White Paper

Building Value with Blockchain Technology:
How to Evaluate Blockchain's Benefits

In collaboration with Accenture

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Contents

Foreword

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In 2018, the World Economic Forum released "Blockchain Beyond the Hype", a practical framework that aimed to help decision-makers distinguish between hype and viable use-cases. Once decision-makers had decided that blockchain may add value, they asked another question: How can this value be articulated?

Continuing this series, we are providing businesses, governments and other organizations with a blockchain value framework to help them build out a business case for blockchain investment. This paper builds upon the idea that blockchain deployment is not an end goal. When done right, blockchain is all about rethinking business models, rethinking relationships between companies and between companies and customers, and is, at its heart, a strategic change effort. Therefore, this toolkit helps decision-makers see how blockchain value drivers may map to organizational objectives. Through this alignment, organizations can understand whether blockchain is worth the investment for their specific circumstances and make strategic decisions on whether they should or should not invest in the technology – keeping in mind that blockchain is just one option for organizations looking to digitize.

Created in collaboration with Accenture Research, this framework was based on a global survey of 550 individuals across 13 industries, dozens of interviews with public-sector leaders and private-sector chief executive officers, and an analysis of 79 blockchain projects. A draft of the framework was further validated at a multilateral session of global leaders at the World Economic Forum Annual Meeting 2019 in Davos-Klosters. Succinctly, this framework helps organizational leaders to confidently evaluate the relevant opportunities of blockchain technology.

David Treat,
Managing
Director,
Accenture

Introduction

Since the digital era, organizations have been looking for ways to improve their operating model through modernizing their technology infrastructure. Being able to simplify complex processes while enabling innovation is the driving motivation for tech modernization. Today, organizations are trying to understand what role emerging technologies such as artificial intelligence (AI), the internet of things (IoT), immersive reality and even quantum computing will have in their business. The Fourth Industrial Revolution has arrived, and organizations understand the need to innovate to prevent them from being disrupted. High-growth organizations are investing aggressively and taking a distinct approach to innovation that is change-oriented, outcome-led and disruption-minded. But with blockchain technology, even the leaders have challenges when realizing the true value of the technology.
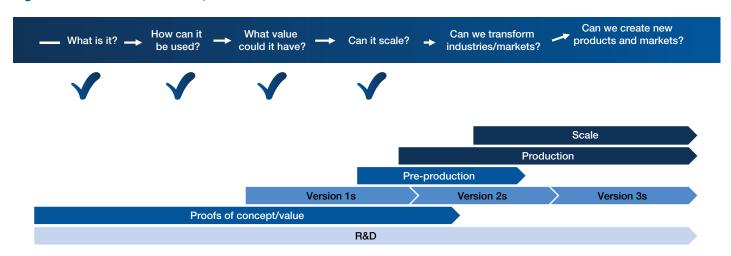
This white paper can help organizations by understanding the state of the blockchain environment and the path to adoption. The analysis highlights the main advantages of the technology (broken down by industry), and the interviews shed light on the benefits and challenges of blockchain technology. And for organizations unsure where to begin or how to build a business case to assess the technology, the value framework shows what blockchain enables and where one can expect to realize value from it. Though peer-to-peer, privacy-enabling payments are perhaps the best-known applications of blockchain technology (e.g. bitcoin), they are not the focus of this paper.

This paper intends to help organizations build out a business case after deciding that blockchain may be a good fit for a particular use-case. For those looking for guidance on decision-making, see Part 1 of this series, "Blockchain Beyond the Hype: A Practical Guide for Business Leaders".

Landscape

Each organization may take the path to blockchain adoption at different times, but the steps along the way remain similar. In many organizations, the move along this path comes to a halt at some point between the proof of concept stage and production. The funding source may be a vital contributor. According to Accenture's "Building Value with Blockchain" survey, more than 64% of blockchain initiatives are currently being funded by IT or research/innovation budgets – implying that the focus is on technology, rather than on aligning with the main areas of opportunity for the organization.

Figure 1: Path to blockchain adoption

However, organizations are certainly taking note of blockchain. Worldwide spending on blockchain solutions is forecast to be nearly $2.9 billion in 2019, before surging to $12.4 billion in 2022.[1] According to a 2018 Constellation Research survey, 67% of US companies are evaluating or implementing blockchain technology, with a quarter already having projects underway or completed.[2] In addition to the vast opportunity, this motivation is often driven by sheer competitiveness. According to the survey, 57% of respondents investing in blockchain technology agreed, or strongly agreed, that their organization should adopt blockchain technology to remain competitive. And of those who declared their blockchain investments, 68% are spending more than $1 million, with 27% spending more than $10 million on blockchain activity.

This activity is not limited to the private sector: A recent World Economic Forum report showed that over 40 central banks are researching distributed ledger technology for a variety of use-cases.[3] Elsewhere in the public sector, there are 202 blockchain initiatives spanning 45 countries.[4]

When asked what led organizations to invest in blockchain technology, 75% included their organizational priority for innovation. The top three areas of interest across surveyed industries were: 1) full traceability of information on the blockchain; 2) the ability to check that data had not been tampered with; and 3) the way the technology is distributed. Notably, few organizations selected "new business products or services" – which ranked last among the options for investment. This suggests the current focus for organizations is on improving existing products and services before considering investing in new opportunities.

Overall, it appears that blockchain truly adds value in instances where there is a need for tamper-evident ledgers along with decentralized control, particularly where participants have an even hierarchy.

Figure 2: Blockchain is perceived to have several benefits in common across industries.

Top advantages per industry

		Automotive	Banking	Comms & media	Consumer goods & services	Energy	Healthcare	High tech	Insurance	Public service	Retail	Software & platforms	Travel	Utilities
1	Full traceability of any information on the blockchain	7	2	4	3	1	1	3	1	3	1	6	1	4
2	Ability to ensure data has not been tampered with	4	1	1	3	4	2	1	2	1	5	2	2	4
3	Distributed nature of the technology	8	4	5	1	8	4	3	3	4	6	4	3	6
4	Smart contracts and automation	2	3	2	2	5	5	6	4	6	3	3	6	3
5	Increased speed and efficiency	3	6	2	5	3	7	7	7	2	4	5	5	1
6	Increased security	1	6	7	7	2	3	1	5	4	2	1	3	2
7	A holistic view with transparency for all appropriate parties	5	5	6	6	5	6	5	5	6	7	7	7	7
8	New business products or services	6	8	8	8	7	8	8	8	8	7	7	8	8

Data Source: "Building Value with Blockchain" survey

The executive perspective

Many of the executives overseeing large-scale and advanced blockchain initiatives stress the technology's value as a data-sharing mechanism. However, it is challenging to convene diverse operations and businesses to implement the technology across the trade chain. As a result, many organizations choose to bring the smallest number of necessary parties to the table before opening it up for additional parties – with the hope that early use-cases will serve as an incentive for other parties to join in the future. Due to their relationships and organizational structure, common infrastructure operators and market-wide collaboration platforms may be well placed to succeed in this space.

"
There are lots of cases where people need common repositories, common systems of record, common directories and things where you need coordination between multiple different parties in a business ecosystem…
"

Brian Behlendorf, Executive Director of Hyperledger (an umbrella project of open-source blockchains and related tools hosted by the Linux Foundation)

The interviews highlighted the potential of the technology to simplify and optimize complete value chains through the sharing of simplified real-time data with increased efficiency. Because the technology is intrinsically decentralized and distributed, blockchain can help remove bottlenecks and put pressure on low-value intermediaries to take up overdue technology and structural improvements or simply leave the market altogether.

One additional theme uncovered in the interviews is the way in which blockchain can stimulate innovation around both products and processes. New opportunities to innovate will arise as external data becomes more trustworthy and improvements in automation, smart contracts and digital identity[5] and assets continue.

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Blockchain is a database architecture technology and, in particular, provides the ability for anyone to build applications on top of a common infrastructure that could be reusable from one customer to the next. Once you've created this shared source of truth through this technology, you also then create the ability for cross-organization workflows to be dramatically simplified
"

Peter Hiom, Deputy Chief Executive Officer of Australian Securities Exchange (ASX)

While this theme was prevalent among executives, only 17% of survey respondents noted "new business products and services" as a top-three advantage of blockchain technology – potentially indicating that the broader populations prioritize short-term gain while executives think longer term.

From use-case to business case

So, your team has a use-case or two you are excited about. If you are still making this decision, the World Economic Forum's Decision Tree may help to determine the feasibility of blockchain for your idea.[6] The next step is assessing the value of your blockchain use-case. This can effectively be done using the Blockchain Value Framework and the four-step process detailed below.

This prerequisite step is critical. It is important to carefully consider whether blockchain is the best solution, relative to other technologies or other digitization strategies. As noted in "Blockchain Beyond the Hype", blockchain may not be a viable solution or it may not be the correct time to pursue this avenue.

The Blockchain Value Framework

This value driver framework aims to help organizations identify the value of blockchain technology in their use-cases and build a corresponding business case. As stated earlier, it is based on a global survey of 550 individuals across 13 industries, dozens of interviews with public-sector leaders and private-sector chief executive officers, and an analysis of 79 blockchain projects. The projects were evaluated across three main value dimensions: 1) improving productivity and quality; 2) increasing transparency among parties; and 3) reinventing products and processes.

When building business cases to evaluate the blockchain opportunity, the value drivers can become the prime benefits or opportunities that organizations need to assess. These will differ for each use-case – some will be realized in traditional metrics such as operating costs, number of employees or increased revenue; in other cases, opportunities will be measured in lives saved or privacy rights enabled. It is nearly impossible to accurately state the general impact of a use-case broadly, but given this framework, organizations can identify potential expected areas of value on which to focus within their personalized business cases.

It is important to note that some of these value drivers may be achieved through digitization that does not involve blockchain. So the evaluation should take into account blockchain's costs relative to other solutions.

Figure 3: Blockchain Value Framework Cheat Sheet

Blockchain Value Framework

KEY DIMENSIONS	Improving profitability and quality		Increasing transparency among parties		Reinventing products and processes	
CAPABILITIES	**Automation** Self-validating network + smart contracts enable auto execution of business rules.	**Control** Control at the individual data element level, maximum flexibility over what data is shared and how.	**Distributed** No single-entity data ownership, consensus applied to transactions and shared access with no central point of failure.		**DAx (Decentralized Autonomous x)** Transparent, predefined rules mean new ventures may be created, providing autonomous products/services through decentralized model.	
	Full traceability Provenance and complete history of all new data added is known.	**Security** Data can be encrypted and segregated at the data element level, while also enhancing overall data security.	**Holistic view** Single source of truth - all stakeholders see the same information to which they have access.		**Enhanced identity** A combination of capabilities with advancements in digital identity (e.g. biometrics) increase confidence in, and improvement of, security and management of customer and personal identity data.	
	Speed | efficiency Can enable faster data transfer, streamline tasks to optimize process efficiency, particularly where intermediaries have been removed.	**Evidence tampering** Underlying mathematics and cryptography allow users with appropriate access to verify data has not been altered.			**Tokenization and digital assets** Physical objects with verified unique digital representation enable digital ownership, management and transfer.	
VALUE DRIVERS	Auditability	Compliance	Data management	Data security	Data sharing	Resiliency	Authentication	Identity management
	Ownership	Payments	Process automation	Reconciliation	Transparency	Trust	Marketplace creation	New | enhanced products and services
		Standardization	Track and trace					New | expanded partnerships

The blockchain value framework in action

1. **Understand the impact of the idea to the business.** Each use-case should initially be assessed for the pain points it addresses and/or the opportunities it creates. Next, those pain points and opportunities are prioritized. This assessment of the current state captures an honest picture of the present situation, and what matters most – without thinking about how to solve issues, or which technology to use. This process reemphasizes the importance of the projects being managed and owned by the profit and loss (P&L) groups.
➔ **Key questions**: What are your pain points and areas for opportunity? What matters most to your organization?

2. **Think through blockchain's role**. Blockchain use-cases have the potential to transform the business across three main dimensions: 1) improving productivity and quality; 2) increasing transparency among parties; and 3) reinventing products and processes. Bucketing the pain points and opportunities into these three groups simplifies the next steps.
➔ **Key questions**: Are there characteristics of blockchain that can help with the identified pain points/areas of opportunity? How so, specifically? Are there other technologies that can solve the same pain points/areas of opportunity more effectively or efficiently? Consider cost, risk and speed of implementation.

Consider the real-world example below.

3. **Use the Blockchain Value Framework Cheat Sheet to assist in moving from current-state assessment to future-state blockchain opportunity**. Each dimension includes the blockchain-enabling capabilities that – at times singlehandedly, but often in conjunction with others – provide a solution to the pain point or present areas of opportunity. Consider this as the validation that blockchain is the correct technology to solve the current-state priority and a first step for future development to focus on.
➔ **Key questions**: How do those characteristics map to the enabling capabilities? Check in again – are these priority areas for your organization, and are these enabling capabilities specific to blockchain when considered holistically?

4. **Identify where the value will be created**. The value drivers are where you'll find your cost savings, your increased revenue and your improved customer experience. Each driver touches on important components of the business that are driven by technology – and when the time comes, these value drivers become the basis for any business case.
➔ **Key questions**: What are the value drivers that map to this pain point/area of opportunity? How can we think about measuring or capturing this type of impact? Have we made a strong case – both at the organization level and the ecosystem level?

Freight bill audit and pay

Billions of dollars a year are invoiced to organizations for freight moves by truck, train, aircraft and ship. The freight bill audit and pay (FBA&P) process involves matching invoices against the services rendered prior to payment remittance. The shipping process starts with negotiating shipping rates, completing the purchase order, tracking the shipment, calculating and auditing the invoice, and finally paying the carrier. Along this process, there are numerous pain points and potential areas for discrepancies, each of which increases the risk of mismanaging or incorrectly paying an invoice. Blockchain offers an opportunity to solve or mitigate these issues. Consider the below example, which begins with the value chain, identifies the opportunity for blockchain technology and its enabling capability, and then pinpoints the value driver. This is a real-world example of a blockchain solution for an oil-and-gas company. Upon completing this analysis, the team was able to build a business case to quantify the value of each driver, calculating an expected reduced freight spend of 5% (up to $100 million).

Figure 4: How blockchain can help solve FBA&P issues

Pain points/areas of opportunity	Blockchain solution	Enabling capability	Value driver
Difficulty in managing missing and changing rates, which leads to downstream invoicing problems	Having a single shared source of previously agreed-upon information can ensure everyone is aligned on the rates and corresponding terms and conditions	Holistic view	Transparency
Lack of visibility in goods movement and shipment location	Being able to track the shipment in real time provides all parties with increased confidence in their goods and the ability to quickly react to any unexpected disruptions	Full traceability	Track and trace
Inaccurate rates or calculations being used for the invoice, often caused by lack of visibility or confusion on metrics such as number of miles travelled, time to complete the trip etc.	Primary organization would no longer need to trust the accuracy of the shippers' data or calculations, such as the number of miles travelled or time to complete the trip, as this data can be automatically gathered and shared with all parties on the blockchain	Holistic view	Data sharing
Use of third-party auditors that are costly and lengthen the process	Using smart contracts and blockchain technology, the level of effort to audit invoices is greatly reduced. Many activities, such as reconciliation, are eliminated through having a single shared document, while others are automated through smart contracts calculating invoices based on agreed-upon rates and tracking data	Automation	Auditability

Key Dimension 1: Improving productivity and quality

Auditability
Given blockchain's ability to provide a shared ledger of transactions to all parties, with full traceability of any assets and associated activity, organizations can not only cut their auditing costs but raise levels of confidence in the data they are producing without having to manually validate the data.
Example metric: mistakes eliminated

Compliance
Compliance brings with it a great deal of risk and damage if mismanaged. Knowing that blockchain can't be tampered with can provide increased confidence in the data, while streamlining administrative processes and reducing costs. Processes involving manual checks for compliance that currently take weeks can be accelerated through a distributed ledger of all relevant information. Tying blockchain technology to emerging technologies such as AI and the IoT can enable real-time data gathering and processing to improve overall compliance.
Example metric: risk mitigated

Data management
Blockchain can improve the management of data in three main areas: 1) data provenance and accuracy through knowing more about digital assets and accompanying data; 2) data integrity through access/authentication to the network and easy identification of manipulation or tampering; and 3) data aggregation and organization, as blockchain enables the seamless sharing of real-time data from a single data source.
Example metric: improved product forecasting

Data security
According to new Accenture research, poor data security could cost companies $5.2 trillion over the next five years – yet only 30% of organizations are confident in their data security.[7] Blockchain technology makes use of military-level cryptography that creates a more secure environment for sharing and storing data, reducing the risk of a data breach and limiting the damage should it occur.
Example metric: data breaches prevented

Ownership
Blockchain technology can enable true digital ownership of both real-world goods and digital assets by creating improved intellectual property and personalized data profiles, without the need to check the history or current state of the item.
Example metric: improved customer experience

Payments
Blockchain technology can draw on the single shared data source to ensure payments are accurate and remove the need to manually audit and track down payments. With smart contracts, these payments can be automated, streamlining the entire process – potentially removing unnecessary processing costs.
Example metric: eliminated overpaying of invoices

Cryptocurrency and payment systems

Blockchain technology is perhaps most widely discussed in the context of decentralized "cryptocurrencies" and payment systems. While the core motivations for the use of blockchain are similar – increased time and cost efficiency, and increased transparency – the singular nature of the use-case means that value may be evaluated outside of the outlined value framework. Specifically, blockchain enables peer-to-peer payments without banking intermediaries and reduces the settlement times and costs associated with these payments. An organization may evaluate whether it wants to take advantage of these properties for any number of business reasons. If it proves valuable, the organization can create a new system or make use of existing systems.

Process automation
Blockchain enables business processes to be executed automatically via rules-based algorithms. Organizations can use blockchain to look for improvements in efficiency, cost savings and increased worker productivity and retention by shifting the focus of the workforce to one of jobs with higher engagement and satisfaction.
Example metric: resources reallocated

Reconciliation
Inaccurate or missing information or fragmented communication between multiple parties are often magnified year after year as unreconciled items get pushed forward. Additional complexities arise due to duplicate entries, post-event changes from cancellations or returns, or conversion from analogue to digital inputs. Blockchain technology can significantly cut down the overall costs in solving reconciliation while reducing errors and the accumulation of unreconciled items.
Example metric: eliminated duplicate payments

Standardization
For multiple organizations to work together in a blockchain system, they must agree on common terms, business logic and business flow as they share access to the same data and apply the same smart contract-enabled business logic. All participants must agree to the set of rules by which they will work together. This task is often daunting for many industries that have minimal experience of driving this level of agreement.
Example metric: improved speed to market

Track and trace
The management and tracking of supply chains[8] as it stands today is cumbersome, costly and susceptible to human error and vulnerable to criminal activities. Distributed ledger technology allows trading organizations to view each step of the supply-chain process. Each party can verify the current state and trail of the products without depending upon direct communication with others in the network.
Example metric: resource time saved

Key Dimension 2: Increasing transparency among parties

Data sharing
When retained in isolated systems – often fragmented and rarely shared between organizations – data starts to lose its value and verifiability. Without blockchain technology, a receiving organization must trust the validity of any data it receives before being able to capture its value. With blockchain, however, trading partners can share real-time data, but also the history of that data and any modifications to it.
Example metric: enhanced value from data models

Resiliency
Organizations that manage and maintain on-site and central data systems are at risk of malicious or incompetent employees, natural disasters or other events that can irreparably destroy data. Existing in a distributed form, blockchain creates a highly resilient network with multiple shared copies of the data, which mitigates the risk of an isolated attack or incident.
Example metric: decreased downtime

Transparency
Blockchain technologies' distributed ledger allows all designated parties to view the data in real time. With unlimited transparency, organizations can identify opportunities, improve decision-making and track and trace the outcome of those decisions.
Example metric: improved incident response rate

Trust
Trust is being challenged in the digital world, with organizations unable to verify basic essentials. Blockchain helps enable and even automate trust through cryptographically securing information and providing transparency to the state and trail of data.
Example metric: mitigated business risk

Key Dimension 3: Reinventing products and processes

Authentication
A core function of blockchain technology is its public and private key cryptography, which can serve as a basis for authenticating one user across multiple networks, resulting in increased confidence in the overall network and participants.
Example metric: prevention of attacks by bad actors

Identity management
With more and more business transactions being conducted online, it no longer makes sense to rely upon physical documents as the only means of establishing the identity of a user or object. Blockchain technology enables enhanced characteristics in how digital identity is both managed and used, while moving beyond the limitations of being operated by one institution.
Example metric: improved retention rate

Marketplace creation
Blockchain technology improves confidence in products and services in the marketplace, while also using a shared ledger, smart contracts and digital assets to facilitate real-time peer-to-peer transactions.
Example metric: new markets created

New and enhanced products and services
The technology's unique capabilities are creating the foundations to enhance existing products and services and create new ones. New digital assets can exist beyond the umbrella of one organization, company or government. How organizations offer and manage those products and services is evolving, giving power back to the creators and consumers. Early examples include digital rights management and improved land titling.
Example metric: new product revenue

New and expanded partnerships
With the increased confidence in data afforded by blockchain, new partnerships can be formed more easily. Many of these partnerships can have automated components as well, through exploiting digital assets and smart contracts.
Example metric: new distribution channels

Obstacles and challenges

Beware of the hype
The technology is commonly seen as a great opportunity and transformation enabler, but unrealistic expectations remain a significant challenge. Survey respondents on average expected a 24% return on investment on their early blockchain projects, but realized only a 10% return. On top of that, 42% of respondents expected a noticeable or significant brand improvement from simply announcing a blockchain project, with that total jumping to 87% upon delivering a blockchain project. It is important for organizations to carefully consider whether there are other technologies or approaches to digitization that may deliver on their objectives more effectively or efficiently.

Moving from proof of concept to production requires stakeholder buy-in
Proof of concept projects are often led by evangelists, developed in R&D, and always in controlled environments. Moving to production requires stakeholder buy-in and can be a real challenge. As Peter Hiom, Deputy Chief Executive Officer of Australian Securities Exchange (ASX), explains, helping stakeholders to understand the technology and its benefits "is an ongoing process and it's proven to be hugely valuable. It's enabled us to better understand the needs of our customers and ensure we develop functionality that will make their lives easier."

Working with others is difficult and it is hard to capture ecosystem value
"The whole point of doing blockchain is it's a team sport," Christopher G. McDaniel, President of the Institutes RiskBlock Alliance, explains. "If you're trying to do it on your own, maybe that's OK from a proof-of-concept standpoint, but if you ever want to get real production value, you have to join with others. Otherwise there's no point." In order to ensure that proof of concepts (POCs), standards and solutions are adopted at industry scale, organizations must get better at working together to create an environment of shared values and partner up to solve additional obstacles. David Rutter, Founder and Managing Partner of R3, says, "In the early days it was getting everyone to understand the technology and its uses. Now it's more like how the operational and legal construct works with the new technology."

Complex legacy systems and technical debt
Some 87% of survey respondents acknowledged that it is far more challenging to undertake the implementation of a blockchain solution as part of an existing digital transformation – especially when a substantial amount of capital has already been spent on a legacy technology. Alternative digital solutions may offer faster returns and be more strategic in the short term, but organizations should evaluate whether blockchain provides additional benefits in the longer term.

Uncertainty exists
Prior to embarking on a blockchain project, 59% of respondents stated they had no confidence that the project would deliver a positive return on investment – and only 38% of those who have implemented the technology developed a business case prior to investing. Many of those interviewed had doubts as to whether the technology was production-ready – "limitations on blockchain technology" and "scalability issues" were selected as the biggest challenges in adopting blockchain. Though many technologists and service providers classify the technology as v1.0 and ready for production, scepticism remains. It is important to keep in mind that blockchain is in its early stages and there are limitations as a result. Challenges exist in fully addressing security, speed and efficiency, given the nascency of the technology.

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> The industry has worked on many POCs and experiments and has a reasonably good understanding of what works. However, you can prove that something works, but you cannot prove that something will not fail. You believe it to be secure, but you cannot prove that it is hack-proof. You know that there will be cost savings, but you cannot foresee if there will be unexpected costs. You believe there will be benefits, but you do not know if there will be unintended consequences. These lingering uncertainties are perhaps why there is still a reluctance to advance beyond POCs to actual production usage. We need to summon stronger management resolve to move beyond POCs
> "

Ravi Menon, Managing Director of the Monetary Authority of Singapore

Decision-maker concerns

In interviews, the chief executive officers and organizational leaders have identified several major risks associated with this move towards blockchain technology.

Lack of expertise and assessment for promising new technology

"New technology domains often demand a sort of literacy with them … If your team isn't understanding either the technical side of how to build them, or the strategic side of how to use them best, then you're going to be playing catch up competitively for those who do," says Brian Behlendorf, Executive Director at Hyperledger.

"With blockchain technology, there is a fundamental shift from centralized to decentralized architecture, which has a wide-ranging impact from technology architecture to business processes to operating models," Ravi Menon, Managing Director of the Monetary Authority of Singapore, points out. "Such expertise cannot be developed overnight."

Missing early-mover value and potential market share

Blockchain's transformational architecture paves the way for new business models and relationships. By not engaging with the technology, an organization risks being left out of the room when impactful decisions are made. As David Rutter, Founder and Managing Partner of R3, warns, "If they're not looking at blockchain now, and there are applications going live in their industry, they could be disadvantaged in a pretty big way as they try to play catch-up." For the opportunities where the time is right, early movers will capture that advantage. According to Sunil Kaushal, Regional Chief Executive Officer, Standard Chartered, "There is significant value that companies in financial services can create by moving first, setting the stage for new technologies and creating new business models. It is not much different than other technology leaders like Google, Amazon etc. where early movers defined new opportunities and captured disproportionate market share."

Some 51% of survey respondents identified "missing out on developing new products/services" as the number-one expectation if they do not invest in blockchain technology in the near future. The other two most common answers were missing out on speed/efficiency gains (23%) and missing out on cost savings (15%).

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If they're not ready, if they're not experts in this technology, then a new set of middlemen are likely to step in, extracting their own monopoly rents for intermediating there. I don't know how this is going to turn out, but it seems to me a big risk is that you miss the opportunity again if you're not ready for it

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Chris Ballinger, Chief Executive Officer of Mobility Open Blockchain Initiative (MOBI)

Recommendations

Take time to understand the technology
It is important to think through the ways in which blockchain may affect a given industry. In taking the time to understand the characteristics and value drivers of blockchain, organizations can assess what opportunities exist, but also – and potentially more important – what threats may loom. The value driver framework can help build a business case for specific projects, but creative thinking must drive the consideration of greater impacts. Each organization should have a senior leader responsible for understanding and tracking what is happening with the technology and within industries.

Set realistic expectations
There are challenges to overcome – and it may take time to realize the range of values that blockchain may bring. Like any major business or organizational transformation, success is dependent upon more than simply plugging in the technology or spinning up a blockchain node. Early movers may identify incentives to build and operate the networks, accounting for the investment and risk, while still developing an environment of shared value for all future participants. They may realize incremental value at first, but network effects will magnify the long-term impact. Even within an organization, the value flows only when the operations, risk, finance etc. teams treat the blockchain systems and accompanying data as the single source of truth. Ensuring everyone is on the same page from the beginning, both within one's organization but also with external partners, will provide the greatest chance of overcoming impatience and unrealistic assumptions.

Align to strategic priorities
The answer on whether to be a first mover or to wait should be based on whether there is potential for significant added value within the identified opportunities and pain points. For those ready to move now, maintaining that use-case focus to identify the problem or opportunity is vital. Moving first should be a result of identifying a competitive advantage to building the blockchain networks and using the technology first. Different strategies are correct for different organizations – for some, not investing immediately is the correct response.

Evaluate blockchain's value relative to other technologies
Blockchain is not a substitute for digitization and should not be treated as such. For many use-cases, other technologies will be lower cost, lower risk, and implemented more quickly. As such, organizations should do their research on whether there are better-suited solutions for their pain points/areas of opportunities before committing to blockchain.

Remain agile in your approach
Though there may not be a clear value proposition now, it will be important for organizations to monitor and prepare if they are interested in potentially participating. This methodology gives organizations the ability to make informed decisions and develop and evolve their blockchain strategy.

Think beyond your individual organization
The decentralized nature of blockchain makes a transformation from an isolated approach to end-to-end value-chain integration within fragmented and complex environments more attainable. In fact, a lack of collaboration can undermine – or even block – such transformation. In assessing value, it is important to consider network and scaling effects, particularly as enabled by collaboration.

Acknowledgements

Contact
For questions about the World Economic Forum's work in Blockchain and Distributed Ledger Technology, please contact blockchain@weforum.org.

About the Blockchain and Distributed Ledger Technology Portfolio at the World Economic Forum:
The Blockchain and Distributed Ledger Technology portfolio at the World Economic Forum aims to support the co-designing and testing of policy frameworks and governance protocols to accelerate the societal benefits of, and mitigate the risks from, distributed ledger technology. Government, the private sector, civil society, academia and other stakeholders will pilot these frameworks and protocols to test theories about impact, iterate based on lessons learned and then scale up their adoption globally.

About the Centre for the Fourth Industrial Revolution Network:
The Centre for the Fourth Industrial Revolution Network's vision is to help shape the development and application of emerging technologies for the benefit of humanity.

The network's mission is to co-design, test and refine governance protocols and policy frameworks to maximize the benefits and minimize the risks of advanced science and technology. To accelerate impact and drive change, the network brings together governments, business organizations, dynamic start-ups, civil society, academia and international organizations from around the world to work together across nine emerging technology areas.

The network develops, implements and scales up agile and human-centred pilot projects that can be adopted by policy-makers, legislators and regulators worldwide.

Endnotes

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