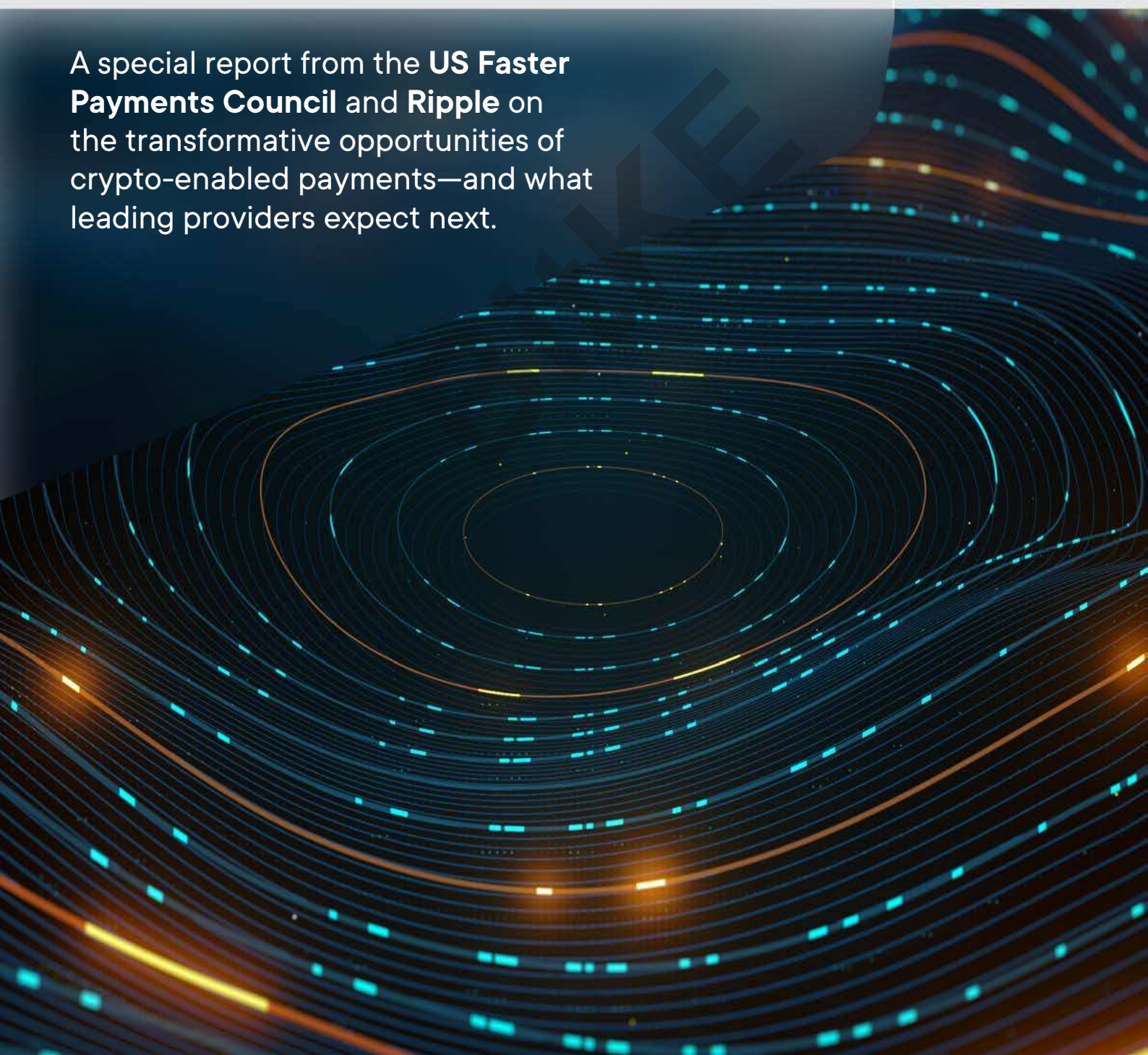


BLOCKCHAIN AND CRYPTO IN PAYMENTS

# Transforming the Way Money Moves

A special report from the **US Faster Payments Council** and **Ripple** on the transformative opportunities of crypto-enabled payments—and what leading providers expect next.



## Foreword from the US Faster Payments Council

The payments ecosystem is evolving quickly and in many different directions. The pace and breadth of change makes it a challenge to keep up with everything. Digital currencies are not new, and there are fascinating use cases that have already achieved scale. However, how digital currencies are perceived and how they might be part of the future state of payments remains a topic of much interest. Understanding the wide range of use cases and potential advantages of any new payments technology is important for all ecosystem participants, and we hope that this paper can help in that regard.

While this paper focuses on digital currencies, it's important to approach it with the understanding that various clearing and settling mechanisms within the ecosystem can operate in parallel or as part of a broader, holistic solution to complex market needs. An approach that leverages the best attributes of various payments technologies can expedite innovation and advance the ultimate end-user utility of the overall payments system.

Cryptocurrencies and, more generally, the mindset of innovation that led to their creation and growth in the marketplace are exciting for the future of payments. Cryptocurrencies present a potentially compelling blend of flexibility and utility. They appear well-positioned to solve some seemingly intractable issues in payments by filling various gaps in payments flows efficiently and effectively.

This report provides an overview of the use of cryptocurrencies in payments today, insights from participants in the faster payments ecosystem, and what the future holds for blockchain and crypto in payments.

Reed Luhtanen  
Executive Director  
US Faster Payments Council

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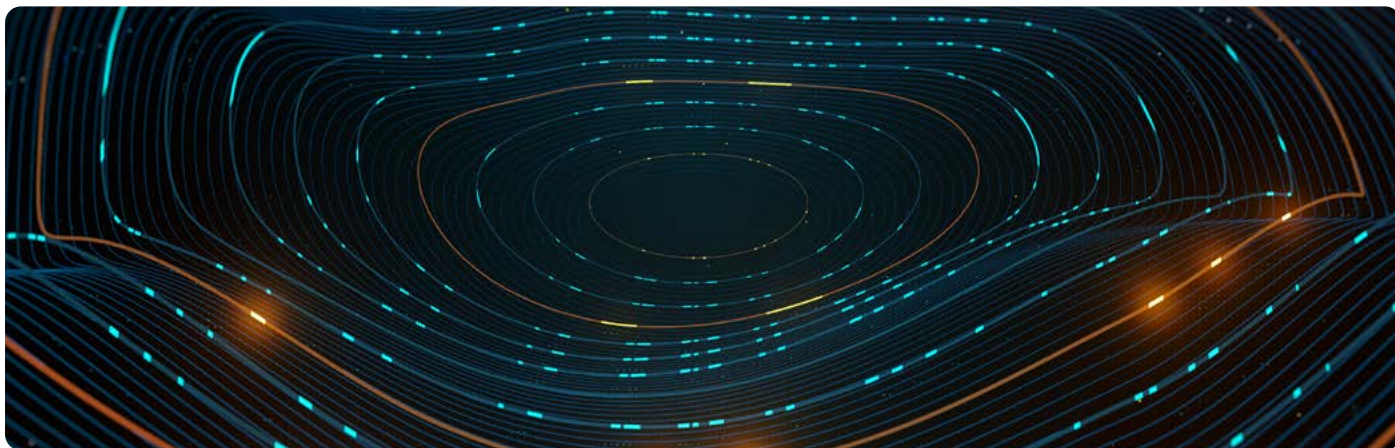
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## Introduction



Global payments volumes are on the rise, as is both interest in and use of crypto across industries and use cases. Ripple and the Faster Payments Council (FPC) collaborated on an inaugural global payments survey to explore these trends among the growing payments market and crypto expansion. In order to better understand payment provider sentiment and their adoption of blockchain and crypto for payments, this survey surfaces perspectives on perceived benefits, future adoption plans, and any potential barriers to growth.

Nearly 300 payments leaders participated in the survey, ranging from Analysts and Directors, to VPs and C-level Executives. Respondents represent a cross-section of global sectors including retail, fintech, banking, media and entertainment, and consumer technology from 45 countries.

### Among the survey highlights:

- An overwhelming majority of providers see crypto-enabled solutions as key to bringing speed to sluggish payments markets.
- Lower cost of domestic and international payments is crypto's primary benefit.
- Few enterprises currently support blockchain-based payments, but it is only a matter of time before more widespread adoption takes place.
- The pace of broader acceptance hinges on one critical factor: improved regulatory clarity.
- Crypto's environmental footprint is top of mind; how much it impacts usage remains to be seen.

Read on for additional observations and insights on progress toward crypto-enabled payment flows.

02 SECTION

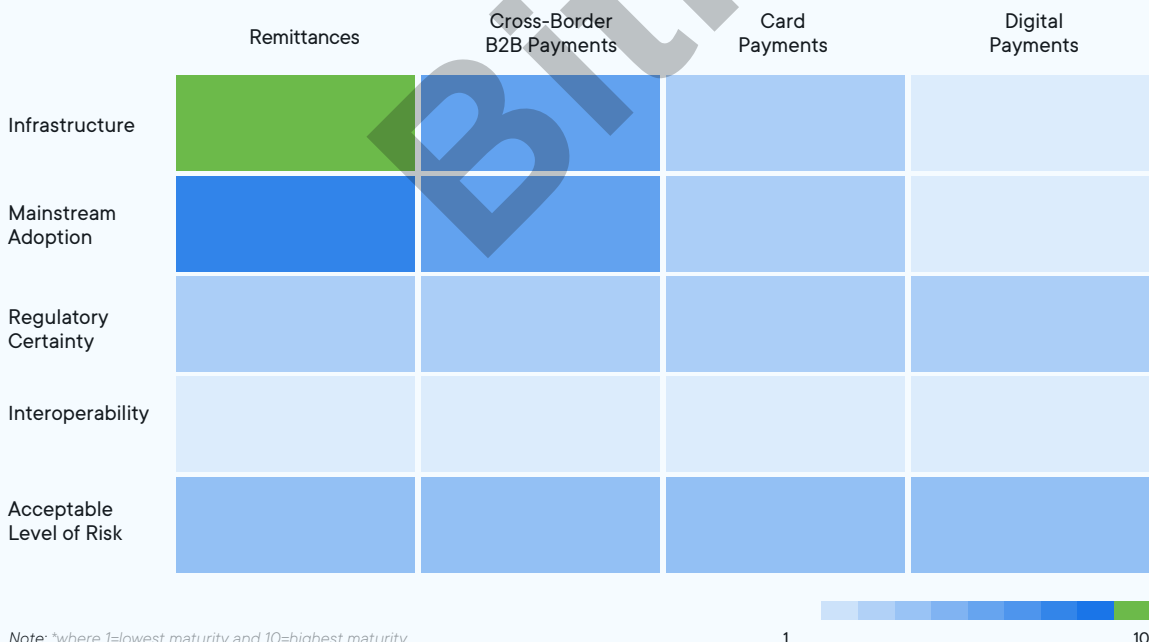
# Brief Overview of Crypto Use in Payments Today

Despite trillions of dollars still moving around the world via an antiquated and costly payments system<sup>1</sup>, the promise of blockchain and burgeoning crypto use cases present one avenue for transformative payment opportunities. As adoption grows, both providers and customers appear poised to benefit from reduced process complexity, lower costs, and enhanced transparency.

New research indicates that although global crypto payment transaction volume is small relative to total payment volume, its long-term growth prospects are bright. In the US, crypto payment adoption is on the rise, with a forecasted 5.5 million crypto payment users in 2023 (a 350% increase in just three years). As the figure below shows, of the four primary use cases contributing to crypto payments growth in the US, remittances are expected to remain the most mature use case, followed by B2B cross-border payments.<sup>2</sup>

## US Cryptocurrency Payment Use Case Maturity, 2023

(Scale of 1-10)



1. <https://www.cbinsights.com/research/blockchain-disrupting-banking/>  
 2. <https://www.insiderintelligence.com/content/us-crypto-payments>

Other Ripple research supports these growth trends, showing swelling payment volumes across [small-medium enterprises \(SMEs\), treasury flows, and remittances](#). This further emphasizes the need for change—and global policymakers are taking note. According to the World Economic Forum, G20 leaders now prioritize blockchain technology to address problems posed by outdated financial infrastructure, including boosting stablecoin and digital asset use to create interoperable, efficient, affordable, and accessible financial systems.<sup>3</sup>

Encouragingly, leading payment infrastructure providers also embrace the need for innovation. Last year PayPal announced the ability for users in the US to accept payments in bitcoin and other mainstream cryptocurrencies.<sup>4</sup> And Stripe incorporated cryptocurrency-based rails (via USDC stablecoin) into its business payments solution.<sup>5</sup> The company points to “open-access global financial rails” as crucial for burgeoning online economies. Other payment processors including Worldpay and Checkout.com now support stablecoin payment settlement.

Broader stablecoin adoption for payments can likely be attributed to cost savings: cross-border payments using a stablecoin is up to 80% less expensive for the end-user<sup>6</sup> compared to traditional remittance operators. That means that for a \$500 remittance, the cost of on-chain FX conversion combined with the on/off-ramp can be transacted for as little as \$4.80—much smaller than the average cost of a remittance which hovers around \$20 USD.

Elsewhere, the payments industry is trialing crypto in more novel use cases. Today, across insurance claims, rewards, rebates, and other disbursements payment types, US companies generate more than 1.9 billion payments to consumers annually—and one-third are made by paper check.<sup>7</sup> In an effort to help modernize and streamline this process, blockchain-based providers have targeted the corporate disbursements use case to pay employees, affiliates, and customers in a more timely, cost-effective way. This includes everything from insurance claims, rewards and rebates; to wages, loan disbursements and medical reimbursements.

Market providers recognize a range of use cases and benefits of [crypto-enabled solutions](#). With growing interest from digitally-native consumers, expect pronounced shifts in the payments landscape.

3. <https://www.weforum.org/agenda/2021/04/how-blockchain-technology-is-fixing-payments-today-what-comes-next/>

4. <https://www.pymnts.com/cryptocurrency/2022/pmps-are-making-stablecoin-payments-a-reality/>

5. <https://stripe.com/blog/expanding-global-payouts-with-crypto>

6. <https://www.circle.com/blog/on-chain-foreign-exchange-and-cross-border-payments>

7. <https://www.cuinsight.com/five-things-to-know-about-digital-disbursements/>

## 03 — SECTION

## Blockchain and Crypto will Enhance Payments Speed and Boost Customer Value

Nearly every surveyed leader (97%) believes blockchain technology and cryptocurrency will have a *significant* or *very significant* role in enabling faster payments within the next three years.

For respondents, blockchain and crypto technology holds particular promise with respect to transforming cross-border payments. Juniper Research supports this notion, pointing to blockchain's potential to significantly increase savings for financial institutions conducting cross-border transactions—an estimated \$10 billion by 2030 thanks to fast, reliable and transparent payments settlement.<sup>8</sup> Observers shouldn't underestimate the transformative opportunity here: Global cross-border payment flows are expected to reach \$156 trillion—driven by a 5% compound annual growth rate (CAGR).<sup>9</sup>

Respondents see additional crypto-enabled payments use cases, with over 50% of surveyed leaders believing that *most merchants will accept crypto payments within one to three years*. Middle East and African leaders appear particularly bullish: 27% believe that they'll cross this threshold within the next year. Optimism in these markets may stem from a growing appetite for [broader financial access and inclusion](#), including other crypto-enabled payment solutions like mobile payments and Central Bank Digital Currencies (CBDCs).

# 97%

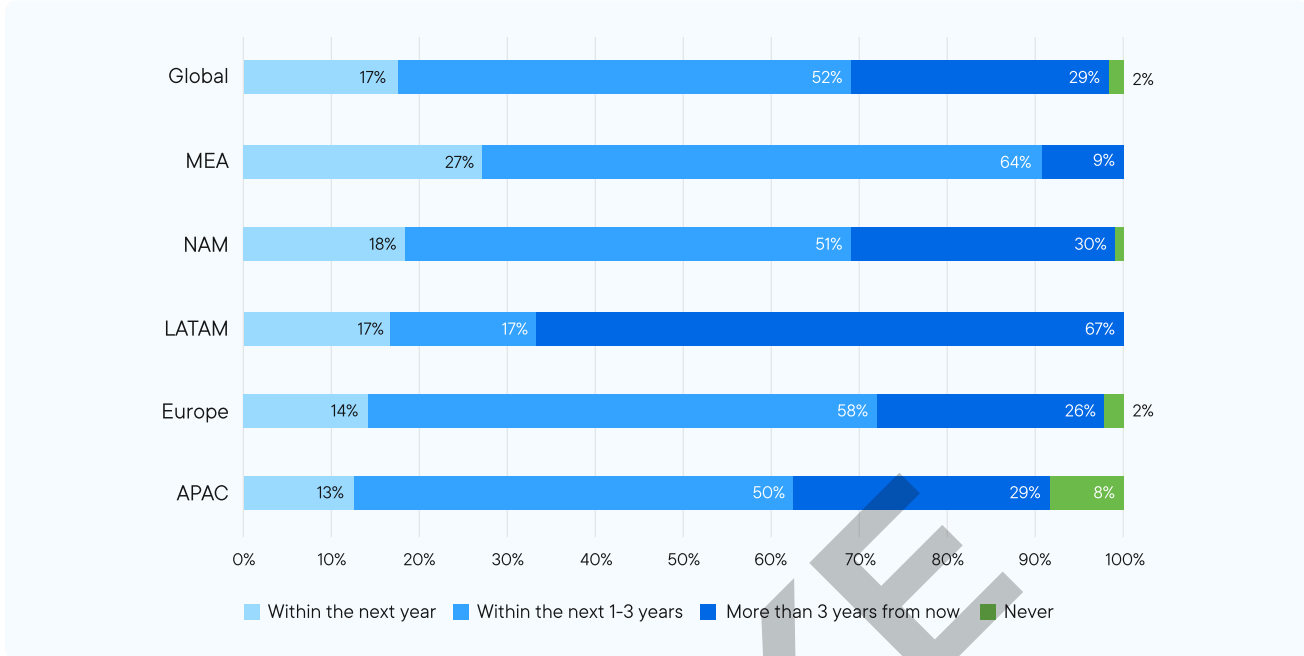
of respondents believe blockchain technology and cryptocurrency will have a *significant* or *very significant* role in enabling faster payments within the next three years.

Over **50%** of surveyed leaders believe that *most merchants will accept crypto payments within one to three years*.

8. <https://www.juniperresearch.com/press/blockchain-facilitate-savings-of-10-bn>

9. [https://www.ey.com/en\\_us/banking-capital-markets/how-new-entrants-are-redefining-cross-border-payments](https://www.ey.com/en_us/banking-capital-markets/how-new-entrants-are-redefining-cross-border-payments)

When do you think most merchants (greater than 50%) will accept payment in cryptocurrencies in your region?



While surveyed leaders don't universally agree here, growing crypto acceptance aligns with Ripple's previous research and sweeping convergence of factors conducive to adoption—from crypto firms sponsoring [football clubs](#) to [state-sponsored CBDC projects](#) as an alternative to SWIFT.

Other applications of crypto and blockchain technology are being explored for various buying, selling and lending use cases. For example, the California DMV is moving auto titles to the blockchain to streamline title transfers, automate manual processes, and provide much needed transparency and traceability to the vehicle lending process.<sup>10</sup>

While still nascent, the real estate industry is also adopting blockchain and crypto technology, with a growing number of homes being sold as NFTs (Non-Fungible Tokens)<sup>11</sup>. This opens up a world where a real estate transaction doesn't involve manual underwriting, appraisals, title searches and preparing deeds, and the home buying, selling and rental process can be much more efficient and cost-effective.

“Credit unions and community banks should view money movement using blockchain as an incremental evolution—not a disruption—that has the potential to lower costs and increase speed of settlement [...] with the added benefit of being available 24/7/365.”

Lou Grilli, Sr. Innovation Strategist, PSCU

10. <https://www.yahoo.com/now/california-dmv-puts-car-titles-140000450.html>

11. <https://ripple.com/insights/featured/utility-based-nfts-solving-real-world-problems-in-real-estate/>



04 SECTION

# Crypto's Most Attractive Feature: Cost Reduction

The pandemic era infused new urgency around shifts to digital payments. Various physical limitations and financial insecurities sped up interest in crypto-enabled and more cost-effective payment offerings.

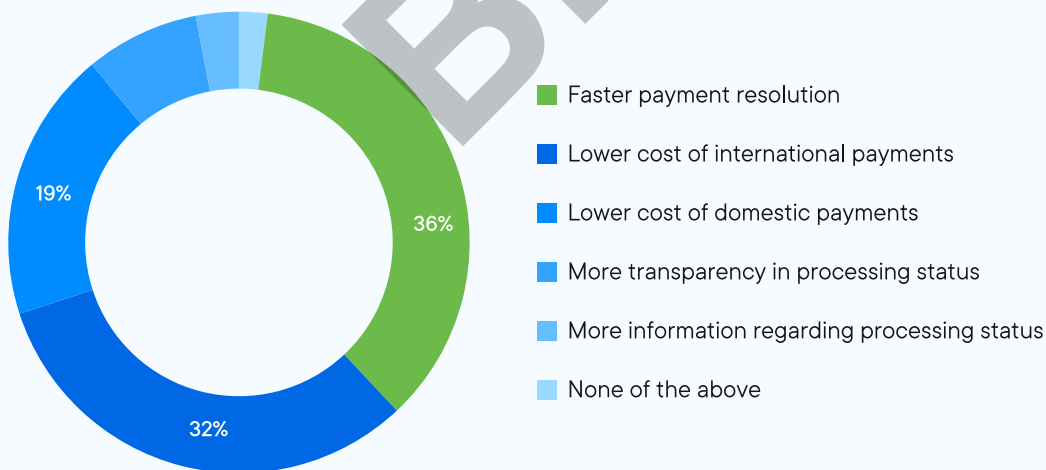
In the survey, over 50% of respondents believe that *lower payments cost*—both domestically and internationally—is crypto's primary benefit. Nearly 90% of surveyed leaders acknowledge some “cost-improvements related to international payments” and 75% expect domestic cost benefits.

In particular, domestic payment providers see crypto as an answer to transaction and processing fees—which are often up to 4%, per the US Chamber of Commerce.<sup>12</sup> Interestingly, while these providers cite lower costs of cross-border payments as crypto's primary value proposition, only about half currently provide cross-border payment services today. One possible reason could be that the exorbitant costs and inefficiencies of traditional cross-border payments are inhibiting these businesses from expanding into new markets.

*What is the largest benefit of blockchain tech / crypto for payments?*

*Faster payment resolution and lower cost*

Over **50%** of respondents believe that *lower payments cost*—both domestically and internationally—is crypto's primary benefit.



12. <https://www.uschamber.com/co/run/finance/accepting-cryptocurrency-as-payment>

13. <https://bowerycap.com/blog/insights/the-future-of-cross-border-payments-with-brendan-berry-ripple>

Other research conducted by Ripple (*New Value Research, August 2021*) further supports sentiment around the lower cost benefit. When asked what cryptocurrency can offer their organization, roughly 30% of financial institutions and 40% of enterprise respondents cited lower costs for both businesses and consumers.

While lower transaction costs will boost corporate margins, those who push savings to end users may outperform with respect to customer acquisition and retention. Today, the global average cost of a remittance remains a painfully high 6%—double the Sustainable Development Goal targeted by the United Nations.<sup>14</sup>



Global average cost of sending \$200

The World Bank | June, 2022

“By leveraging a digitized asset you can move funds in real-time [...] bypassing the pain and costs associated with correspondent banking, in favor of real time settlement.”<sup>13</sup>

*Brendan Berry, Director of Product Management, Ripple*

BitXFE

14. [https://remittanceprices.worldbank.org/sites/default/files/rpw\\_main\\_report\\_and\\_annex\\_q222.pdf](https://remittanceprices.worldbank.org/sites/default/files/rpw_main_report_and_annex_q222.pdf)

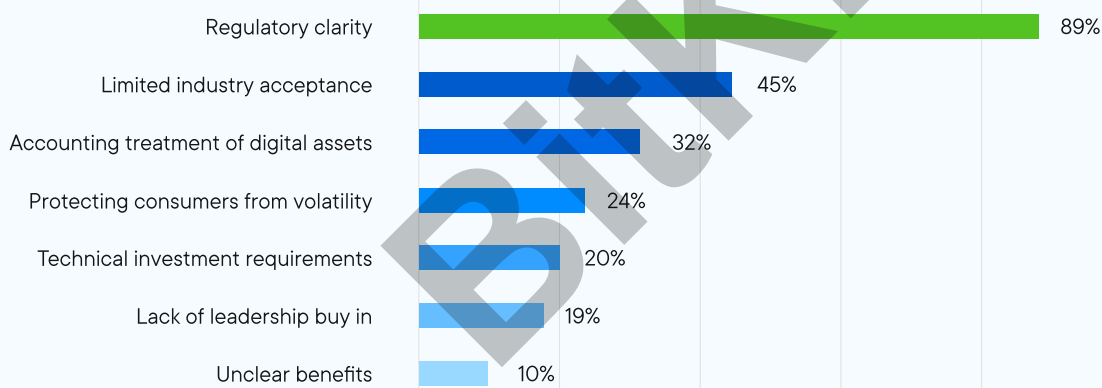
## 05 SECTION

# Enterprises Gear Up to Support Crypto Payments

Leaders foresee the [new world of payments](#) that crypto opens up—one rid of pre-funding, high transaction fees, slow settlement times, and opaque capital flows. While these benefits are clear and the majority of respondents are considering crypto use (52%), only 17% currently support crypto-enabled payments.

Why? For payment providers, *regulatory clarity remains a primary hurdle* to go-to-market efforts. When given the option for multiple responses, almost one-third of participants cited *regulatory clarity* exclusively—indicating no other perceived barriers to using blockchain for payments.

*Which of the following do you view as barriers to your organization using blockchain technology for payments?*



Moreover, for respondents who cited additional adoption barriers, nearly 90% point to *regulatory ambiguity* as the main deterrent.

Even the second most cited concern, limited industry acceptance, may be a corollary of regulatory unease. A Deloitte study of senior retail executives finds that merchants widely agree that accepting digital currencies offers a competitive advantage (87%), but more than 50% agreed that regulations must be enacted, “including national guidance around holding digital assets, clarity about the tax implications of using digital currencies, and the ability to hold digital currencies in a bank account.”<sup>15</sup>

15. <https://www2.deloitte.com/content/dam/Deloitte/us/Documents/technology/us-cons-merchant-getting-ready-for-crypto.pdf>

While regulatory clarity appears to be the adoption linchpin, the industry is trending in a positive direction. In the US, [President Biden released a first-of-its-kind framework for crypto regulation](#). Highlights include how financial institutions can and should adapt and evolve for better cross-border transactions, as well as the benefits of digital currencies like CBDCs and stablecoins to enable a more efficient, sustainable payments system.

In addition to regulation, respondents also cite mild concern around technical investment. To overcome existing fiat approaches, 20% of surveyed providers noted a need for “simplified infrastructure capability.”

Given enterprises’ practice of converting accepted digital currencies into fiat, change-over costs to support crypto payments are naturally concerning. According to research conducted by Ripple and Oliver Wyman, as more [financial institutions and organizations look to incorporate crypto](#), this reticence may wane as technology service providers introduce more user-friendly, plug-and-play solutions—some even boasting compliance-adapted functionalities specific to states or nations.

“ We now have leaders in Congress on both sides of the aisle championing legislative solutions. The dialogue around crypto is much more sophisticated than it was two years ago.”

*Susan Friedman, Director of Policy, Ripple*

BitKey

## 06 — SECTION

## Crypto’s Environmental Footprint Gives Providers Pause

Sentiment around blockchain and sustainability is strong among payments leaders. Nearly every respondent (98%) acknowledged the environmental impact associated with blockchain use. Of these, 71% share that low energy consumption is *very important*, while 19% note that it is *somewhat important*. Encouragingly, the majority of respondents (78%) also cite being *very familiar* with the difference in environmental impact between [proof-of-work and proof-of-stake protocols](#)—the latter requiring less computational power and energy usage.

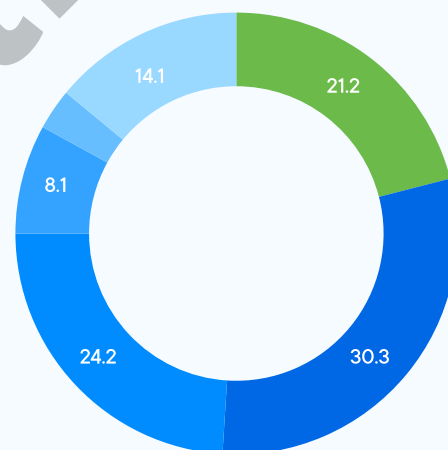
Over 50% of surveyed financial institutions in Ripple’s 2022 New Value Report viewed sustainability as “important in the context of blockchain usage.” And when asked about attitudes toward cryptocurrency and sustainability, over 75% of consumers said they would prefer to buy a cryptocurrency that is sustainable. Both then and now, concerns surround crypto overreliance on raw computing power and electricity.

*Which of the following best describes your attitude toward cryptocurrency and sustainability (defined here as low energy usage)?*

### Customer Attitude to Crypto and Sustainability

by percentage

- Would only buy sustainable cryptocurrencies
- Would strongly prefer to buy sustainable cryptocurrencies
- Would prefer to buy sustainable cryptocurrencies
- Sustainability is not something I consider when buying cryptocurrency
- Would prefer to buy cryptocurrencies that are
- I don’t care



Importantly, the IMF recently probed the energy profiles of payment types, noting that some crypto assets “can be more energy efficient than much of the current payment landscape.”<sup>16</sup> Increasingly, both policymakers and the public express concerns about the environmental impacts of money, including traditional fiat currency. One university study estimates the total annual environmental cost of the 50 billion US banknotes in circulation to be \$12.9 billion.<sup>17</sup>

16. <https://www.imf.org/en/Blogs/Articles/2022/06/16/how-crypto-and-cbdc-can-use-less-energy-than-existing-payment-systems>

17. <https://sites.tufts.edu/digitalplanet/how-green-is-the-greenback-an-analysis-of-the-environmental-costs-of-cash-in-the-united-states/>

More recently, the Economic Times noted the potential savings associated with the digital rupee—a digital currency alternative for the Reserve Bank of India: “For every Rs 100 note, the cost works out to be about Rs 15-17 rupee (15-17% on each tender).”<sup>18</sup> This includes environmental and operational costs ranging from printing, distributing, and disposing of soiled notes.

Meaningful crypto use among payment leaders may ultimately rely on digital assets with [more sustainable underlying technology](#). For example, decentralized assets which rely on transaction verification methods that consume negligible energy.

Given the bullish sentiment of surveyed leaders, however, environmental hesitations aren’t expected to derail crypto payment ambitions. But keeping pulse on the intensity of this concern may provide clues as to when crypto payments will go mainstream. In the meantime, questions remain:

- Will the optics of excessive energy usage inhibit crypto payment innovation?
- Can providers recognize sustainability nuances between blockchains (and articulate these successfully to stakeholders)?
- Is familiarity with the environmental impact of certain blockchains enough, or will additional steps need to be taken to further educate providers on the importance of sustainable payment methods?

“

While we drive toward innovation, we cannot lose focus on other societal imperatives—notably, the need to reduce energy consumption and be stewards of the environment. Survey respondents see the potential utility of cryptocurrencies, and are appropriately interested in ensuring responsible use of the technology that is not detrimental to the planet.”

*Reed Luhtanen, Executive Director,  
US Faster Payments Council*

18. <https://economictimes.indiatimes.com/news/economy/finance/digital-rupee-to-save-costs-of-printing-distributing-and-storing-cash/articleshow/89413532.cms?from=mdr>

## Bringing Blockchain to Payments

Payment providers intrinsically see value in blockchain technology. When asked about the benefits associated with blockchain and crypto in payments, *no respondents cited being unclear* on what those are. In particular, an overwhelming majority of participants noted shifting perspectives with respect to crypto-enabled payment solutions.

The views make sense. Universally, payments providers are tasked with ensuring speed, security, transparency, and flexibility within payments strategies. To the extent that emerging solutions enable this, providers will respond.

The goal of this report is to give industry participants a better understanding of the state of crypto usage, current sentiment around acceptance and adoption of crypto-enabled payments, and to highlight the potential transaction-related improvements crypto introduces. The report also flags concerns—an important component of understanding what solutions providers must overcome to fulfill crypto's promise.

Few argue against the need for transformation in today's antiquated, often exclusionary payments markets. Crypto may offer the answer. If so, we expect forward-thinking payments leaders to lead the way.

Ripple and The Faster Payments Council are working to help shape the future of payments, and look forward to learning, growing, and building with you. For more, please visit [ripple.com](https://ripple.com) and [fasterpaymentscouncil.org](https://fasterpaymentscouncil.org).

# 100%

of respondents agree there are benefits of blockchain and crypto in payments

## Methodology

Ripple and the Faster Payments Council collaborated on a survey sent to over 950 FPC subscribers, representing over 70 primary business lines across 45 countries. Role types range from analyst to CEO. The number of respondents was  $n = 281$ . Participants were asked to complete 25 questions on topics of blockchain payments use cases, sustainability, usage barriers and benefits, and digital asset ownership. Fieldwork for the survey was conducted during the first half of 2022.

## About Ripple

Using proven crypto and blockchain technology honed over a decade, Ripple's enterprise-grade solutions are faster, more transparent, and more cost-effective than traditional financial services. Ripple's customers use these solutions to source crypto, facilitate instant payments, empower their treasury, engage new audiences, lower capital requirements, and drive new revenue streams.

Founded in 2012, Ripple's vision is to enable a world where value moves as seamlessly as information flows today—an Internet of Value. Ripple is the only enterprise blockchain company today with products in commercial use. Ripple's global payments network includes over 300 customers across 40+ countries and six continents.

## About The Faster Payments Council

The Faster Payments Council (FPC) is an industry-led membership organization whose vision is a world-class payment system where Americans can safely and securely pay anyone, anywhere, at any time and with near-immediate funds availability. By design, the FPC encourages a diverse range of perspectives and is open to all stakeholders in the US payment system. Guided by principles of fairness, inclusiveness, flexibility and transparency, the FPC uses collaborative, problem-solving approaches to resolve the issues that are inhibiting broad faster payments adoption in this country.