



Deloitte's 2021 Global Blockchain Survey

A new age of digital assets

About 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, consulting, tax, risk, and financial 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, prioritizing initiatives, and managing the opportunities and pain points associated with blockchain adoption efforts. To learn more, [let's talk](#).

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IN THE LAST year, everything has changed for blockchain, digital assets, and financial services—and not only due to the COVID-19 pandemic. The proliferation of digital *everything* as both a means of exchange and a store of value has expanded significantly, with a seismic shift impacting the global financial services industry (FSI) in particular that has recently been further challenged by new business models around digital assets.

In our 2020 *Global Blockchain Survey* report,¹ we examined the role and evolution of digital assets, and how blockchain-based financial infrastructure could transform banking and financial markets. This year, we focus on respondents from FSI, given the ubiquitous role that the sector plays across the broader economy. Our 2021 survey finds that global FSI leaders see digital assets—and their underlying blockchain technologies—as a strategic priority now and in the near future: In fact, nearly 80% of overall respondents say that digital assets will be “very/somewhat important” to their respective industries in the next 24 months.

The business imperative of adopting blockchain and digital assets is growing noticeably, as organizations increasingly accept that their current business models are at stake. More than three-quarters of FSI respondents strongly or somewhat agree that their organization will lose an opportunity for competitive advantage if they fail to adopt blockchain and digital assets.

Therefore, while in prior years, we focused on the technology’s back-end usefulness; for this report, we look primarily at how organizations are harnessing the capabilities that run on blockchain today—in particular, FSI applications such as crypto assets, moving value, and banking services. Our survey trends and data provide a clearer picture of current and future expectations for the global financial services industry.

METHODOLOGY

Deloitte conducted this survey between March 24 and April 10, 2021, primarily as a research vehicle to gain insights into overall attitudes and investments in blockchain and digital assets. The survey highlights here reflect those opinions and perceptions around blockchain and digital assets and the potential impact they may have. The information shared provides summaries of a subset of the overall data and insights collected.

The survey polled a sample of 1,280 senior executives and practitioners in 10 locations: Brazil, China Mainland, Germany, Hong Kong SAR, Japan, Singapore, South Africa, the United Arab Emirates, the United Kingdom, and the United States. Respondents had at least a general understanding of blockchain, cryptocurrencies, and digital assets.

Disruption in financial services

TODAY, DIGITAL ASSETS are disrupting the entire financial market. Indeed, the rise in digital assets is affecting every organization and industry that is a customer of FSI—that is, pretty much everyone. Blockchain is driving change in the holistic financial ecosystem, from deposit taking to payments, lending, investing, and trading anything of value. The very nature of financial instruments, from money to stocks, and the infrastructure for any type of transaction is changing—for the better.

Thus, our focus on FSI is well placed.

Financial services leaders are concentrating on these products and disruption to today's models, which will have wide ramifications in terms of the products that FSI companies provide to enable economic activity and economic growth.

But questions remain: Will this new financial services infrastructure create opportunities for economic growth and activity more generally? How will FSI models change? Is the regulatory structure over financial services ready for change? Will it lay the groundwork to disintermediate banks, investment managers, payments companies, and insurance companies?

Financial services organizations appear to be racing to write the future to define their role in it—but for now, this future remains uncertain. What is clear: Digital assets are a driving force behind the next phase of this evolution, which will be a radical and welcome upgrade from the fragmented, batch cycle, brittle nature of financial products and infrastructure that currently exist. FSI—all industries, really—could benefit from the improvements underway across the financial ecosystem.

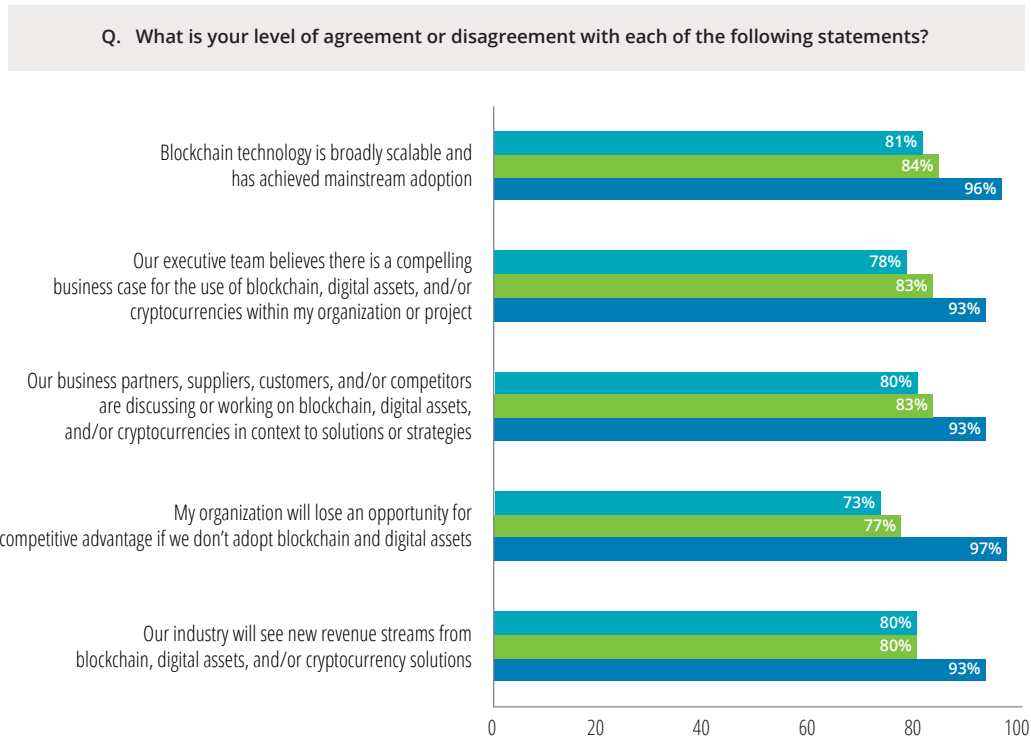


FIGURE 1

How do financial executives view blockchain and digital assets?

FSI overall respondents and, especially, FSI Pioneers express stronger convictions about the critical importance of blockchain and digital assets than overall respondents

■ Overall ■ FSI overall ■ FSI Pioneers



Notes: Percentage of respondents who strongly or somewhat agree with each statement. N=1,280 (2021 overall); N=320 (FSI overall); N=70 (FSI Pioneers).

Source: Deloitte's 2021 Global Blockchain Survey.

THE FSI PIONEERS

In a deeper analysis of our survey data, we identify a subset of FSI respondents on the cutting edge that we term *Pioneers*. These are respondents whose organizations have already deployed blockchain solutions into production and/or integrated digital assets into their core business activities. Yet beyond walking the walk, what distinguishes the Pioneers is their vision of blockchain and digital assets as a top-five strategic priority. FSI Pioneers have deep convictions about the potential that blockchain and digital assets offer. Throughout the report, we differentiate the Pioneers from the general FSI cohort and overall respondents. These results illustrate the relative importance that FSI Pioneers place on blockchain and digital assets.

From physical to digital

THE END OF physical money as we know it represents an overdue—and now inevitable—upgrade. There is consensus among our cohorts that digital assets will replace fiat currencies in the next five to 10 years. More than three-quarters of overall respondents and FSI respondents (76%) believe the changeover will occur. This number jumps to 94% for FSI Pioneers.

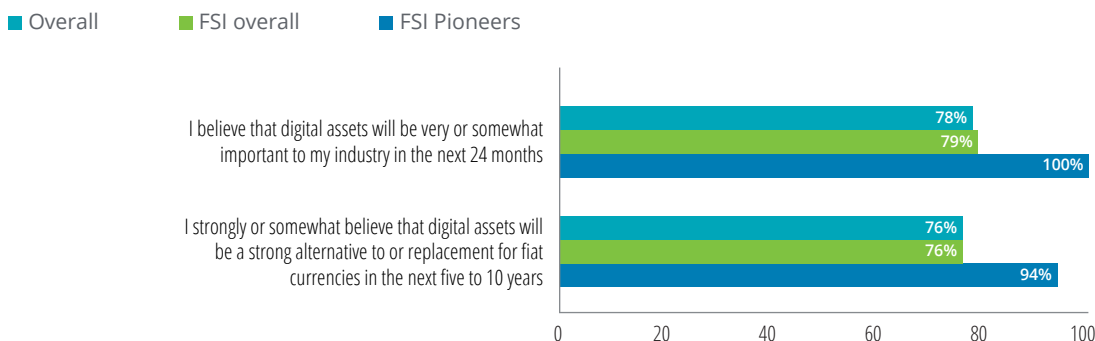
With the growing interest of major institutions and individuals alike, funds continue to flow into the digital assets market. The fundamental impact on

deposits creates an important opportunity for banks and all industries that hold assets. Thus, it is hardly surprising that nearly half (47%) of FSI survey respondents said that *custody* represented a “very important” role for digital assets in their respective organizations, ranking as the top role. Among FSI Pioneers, that figure jumped to 63%. *Safe custody*, too, ranks as the top concern around holding or transacting in central bank digital currencies, at 57% of FSI respondents and a stunning 77% among FSI Pioneers.

FIGURE 2

The future of digital assets

FSI Pioneers are in near unanimity about the transformative role that digital assets will play in the near future



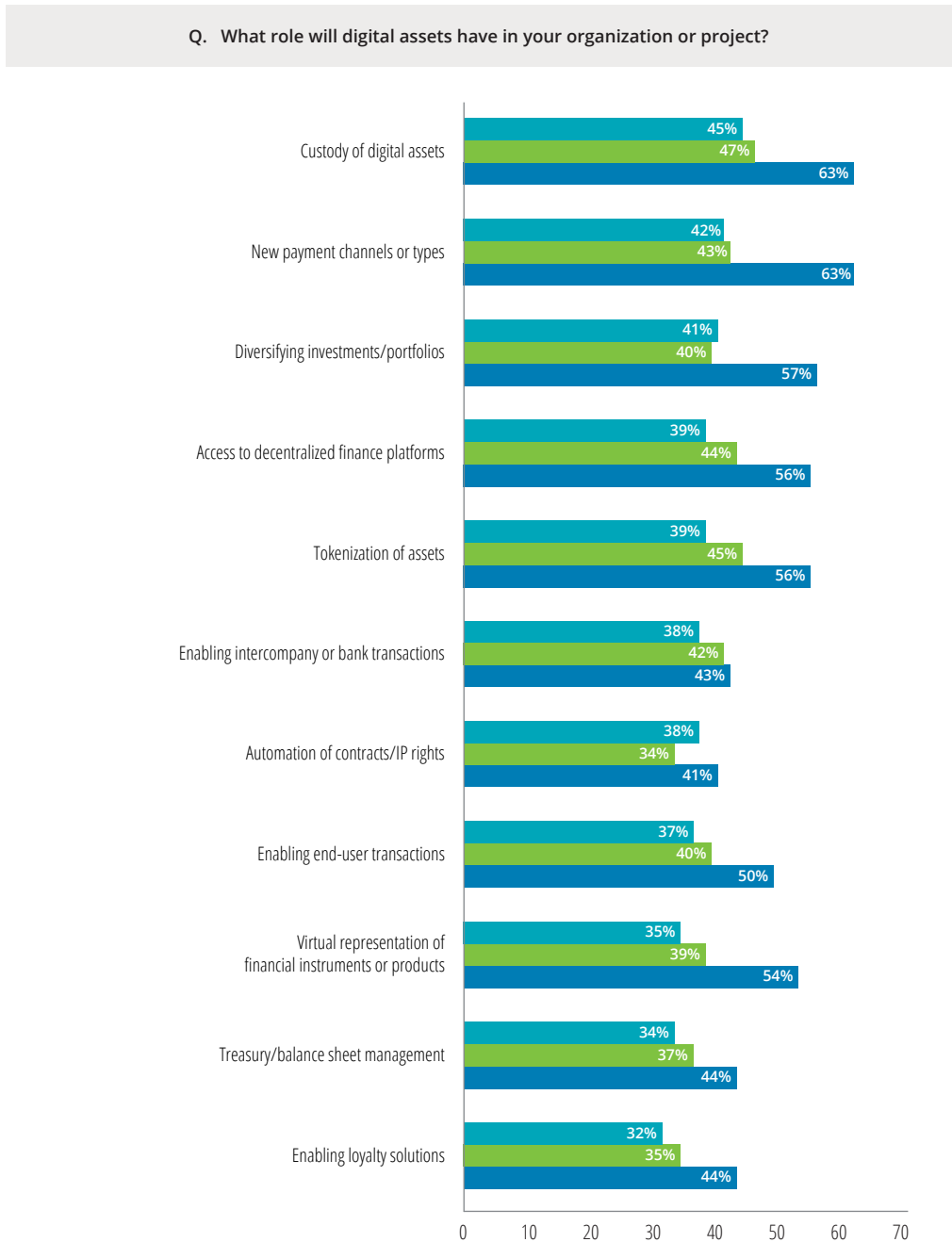
Note: N=1,280 (2021 overall); N=320 (FSI overall); N=70 (FSI Pioneers).
Source: Deloitte's 2021 Global Blockchain Survey.

FIGURE 3

The role of digital assets in future

Custody and new payment channels stand apart among potential digital asset use cases

■ Overall ■ FSI overall ■ FSI Pioneers



Notes: Percentage of respondents who say that digital assets will play a "very important" role. N=1,280 (2021 overall); N=320 (FSI overall); N=70 (FSI Pioneers).

Source: Deloitte's 2021 Global Blockchain Survey.

Crypto custody models can take a variety of forms, since crypto assets are new, vary widely in design and implementation, and, like any new thing, present new risks.² To ensure strong operational protections and customers' unique operational preferences, the custody of digital assets—unlike other assets, such as publicly traded securities—require a new kind of technical infrastructure as well as new processes and procedures.

The rise of digital assets is inspiring FSI companies to step up and take a more active role in their own future. Such action could help discourage corporations from adopting a self-banking model—a major existential threat to the banking model as we know it. For example, banks can help create a future in which they play a key role by working with corporations to develop elevated models. In the near term, banks are contending with more immediate threats from crypto exchanges, custodians, and issuers of crypto-based investment instruments by developing their own capabilities to participate and compete more directly in these areas.³

Our survey also supports the imperative of digital assets in the context of payments. Specifically, 43% of FSI respondents say that new payment options represent a “very important” role for digital assets in their organizations. Among FSI Pioneers, that figure jumps to 63%—virtually tied for first within that group. Indeed, we are witnessing a change in the nature of payments from a separate process that is disconnected from commerce to a more integrated and simultaneous structure.

Today, this all happens through the banking system and a highly fragmented set of activities with multiple players in multiple countries doing spot foreign exchange trades and charging a fee to facilitate the movement of money. In 2020, we believe there was about US\$ 2 trillion in global payments revenue associated with cross-border

money movement—transferring currency without adding value or taking risk. These revenues will likely shrink, with corporations increasingly able to conduct these transactions instantaneously for free or at a nominal cost.

With digital assets, such transactions can be accomplished outside the traditional international banking system. Companies can subcustody or self-custody digital assets and move them on their own, directly between legal entities and across borders to meet their own capital and liquidity needs.

Nevertheless, banks aren't standing still—they remain some of the largest patent filers around digital assets and blockchain technologies. They are exploring ways to harness the power of the technology, including how to create new services to address revenue losses from traditional payment services. This requires banks to rethink their business and revenue models around payments. However, this entails more than a process change, as it portends changes to the business model, the revenue model, and fundamental value proposition around cross-border payments and global money movement.

FSI leaders recognize that blockchain technology and digital assets capabilities threaten a key long-standing banking revenue source. They're not only looking to nail down the way that these new technologies are implemented but also exploring ways to be value-add players in the new global financial infrastructure for the future of money.

The industry is not necessarily heading for a singular future state. Instead, we envision several potential scenarios that could be influenced by the actions of various actors, including banks, payments companies, corporations, and regulatory bodies. Our survey has confirmed that unanswered questions around regulation, in particular, play a role in how financial institutions will engage.

Approximately six in 10 overall survey respondents—and seven in 10 FSI Pioneers—identified regulatory barriers among the biggest obstacles to acceptance of digital assets.

Since the introduction of bitcoin⁴ in 2008, and the launch of the bitcoin network in January 2009, regulatory authorities in the United States and elsewhere in the world have developed a patchwork of guidance to keep pace with crypto and blockchain innovation. In the United States, for example, it remains unclear as to whether regulators will continue this piecemeal guidance effort, or whether the Securities and Exchange Commission, banking regulators, and the Commodity Futures Trading Commission will join forces and coordinate, or whether Congress will act to establish an end-to-end regulatory framework. In the near term, we expect US regulators to issue additional guidance focused on concerns, such as cybersecurity, AML, securities registration, antifraud, tax, and transaction reporting risks that are associated with cryptocurrencies.

However, there is shared optimism about future revenue opportunities from blockchain, digital assets, and cryptocurrency solutions. FSI Pioneers offer the greatest sanguinity, with 93% strongly or somewhat agreeing versus 80% each for FSI overall and all survey respondents. But does this optimism portend a positive future for financial services?

Opportunities for real change in several areas of the fundamental building blocks of the global financial markets exist for those players that can navigate the current regulatory dynamics and uncertainty—and that can position themselves strategically in the market.

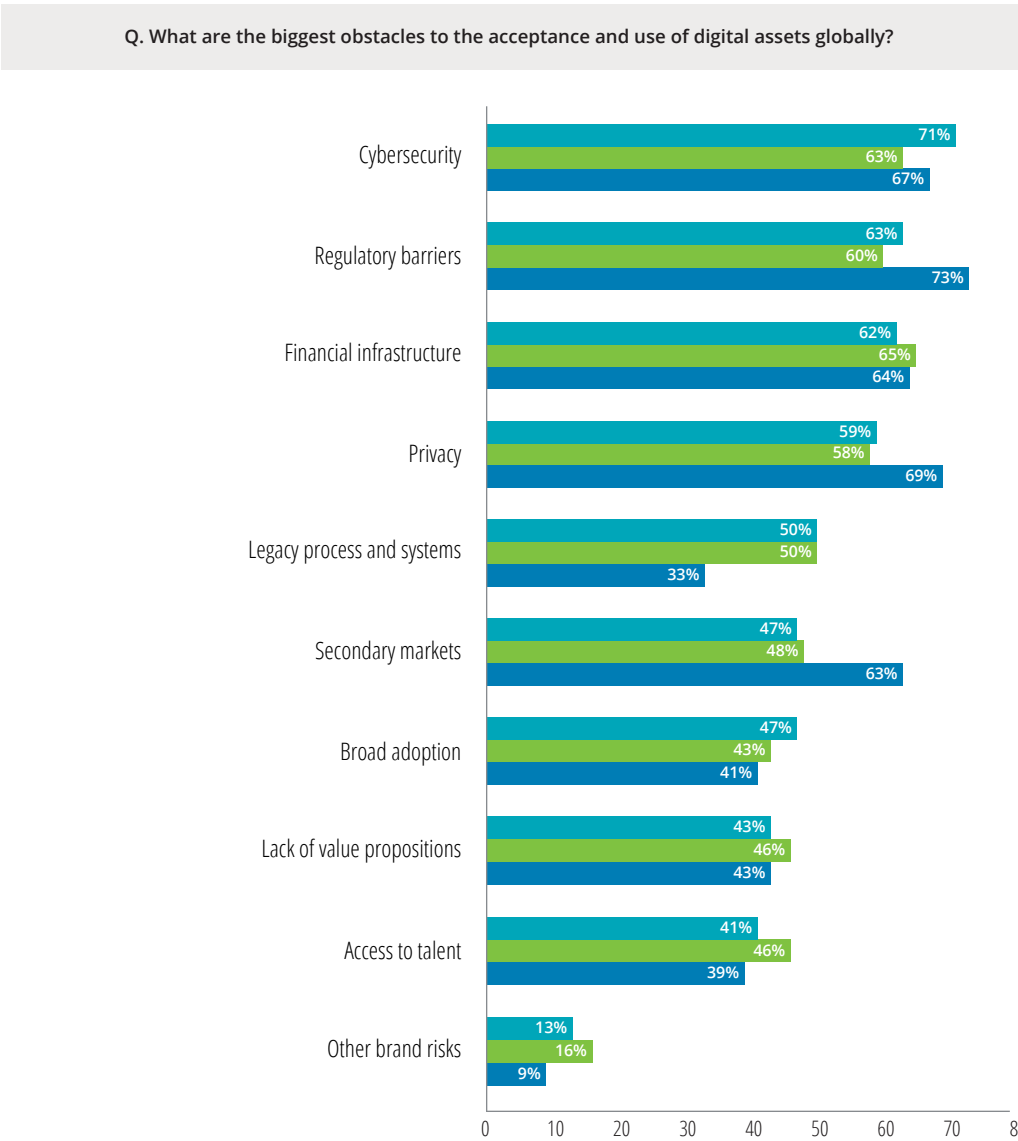


FIGURE 4

The leading barriers to digital assets acceptance

Cybersecurity and regulations stand at the forefront as the biggest obstacles to the acceptance of digital assets

Overall FSI overall FSI Pioneers



Notes: Percentages equal more than 100% because respondents were allowed to submit more than one answer. N=1,280 (2021 overall); N=320 (FSI overall); N=70 (FSI Pioneers).

Source: Deloitte's 2021 Global Blockchain Survey.

From digital to the future of finance

JUST AS WITH safekeeping and transacting money, lending and capital formation are in for an upgrade, as new approaches address a growing appetite for more efficient ways to secure funding. In fact, 70% of FSI Pioneers say that access to funding sources will serve as the largest area of digital asset impact to their respective organizations—well above the larger FSI cohort at 43% and nearly twice as high as overall survey respondents at 36%.

From a retail perspective, the digital-asset architecture provides a way to think about decentralized finance. Indeed, our survey shows how significant this really is. When asked about the role that digital assets will play in decentralized finance, 83% of FSI respondents and 90% of FSI Pioneers said they believe it will be very or somewhat important.

Banks face fierce competition in lending at home and abroad. They are exploring asset-based approaches for issuing loans. They will, as always, need to contend with the supervisory focus on core credit and underwriting risks as well as safety and soundness concerns regarding asset-based lending. It is worth noting that the established norms of

accounting and tax implications of lending may not be applicable to loans of digital assets.

Improvements are also necessary in the mechanisms for issuing a company's ownership and debt. Just as companies are raising money by token issuances through smart contract-based governance models, they can also do the same thing through shares in their business. These are not merely a digital asset that is backed by interest in participating in a market that serves liquidity providers and liquidity takers. How capital is formed and raised, how corporate actions are executed, and how value is exchanged in these companies will become far more dynamic.

We expect these shifts to be highly disruptive to financial services, as new sources of asset value increase the velocity of economic activity, transparency, and trust in that economic activity. When we consider what this means overall, how these instruments are traded, and how dynamic this market might become, we see a very different model emerging for economic liquidity. What this portends for the wider marketplace is still coming into focus.

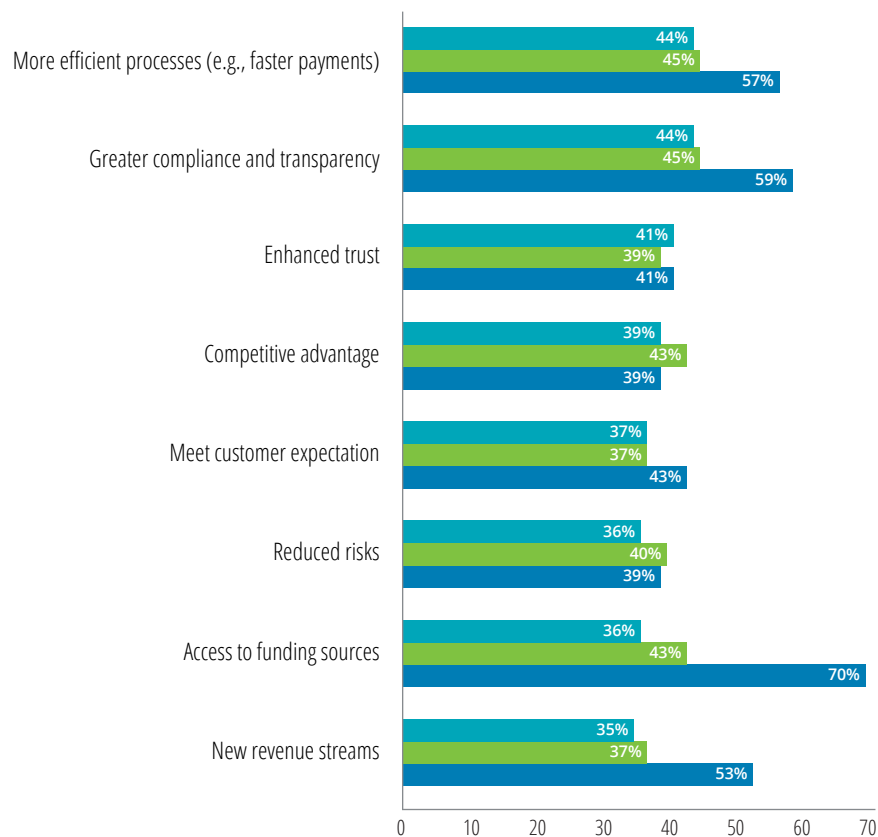
FIGURE 5

Where will digital assets have the greatest impact?

Although lagging overall, seven in 10 FSI Pioneers say that access to funding sources will be the greatest area of digital asset impact

■ Overall ■ FSI overall ■ FSI Pioneers

Q. How will digital assets impact the following aspects of your organization or project?



Notes: Percentage of respondents who say that digital assets will have a “significantly positive” impact. N=1,280 (2021 overall); N=320 (FSI overall); N=70 (FSI Pioneers). Source: Deloitte’s 2021 Global Blockchain Survey.

Conclusion

THE SHIFT TO digital assets is fundamentally changing banking—and changing banking fundamentals. On the positive side, 76% of our survey respondents—and 85% of FSI Pioneers—believe that digital assets will help significantly or moderately reduce risks for organizations or projects. But our survey suggests that this optimism is also tempered by caution.

Nearly 70% of overall survey respondents identified *data security* regulation in the greatest need of modification (vs. 63% of FSI Pioneers), and 71% of overall survey respondents identified *cybersecurity* among the biggest obstacles to acceptance of digital assets. This number was only slightly less for FSI Pioneers (67%), suggesting that even the most dedicated believers in digital assets have legitimate security concerns.

With digital asset disruption rapidly fragmenting the marketplace, global financial services are striving to reinvent themselves, creating businesses to replace disappearing sources of revenue. The industry has been slow to face the issue because regulatory requirements for the many dimensions of digital assets are not yet mandating a response. It is thus unsurprising that banking executives have expressed concerns about digital assets in general and spoken up about why regulatory protections are still necessary.

Even so, banks are evolving to stay current with the times, spurred by the democratization of requirements for simplification of things such as smart contracts, which streamline the execution to

create operational efficiencies. Corporate entities create financial platforms that enable digital assets, raising concerns for both banks and regulators. Regardless, our survey respondents expect to see significant positive impact on their organizations or projects from a variety of digital asset types:

- Stablecoins or central bank digital currencies: Overall survey 42%; FSI overall 43%; FSI Pioneers 53%
- Algorithm-driven stablecoins: Overall survey 38%; FSI overall 40%; FSI Pioneers 59%
- Enterprise-controlled coins: Overall survey 33%; FSI overall 33%; FSI Pioneers 43%

This thinking creates new levels of anxiety about how the industry can adapt traditional processes, products, and services to effectively meet their customers' future needs.⁵ Banks are currently on the vanguard but in a constant state of flux as capital markets realign around digital assets. The seismic shifts we are witnessing will affect any organization that uses a bank in the near and long term. The future is happening right now.

Of course, FSI, like other industries, is still coming to grips with the potential implications of digital currencies. As noted above, the vast majority of leaders in our survey (an impressive 97% of FSI Pioneers) see blockchain and digital assets as another way to gain competitive advantage. The unprecedented speed at which infrastructure develops and the constant need for flexibility are spurring many industries to adapt to find their way in this new era of digital assets.

This is especially true in banking, where the evidence of change is manifest and the level of change substantial, even as the ultimate impact of that change is still unfolding. The vision of the future depends on the players, and on their reactions. What happens? What's the response? What the industry does now will shape financial services, the nature of money, and the nature of financial economic activity for the next decade. And there are some defining harbingers of the future of digital assets in financial services: Money is fast; the movement of money is cheap; the ability

of ownership is easy; the ability to offer a stake in a company to raise capital is instant; and the overall velocity of economic activity will be exponential. Banks—and effectively all other industries—have no choice but to embrace change.

Participation in the age of digital assets is not an option—it is inevitable. Leaders are left only to decide how and when their organizations should start—and how to use digital assets and the new global financial service infrastructure to their greatest advantage.

Appendix

IN THE FIGURE below, we highlight several key metrics from our survey, showing how FSI respondents compare to overall survey respondents. What follows are survey results focusing on a number of key metrics:

FIGURE A1

The 2021 Global Blockchain Survey was fielded in 10 locations (total number of respondents=1,280)



Source: Deloitte's 2021 Global Blockchain Survey.

FIGURE A2

Select survey data

Metric	Overall survey (N=1,280)	FSI respondents (N=320)	Relative to overall survey	FSI Pioneers (N=70)	Relative to overall survey
Percentage of respondents who "strongly believe" that digital assets will be a strong alternative to or replacement for fiat currencies in the next five to 10 years	33%	33%	—	67%	+34 pts.
Percentage of respondents who say that digital assets (all forms) will be "very important" to their respective industry in the coming 24 months	38%	34%	-4%	73%	+35 pts.
Percentage of respondents who "strongly agree" that blockchain technology is broadly scalable, and has achieved mainstream adoption	39%	44%	+5%	56%	+17%
Percentage of respondents who "strongly agree" that their respective organization will lose an opportunity for competitive advantage if they fail to adopt blockchain and digital assets	34%	35%	+1%	57%	+23 pts.
Percentage of respondents who "strongly agree" that their respective executive team believes there is a compelling business case for the use of blockchain, digital assets, and/or cryptocurrencies within their organization or project	36%	35%	-1%	43%	+7 pts.
Percentage of respondents who "strongly agree" that their respective industry will see new revenue streams from blockchain, digital assets, and/or cryptocurrency solutions	35%	31%	-4%	50%	+15 pts.
Top three obstacles to the acceptance and use of digital assets globally (% respondents)	<ul style="list-style-type: none"> ·Cybersecurity (71%) ·Regulatory barriers (63%) ·Financial infrastructure (62%) 	<ul style="list-style-type: none"> ·Financial infrastructure (65%) ·Cybersecurity (63%) ·Regulatory barriers (60%) 	NA	<ul style="list-style-type: none"> ·Regulatory barriers (73%) ·Privacy (69%) ·Cybersecurity (67%) 	NA
Top three areas of regulation in greatest need of modification to facilitate adoption of blockchain and digital assets (% respondents)	<ul style="list-style-type: none"> ·Data security and privacy (68%) ·Industry-specific regulations —e.g., FDA, HIPPA (57%) ·Internal controls and financial reporting (49%) 	<ul style="list-style-type: none"> ·Data security and privacy (67%) ·Industry-specific regulations —e.g., FDA, HIPPA (56%) ·Internal/external audit (49%) 	NA	<ul style="list-style-type: none"> ·Data security and privacy (63%) ·Industry-specific regulations —e.g., FDA, HIPPA (63%) ·Geography-specific regulations —e.g., EU Data Protection Directive (53%) 	NA
Top three blockchain use cases (% respondents)	<ul style="list-style-type: none"> ·Secure information exchange (45%) ·Digital currency (44%) ·Digital identification (40%) 	<ul style="list-style-type: none"> ·Digital currency (47%) ·Secure information exchange (42%) ·Digital identification (41%) 	NA	<ul style="list-style-type: none"> ·Digital currency (57%) ·Secure information exchange (53%) ·Regulatory compliance (47%) 	NA
Top three digital asset roles for organizations (% respondents saying "very important" role)	<ul style="list-style-type: none"> ·Custody of digital assets (45%) ·New payment channels or types (42%) ·Diversifying investments/portfolios (41%) 	<ul style="list-style-type: none"> ·Custody of digital assets (47%) ·Tokenization of assets (45%) ·Access to decentralized finance platforms (44%) 	NA	<ul style="list-style-type: none"> ·Custody of digital assets (63%) ·New payment channels or types (63%) ·Diversifying investments/portfolios (57%) 	NA
Top three digital asset areas of impact for organizations (% respondents saying "significantly positive" impact)	<ul style="list-style-type: none"> ·More efficient processes (44%) ·Greater compliance and transparency (44%) ·Enhanced trust (41%) 	<ul style="list-style-type: none"> ·Greater compliance and transparency (45%) ·More efficient processes (45%) ·Access to funding sources (43%) 	NA	<ul style="list-style-type: none"> ·Access to funding sources (70%) ·Greater compliance and transparency (59%) ·More efficient processes (57%) 	NA
Digital asset application cited as offering most value to organization (% respondents)	Verifying customer billing instructions —e.g., fraud detection (52%)	Signing contracts/agreements or verifying signatures (54%)	—	Enabling financial inclusion or other services —e.g., access to the unbanked (60%)	—
Plan to invest >\$10 million in blockchain/digital assets in next 12 months (% respondents)	33%	34%	+1%	46%	+13 pts.
Percentage of respondents in C-suite—e.g., CEO, CIO, CTO	20%	20%	—	30%	+10 pts.
Percentage of respondents in upper management—e.g., VP, business line head	44%	39%	-5%	30%	-14 pts.
Percentage of respondents from the United States	33%	31%	-2%	16%	-17 pts.

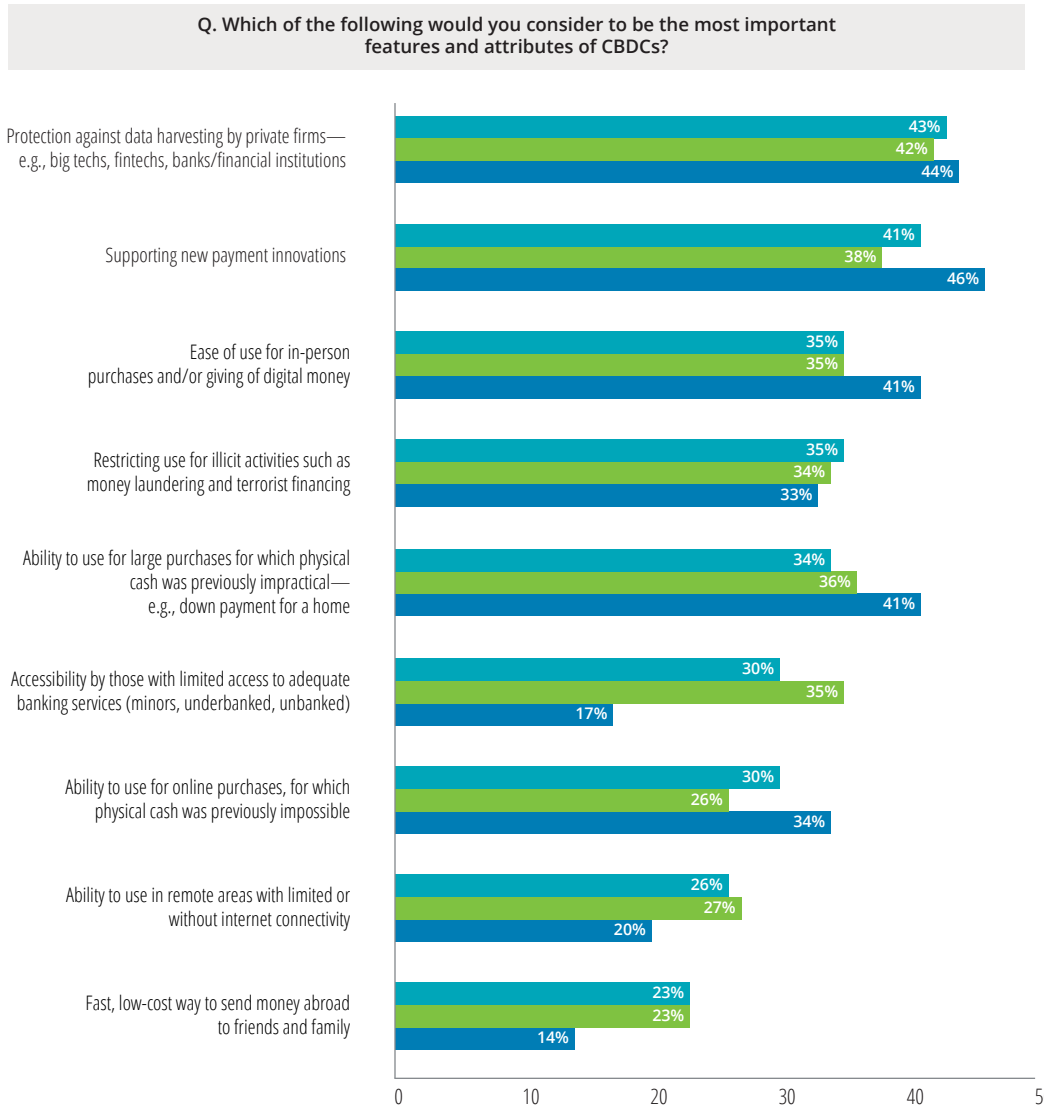
Source: Deloitte's 2021 Global Blockchain Survey.

FIGURE A3

Leading features of central bank digital currencies (CBDCs)

Data protection, innovation, and ease of use serve as leading features of CBDCs

■ Overall ■ FSI overall ■ FSI Pioneers



Notes: Percentages equal more than 100% because respondents were allowed to submit more than one answer. N=1,280 (2021 overall); N=320 (FSI overall); N=70 (FSI Pioneers).

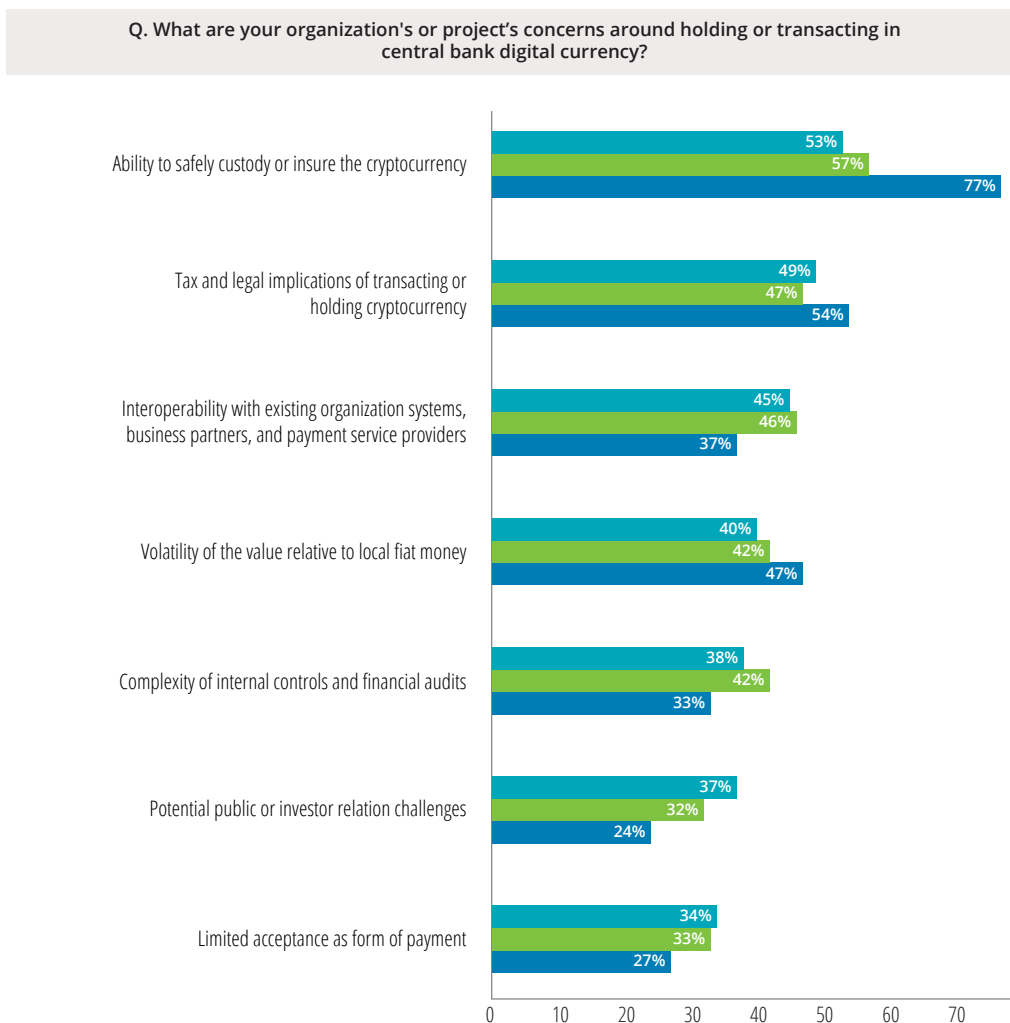
Source: Deloitte's 2021 Global Blockchain Survey.

FIGURE A4

Greatest concerns in holding or transacting in CBDCs

Custody stands as by far the greatest concern around CBDCs; such is especially the case for FSI Pioneers

■ Overall ■ FSI overall ■ FSI Pioneers



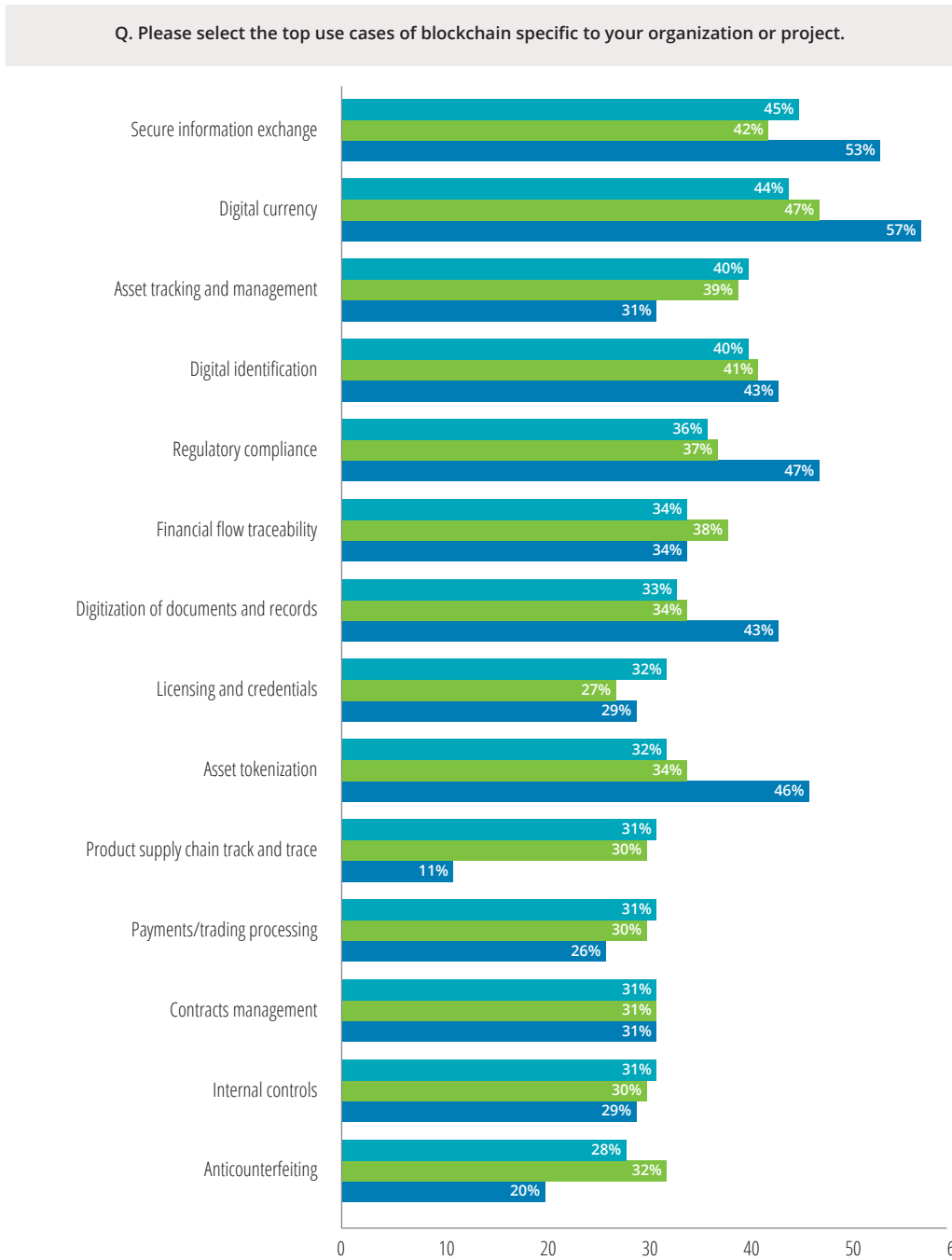
Notes: Percentages equal more than 100% because respondents were allowed to submit more than one answer. N=1,280 (2021 overall); N=320 (FSI overall); N=70 (FSI Pioneers).
 Source: Deloitte's 2021 Global Blockchain Survey.

FIGURE A5

Blockchain use cases

Security information represents the most-cited blockchain use case, in keeping with an overarching theme throughout the survey; digital currency also ranks high

■ Overall ■ FSI overall ■ FSI Pioneers



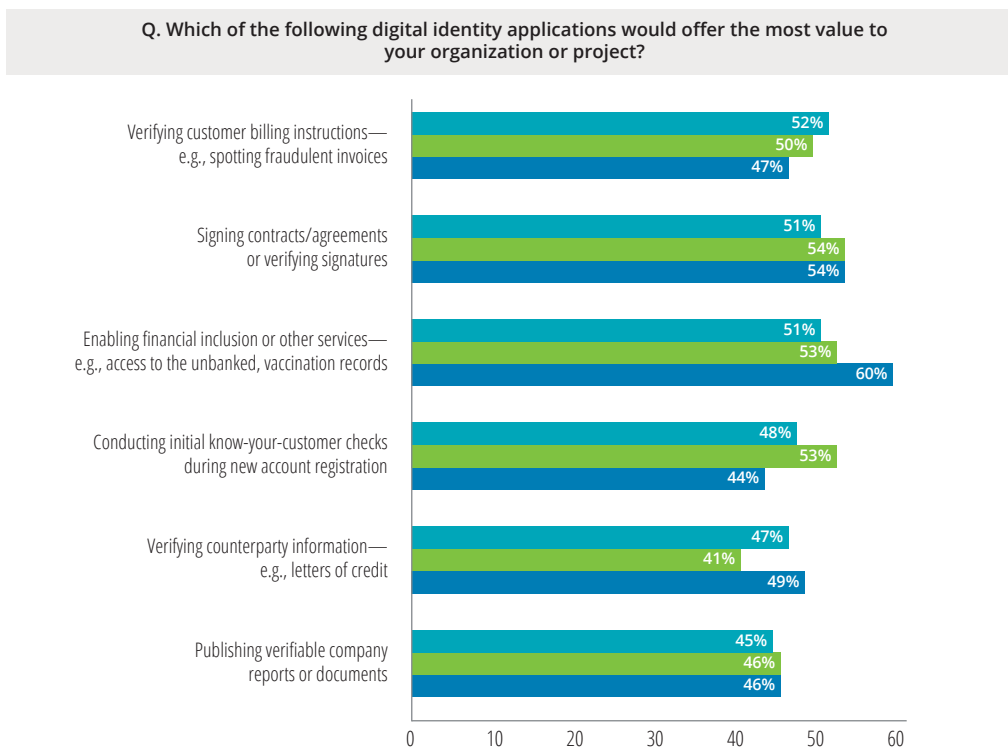
Notes: Percentages equal more than 100% because respondents were allowed to submit more than one answer. N=1,280 (2021 overall); N=320 (FSI overall); N=70 (FSI Pioneers).
 Source: Deloitte's 2021 Global Blockchain Survey.

FIGURE A6

Most-valued digital identity opportunities

While many respondents value digital identity for its verification potential, FSI Pioneers especially see it as a way to foster financial inclusion

■ Overall ■ FSI overall ■ FSI Pioneers



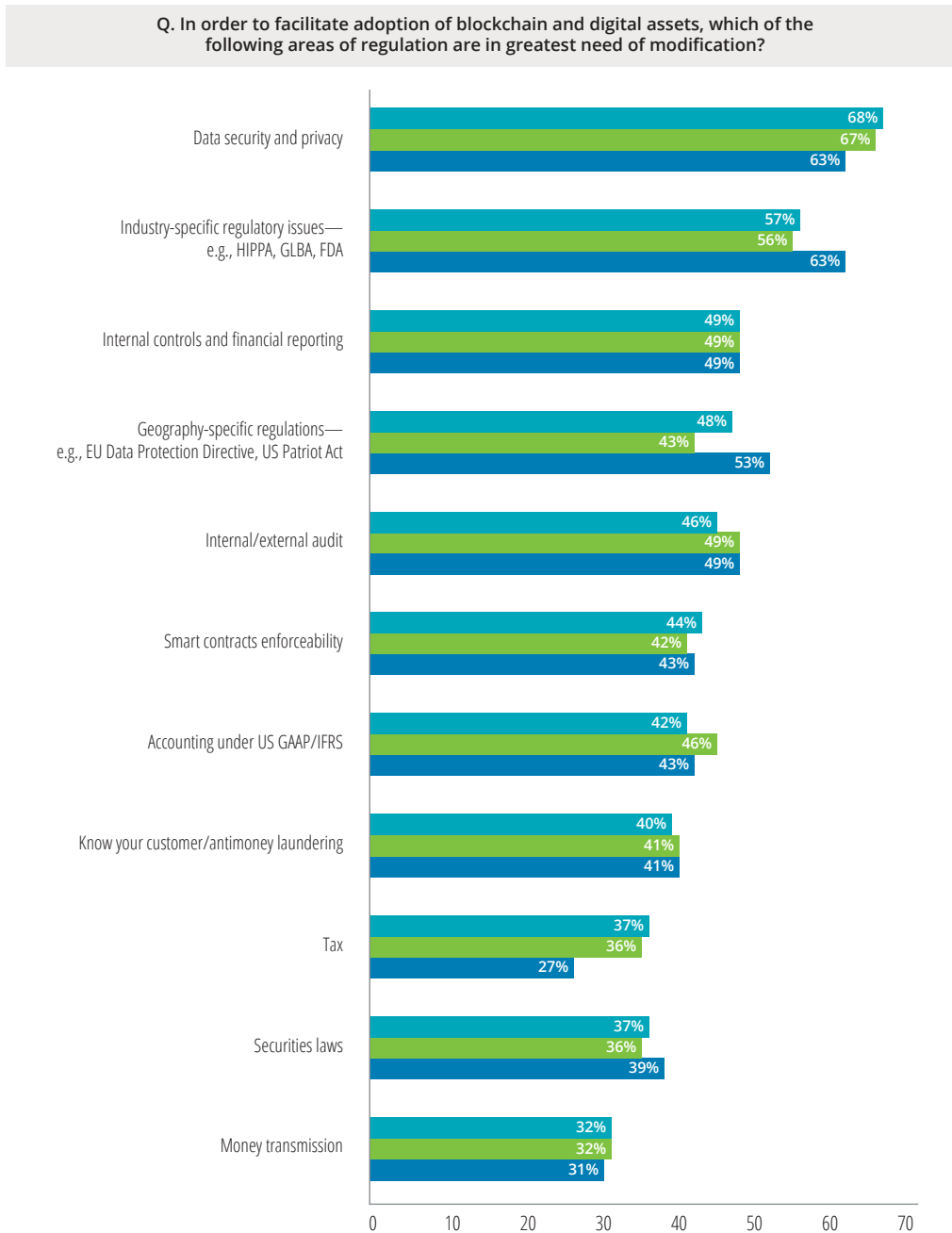
Notes: Percentages equal more than 100% because respondents were allowed to submit more than one answer. N=1,280 (2021 overall); N=320 (FSI overall); N=70 (FSI Pioneers).
Source: Deloitte's 2021 Global Blockchain Survey.

FIGURE A7

Areas of regulation in greatest need of change

It is perhaps unsurprising that respondents identify data security and privacy as the regulatory domain most in need of modification

■ Overall ■ FSI overall ■ FSI Pioneers



Notes: Percentages equal more than 100% because respondents were allowed to submit more than one answer. N=1,280 (2021 overall); N=320 (FSI overall); N=70 (FSI Pioneers).

Source: Deloitte's 2021 Global Blockchain Survey.

Endnotes

1. Deloitte, *Deloitte's 2020 Global Blockchain Survey*, June 16, 2020.
2. Richard Walker et al., "The unique and complex considerations of digital asset custody," *Journal of Securities Operations and Custody* 13, 2 (2021): pp. 150-62.
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