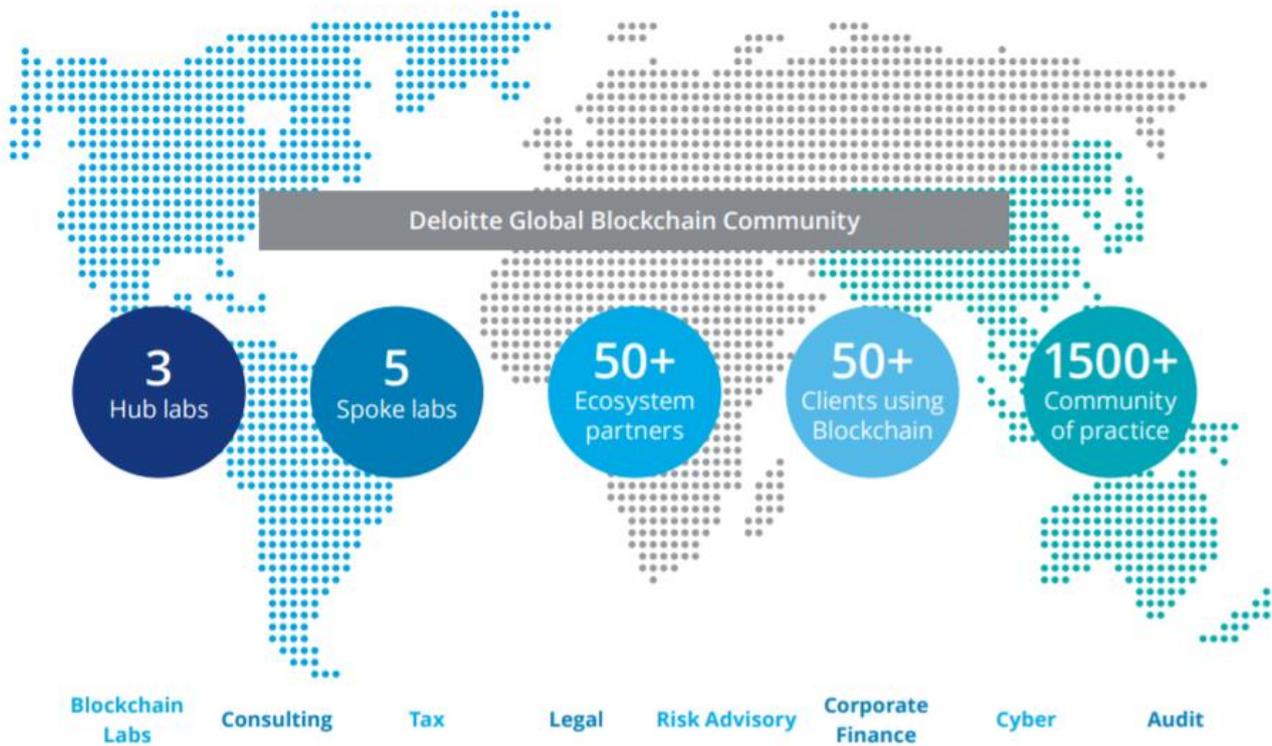
Ensuring a token's compliance across jurisdictions will bring new complexities which require consideration.



### Compliance

MiFID, AML and KYC regulation still applies to the token economy. Tax considerations should not be left behind either with a move into the digital economy.

**Blockchain at Deloitte**



**Deloitte Blockchain at Deloitte**

Our people collaborate globally with clients, regulators, and policy makers on how blockchain and digital assets are changing the face of business and government today. New ecosystems are developing blockchain-based infrastructure and solutions to create innovative business models and disrupt traditional ones. This is occurring in every industry and in most jurisdictions globally. Our deep business acumen and global, industry-leading audit and assurance, consulting, tax, and risk and advisory services help organizations across industries achieve their varying blockchain aspirations. Reach out to our leaders to discuss the evolving momentum of blockchain and digital assets, begin prioritizing initiatives, and understand how to manage the opportunities and pain points associated with blockchain adoption efforts.

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