FORRESTER®

Seize The Day: Public Blockchain Is On The Horizon

Examine The Limitations Of Private Blockchain And Benefits Of Public Blockchain To Make The Most Of This Technology Opportunity

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Consider Public Blockchain To Escape The Limitations Of Private Networks

Although the technology is still in its early stages, organizations have already started to plan for, pilot, and implement blockchain. To date, enterprises have almost exclusively chosen to work with private/permissioned blockchains, a choice driven largely by fear of public blockchain networks.[1] And this fear is often due to a lack of understanding of how public blockchain networks operate. But as private blockchain projects get underway, firms are quickly discovering their limitations.

In August 2019, EY commissioned Forrester Consulting to conduct three interviews and survey 233 decision makers in the US, Europe, and Asia to explore firms' impressions and experiences with blockchain technology broadly and public blockchain specifically.

Key Findings

Though most firms are currently leveraging private blockchain, there is growing interest in public blockchain: 75% of respondents are likely to use public blockchain in the future.

Firms may be trying to force the technology to do things it was never intended to do. This is especially prominent with privacy and confidentiality concerns.
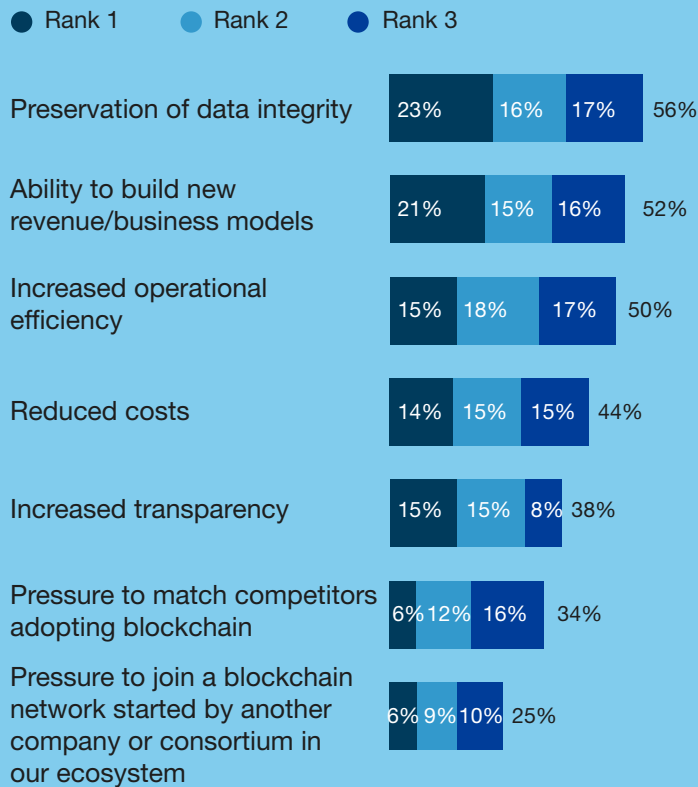
Interoperability is a key concern for private blockchain, which is exacerbated when firms start their own private networks. Leveraging a public blockchain could ease this problem.

Data Integrity Preservation And New Business Model Creation Drive Blockchain Use

Why leverage blockchain? Most often, firms consider blockchain because of a desire to improve their business, rather than a need to keep up with competitors or pressure from their peers. Specifically, the need to preserve data integrity and the ability to build new revenue or business models are the top drivers for more than half of all respondents. Additional factors include the desire to increase operational efficiency and reduce costs.

Pressure to join a network started by another company, however, is not a key driver. This, as we'll see, may be part of the reason most firms are starting their own networks, which, in turn, leads to interoperability issues down the line.

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"What are the key drivers causing your organization to consider blockchain generally?"

● Rank 1   ● Rank 2   ● Rank 3

Preservation of data integrity — 23% | 16% | 17% — 56%

Ability to build new revenue/business models — 21% | 15% | 16% — 52%

Increased operational efficiency — 15% | 18% | 17% — 50%

Reduced costs — 14% | 15% | 15% — 44%

Increased transparency — 15% | 15% | 8% — 38%

Pressure to match competitors adopting blockchain — 6% | 12% | 16% — 34%

Pressure to join a blockchain network started by another company or consortium in our ecosystem — 6% | 9% | 10% — 25%

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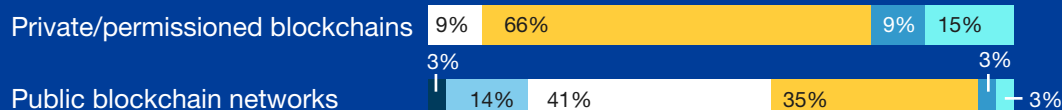
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Most Blockchains Today Are Private, But Public Is On The Rise

Today's blockchain projects are predominantly private: Every respondent in our study was at least interested in private or permissioned blockchains. But despite this widespread interest, private blockchain projects are still largely in their planning stages: 66% are planning to implement within the next 24 months, and only 24% have already implemented. And of these respondents, about two-thirds say their firms have chosen to start their own networks rather than participating in networks that already exist.

Although private blockchains are popular currently, there is considerable interest in public blockchain networks. Forty-one percent of respondents are interested with no definite plans, and another 35% are actively planning to implement within the next two years.

"What are your organization's plans when it comes to blockchain?"

- Unfamiliar with the technology
- Not interested
- Interested but no plans to implement
- Planning to implement in the next 24 months
- Implemented/Implemented, not expanding/upgrading
- Expanding or upgrading implementation

Private/permissioned blockchains

| 9% | 66% | 9% | 15% |

3%

Public blockchain networks

3%

| 3% | 14% | 41% | 35% | 3% | 3% |

"Which of the following best describes your current blockchain network?"

We started our own network — 67%

We are a participant in another network — 31%

We are a member of a consortium — 1%

Top Use Cases Align To Top Drivers

Considering that preservation of data integrity was the No. 1 driver of blockchain adoption, it's unsurprising that the most common use case for blockchain is also data integrity. Other top use cases also align to goals. About half of all respondents prioritize use cases that would improve efficiencies and enable new revenue models like supply chain track-and-trace, payment support processes, and digitization of document flows.

Top Blockchain Use Cases

Data integrity **(64%)**

Supply chain track-and-trace **(55%)**

Payment support processes **(52%)**

Digitization of document flows **(47%)**

Revenue distribution **(39%)**

Trading **(33%)**

Tokenization of assets **(33%)**

Trade finance **(32%)**

Security And Privacy Are Key Concerns . . .

When leveraging blockchain, firms are rightly most concerned with privacy and security. Challenges around authentication, permissioning, and access management are critical to security. But misconceptions — like the horror stories around Bitcoin theft — also lead people to think there's a security issue with public blockchains in general. In reality, those and other cryptocurrency breaches are at wallet or exchange level; that is, not the blockchain itself, but the on and off ramps.

Privacy, however, is an inherent key challenge. By default, any on-chain data is visible to all who have access to the chain; for public blockchains, that's everyone. But even private chains have commercial confidentiality considerations that call for solutions that support selective access and viewing rights. This goes against a purist's view of how a blockchain should be architected, but it is vital for any blockchain-based network to thrive.[2]

Top Blockchain Concerns

Security concerns **(49%)**

Personal data privacy concerns **(46%)**

Concerns about interoperability with other blockchain networks **(45%)**

Top Public Blockchain Concerns

Lack of technology maturity **(58%)**

Security concerns **(53%)**

Personal data privacy concerns **(50%)**

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. . . But Firms Must Start Thinking Of Blockchain In a New Way

While it's an important rule of thumb with any new technology, it's critical with blockchain: Don't try to make the tool do something it doesn't want — or wasn't designed — to do. Business concerns about privacy and confidentiality are all valid, but they must be viewed and assessed in the context of what a blockchain was designed to do. As one respondent said: "Blockchains don't want to compartmentalize things. It's not what they're there for." Firms must rethink what they're putting on their blockchains to have the technology work with rather than against them.

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"[Firms] get educated by the private blockchain companies. Then, they'll go to the public blockchain companies . . . and they'll try to adapt the same model and framework. If you come to a public blockchain from a private blockchain lens, then you're going to expect very high throughput and think that the public blockchain is broken."

CEO, SECURITY TOKEN PLATFORM

"Try to get a blockchain system . . . to have good compartmentalization. Basically you wind up twisting it into a pretzel because it's not what the technology wants to do. Blockchains don't want to compartmentalize things. It's not what they're there for. So how do we use a blockchain?"

PRODUCT EXECUTIVE, BLOCKCHAIN TECHNOLOGY COMPANY

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Interoperability Is A Large Stumbling Block For Private Blockchains

Unsurprisingly, given the preponderance of firms that are starting their own networks, respondents are concerned about interoperability. In fact, this was the third most common challenge behind security and privacy. If everyone is starting their own network, eventually these disparate networks will need to work together to get anything done, which introduces the potential for problems. Concerns about interoperability with other networks is even higher for those who are planning or already leveraging public blockchain. This may be because public blockchains are less likely to have this problem, making them a potentially better option for firms looking to leverage blockchain in the long term.

53% of firms that are planning/already leveraging public blockchain see interoperability as an issue.

**45% of respondents are concerned about interoperability with other blockchain networks.**
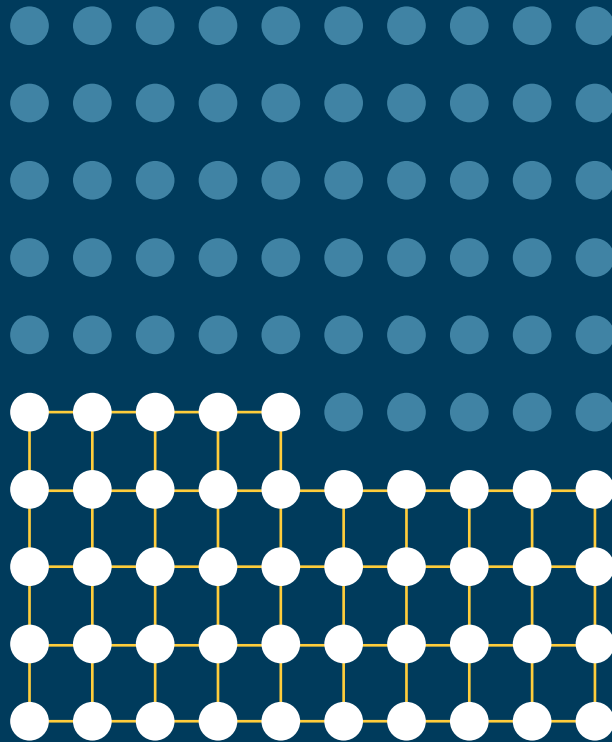
Firms See Future Potential In Public Blockchain

Few enterprises use public blockchains at the moment. This isn't surprising in light of current concerns, in particular around security and privacy as well as the limitations inherent today in what is still a nascent technology. At the same time, the pace of innovation in the blockchain ecosystem is rapid, with teams working hard to address today's limitations. Survey respondents also see this potential, with 75% stating that they're likely to leverage public blockchains in the future, and nearly one-third saying they're very likely.

FORRESTER OPPORTUNITY SNAPSHOT: A CUSTOM STUDY COMMISSIONED BY EY | NOVEMBER 2019

"How likely is your firm to leverage public blockchain networks in the future?"

Not at all likely	Not likely	Somewhat likely	Very likely
3%	22%	43%	32%
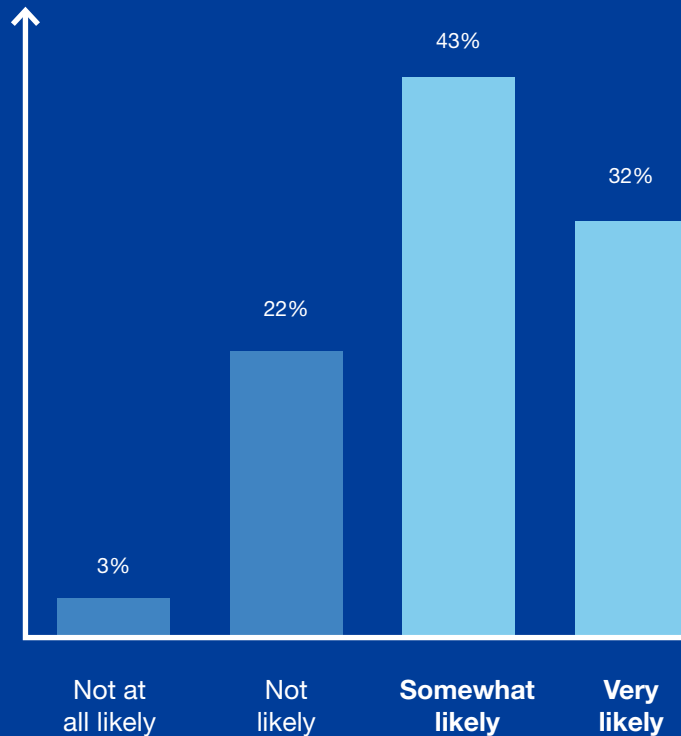
Base: 212 director+ blockchain decision makers in the US, Germany, France, Singapore, and Hong Kong
Source: A commissioned study conducted by Forrester Consulting on behalf of EY, September 2019

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Early blockchain projects are largely reliant on private networks due to a lack of understanding of how public blockchain networks operate, fears of the "Wild West" of cryptocurrencies, and firms' varying appetites for risk. However, private blockchains bring their own set of problems, particularly around interoperability.

Public blockchains will have fewer issues related to interoperability, and when appropriately architected, they can still maintain strict security and privacy controls with the help of technologies like zero-knowledge proofs. But fundamentally, firms need to assess how they leverage blockchain overall, ensuring the technology is being used in a way that's compatible with its design. Firms that examine the trade-offs of private networks and consider the benefits of public blockchains will make the most of this nascent technology opportunity, particularly in the longer term.

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Methodology

This Opportunity Snapshot was commissioned by EY. To create this profile, Forrester Consulting conducted a custom survey of 233 IT and business decision makers in the US, France, Germany, Hong Kong, and Singapore. Forrester also conducted three interviews with blockchain decision makers in the US. All research began in August and was completed in September 2019.

ENDNOTES

[1] In this study, we use the terms private and permissioned blockchains interchangeably to mean networks that require permission to join and where participants must meet joining criteria and may have to undergo a vetting procedure prior to joining. Public blockchains are blockchains where anybody can participate without prior vetting or needing permission to join.

[2] Source: "Blockchain Technology: A CIO's Guide To The Six Most Common Myths," Forrester Research, Inc. February 7, 2018.

ABOUT FORRESTER CONSULTING

Forrester Consulting provides independent and objective research-based consulting to help leaders succeed in their organizations. Ranging in scope from a short strategy session to custom projects, Forrester's Consulting services connect you directly with research analysts who apply expert insight to your specific business challenges. For more information, visit forrester.com/consulting.

Demographics

GEOGRAPHY

42% US
30% France and Germany
28% Hong Kong and Singapore

COMPANY SIZE

54% 1,000 to 4,999 employees
33% 5,000 to 19,999 employees
13% 20,000 or more employees

RESPONDENT LEVEL

56% Director
27% Vice president
17% C-level executive

TOP INDUSTRIES

20% Technology
11% Manufacturing and materials
9% Retail