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International Trade Administration
U.S. Department of Commerce
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Washington, DC 20230
Docket ITA-2022-0003

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To whom it may concern:

Ripple Labs Inc. (Ripple) welcomes the opportunity to comment on the U.S. Department of Commerce's (Commerce's) request for comment on its notice, "Developing a Framework on Competitiveness of Digital Asset Technologies" (the RFC). The RFC was issued in response to President Biden's [Executive Order](#), "Ensuring Responsible Development of Digital Assets," which tasks Commerce with responsibility for establishing a framework that enhances "United States economic competitiveness in, and leveraging of, digital asset technologies."

Ripple strongly believes that the United States can and should be a leader in the digital asset space. However, "regulation by enforcement" - the preferred approach of U.S. regulators - has served only to wreak havoc in the digital assets currency marketplace, hurting consumers and industry alike. Clear regulatory frameworks must be established if the United States hopes to retain its position as a global leader, as well as the deep pool of talent that could well be encouraged to build and scale their businesses in foreign jurisdictions that have acted more decisively in this space.

Introduction

Using blockchain technology, Ripple allows financial institutions to process payments instantly, reliably, cost-effectively, and with end-to-end visibility anywhere in the world. Our customers are financial institutions that want tools to effect faster and less costly cross-border payments, as well as eliminate the uncertainty and risk historically involved in moving money across borders using interbank messaging alone. All this is done in compliance with AML/BSA regulations.

Some customers, in addition to deploying Ripple's "blockchain" solution (RippleNet), leverage a digital asset known as XRP. Just as Bitcoin is the native asset to the open-source Bitcoin ledger, and Ethereum is the native asset to the open-source Ethereum ledger, XRP is the native asset to the open-source XRP Ledger. XRP, given its

unique design, can serve as a near instantaneous bridge between fiat currencies (or any two representations of value), further reducing the friction and costs for commercial financial institutions to transact across multiple global markets.

Although Ripple utilizes XRP and the XRP Ledger in its product offerings, XRP is independent of Ripple. The XRP Ledger is decentralized, open-source, and operates on what is known as a “consensus” protocol. While there are well over a hundred known use cases for XRP and the XRP Ledger, Ripple leverages XRP for use in its product suite because of XRP’s suitability for cross-border payments. Key characteristics of XRP include speed, scalability, energy efficiency, and cost efficiency, all of which benefits the consumer and helps reduce friction in the market for cross-border payments.

With this overview, Ripple respectfully submits the following responses to questions 2-7, 10, 13-15, and 17 set forth in the RFC in the attached Appendix.

Sincerely,

Ripple Labs Inc.

Appendix

Competitiveness

(2) What obstacles do U.S. digital asset businesses face when competing globally? How have these obstacles changed over the past five years and are any anticipated to disappear? Are there clearly foreseeable new obstacles that they will face in the future? What steps could the U.S. government take to remove, minimize, or forestall any obstacles?

The single biggest obstacle facing U.S. digital asset businesses when competing globally is the current lack of regulatory clarity. Today, to determine if different tokens in the cryptocurrency space are “investment contracts” (i.e., securities), the Securities and Exchange Commission (SEC) purports to be applying the Supreme Court’s 1946 *Howey*¹ case. But rather than simply applying *Howey*,² the SEC issued “non-binding” guidance in April 2019. That guidance has been criticized by many, including SEC Commissioner Peirce who compared it to a Jackson Pollock work insofar as it “splash[es] lots of factors on the canvas without any clear message.”³ And even within that guidance, the SEC takes the position that not all elements of the Supreme Court’s *Howey* test are needed.⁴

The current lack of regulatory certainty, in combination with the SEC’s favored approach of offering policy guidance through enforcement actions⁵ has resulted in an environment where market participants - many of whom are making good faith efforts to comply with existing laws, rules and regulations - simply do not feel comfortable innovating in the United States. This stands in direct contrast to multiple other jurisdictions that have established holistic frameworks governing digital assets, including Singapore’s Payment Services Act (PSA)⁶ and the European Union’s recently concluded Markets in Crypto Assets (MiCA) regulation.⁷ Not only do these frameworks

¹ *SEC v. W. J. Howey Co.*, 328 U.S. 293 (1946).

² SEC Strategic Hub for Innovation and Financial Technology, [Framework for “Investment Contract” Analysis of Digital Assets](#) (April 3, 2019).

³ SEC Commissioner Hester M. Peirce, [How We Howey](#) (May 9, 2019).

⁴ “The Commission, on the other hand, does not ... view a ‘common enterprise’ as a distinct element of the term ‘investment contract.’” See [Framework for “Investment Contract” Analysis of Digital Assets](#) at n. 10.

⁵ In its report accompanying the FY23 Financial Services and General Government appropriations bill, the House Appropriations Committee observed: “The Committee recognizes that digital assets can drive innovation in the financial services sector. New financial products require clear pathways and regulatory structures for stakeholders, developers, and investors. The Committee is concerned that enforcement action in the absence of regulatory clarity invokes confusion in the growing sector. The Committee encourages the SEC to issue public guidance that promotes U.S.-based innovation.” See also SEC Commissioner Hester M. Peirce & Commissioner Elad L. Roisman, [Statement In the Matter of Coinschedule](#) (July 14, 2021) (“[P]roviding clear insight outside of the enforcement context into the Commission’s investment contract determinations and analysis for digital assets would serve everyone well.”).

⁶ [Payments Services Act of 2019](#).

⁷ [Digital finance: agreement reached on European crypto-assets regulation \(MiCA\)](#).

offer market certainty and consumer protections, but in the absence of decisive action by the United States, serve to set the regulatory standard globally.

Importantly, Congress has legislative proposals before it that would allow it to resolve the current regulatory gridlock. Both the Digital Commodity Exchange Act (DCEA, H.R. 7614 in the 117th Congress) and Responsible Financial Innovation Act (RFIA, S.4356 in the 117th Congress) seek to clarify jurisdiction in the digital asset space by giving the Commodity Futures Trading Commission (CFTC) authority over spot digital asset commodity markets. The approach makes sense - CFTC's commodity market regulation is well established and widely accepted, and provides robust customer protection including core principles, segregation of customer assets, and legal certainty within the federal bankruptcy regime. While both bills are in the early stages of the legislative process, they are representative of the type of forward thinking approach needed to ensure the United States remains a leader with respect to digital assets.⁸

(3) How does the current U.S. regulatory landscape affect U.S. digital asset businesses' global competitiveness? Are there future regulatory shifts that could support greater global competitiveness of U.S. digital asset businesses? How does the U.S. regulatory landscape for digital assets compare to that in finance or other comparable sectors?

There is perhaps no greater obstacle to U.S. digital asset businesses' global competitiveness than the current U.S. regulatory landscape. To date, federal agencies have deployed what can only be described as an uncoordinated, piecemeal approach to regulation.⁹ Positions at times conflict, jurisdictional boundaries are unclear, and rules are subject to constant change, often with inadequate input from stakeholders.¹⁰ The resulting ambiguity makes it difficult, if not impossible, for U.S. digital asset companies to operate effectively given the constant threat of enforcement action from multiple federal authorities.

By contrast, several foreign jurisdictions have now established comprehensive frameworks with respect to digital assets, including Singapore (the PSA) and the European Union (MiCA). These laws, among other things, establish taxonomies covering cryptocurrencies and stablecoins, create clear oversight regimes, and seek to protect consumers from the risks associated with digital assets. Relatedly, the UK recently

⁸ Importantly, both bills recognize a role that the SEC can legitimately serve in an oversight capacity alongside the CFTC. See, e.g., [Summary of the Digital Commodity Exchange Act of 2022](#) ("The DCEA does not disturb the SEC's jurisdiction over securities offerings that involve digital assets. Nor does it impact the SEC's jurisdiction over digital assets that represent some form of ownership or investment in a business."); RFIA, S. 4356, Title III.

⁹ An October 2020 report from the Department of Justice named at least seven federal agencies with some sort of regulatory authority over digital assets. Department of Justice, [Cryptocurrency: Enforcement Framework](#) at 22. Additional agencies are named in President Biden's Executive Order.

¹⁰ See [Hagerty, Colleagues Push Back on SEC's Back-Door Attempt to Restrain Crypto Market](#).

announced its intent¹¹ to become the best place globally to start and scale a digital assets company. To achieve its goal of becoming a so-called “crypto hub,” the UK has, among other things, organized a series of “crypto-sprints” involving industry to inform the Financial Conduct Authority’s “policy thinking in real time,” indicated its intent to deliver on a Financial Market Infrastructure Sandbox, and cited the future establishment of a high-level industry group, chaired at the ministerial level, to help guide government in this arena.¹²

While the Executive Order is a welcome first step toward establishing a clear path forward on the regulatory front, the United States must act now or else risk ceding its place as a digital assets leader to other jurisdictions. Like its foreign counterparts, the United States should move decisively in establishing a holistic framework governing digital assets, drawing upon the knowledge of industry and other market participants in doing so. Failure to act means risking the migration of U.S. talent and investment offshore to jurisdictions that have not only declared their openness to the digital assets industry, but demonstrated their willingness to nurture and encourage development of the same.

(4) What are the primary challenges to U.S. technological leadership in the digital assets sector?

The United States is an undisputed technological leader in the digital assets sector given its deep pool of talent, innovation, and financing. This combination of factors provides a natural incentive for companies to establish within the United States which, in turn, helps foster further investment, consumption, job creation, and economic growth.

Yet, as discussed in response to questions 2 and 3, the United States’ lack of regulatory clarity with respect to digital assets - and the preferred approach of some regulators to use enforcement actions as a means of announcing new policy requirements - puts the United States at a distinct disadvantage when compared to other jurisdictions globally. The regulatory ambiguity that characterizes the U.S. landscape currently as compared to other jurisdictions that have established comprehensive digital asset regulatory regimes will naturally push innovators to establish elsewhere, leaving the United States at a distinct competitive disadvantage.

¹¹ [Keynote Speech by John Glen, Economic Secretary to the Treasury, at the Innovate Finance Global Summit](#) (April 4, 2022).

¹² *Id.*

(5) What impact, if any, does the global nature of the digital assets sector have on U.S. digital asset businesses' ability to attract and retain talent and maintain leadership in development and operation of digital asset technologies within the United States?

Ensuring the digital assets sector reaches its full potential requires not only regulatory clarity but that U.S. businesses have ready access to top talent. Domestically, this can be achieved through an increased focus on training and education. Through our University Blockchain Research Initiative,¹³ Ripple is collaborating with leading universities around the world to support and accelerate academic research, technical development and innovation in blockchain, cryptocurrency and digital payments. In addition to financial resources, Ripple provides students and faculty with strategic guidance and technical resources, where appropriate.

Apart from domestic efforts, it is similarly imperative that the U.S. visa process be modernised to ensure that U.S. companies retain access to talent globally.

(6) What, if any, is the future role of digital assets mining in the U.S. digital assets sector? Can digital assets be compatible with a low-carbon economy that emphasizes renewable energy? If so, how? In what ways can the U.S. government and U.S. companies drive competitive, sustainable (for the environment and energy consumption) development of digital assets?

Ripple strongly believes that digital assets can be compatible with a low-carbon economy that emphasizes renewable energy. As cryptocurrency becomes increasingly mainstream – with more financial institutions and individual investors racing to leverage this technology – energy consumption has accelerated to already unsustainable levels. Globally, the damages from climate change are projected to amount to almost 3% of GDP by 2060.¹⁴

Notwithstanding the above, the digital assets industry has the ability to reduce its collective environmental impact. By way of example, in 2020, Ripple partnered with Energy Web (EW) and the Rocky Mountain Institute (RMI) to decarbonize public blockchains – starting with the XRP Ledger, the first major global blockchain to do so. As a company, Ripple also pledged to achieve carbon net zero by 2030 or sooner.

Additionally, Ripple is a supporter of the Crypto Climate Accord¹⁵ (CCA) – an initiative organized by EW, RMI and the Alliance for Innovation Regulation (AIR) focused on decarbonizing cryptocurrencies to ensure the global financial system is less harmful and more sustainable. Key objectives of the CCA, which counts over 200 companies and individuals as supporters,¹⁶ include:

¹³ <https://ripple.com/impact/ubri/>.

¹⁴ OECD, [Economic interactions between climate change and outdoor air pollution](#) at 3 (July 3, 2019).

¹⁵ <https://cryptoclimate.org/>.

¹⁶ <https://cryptoclimate.org/supporters/>.

- Enable all of the world's blockchains to be powered by 100% renewables by the 2025 UNFCCC COP Conference
- Develop an open-source accounting standard for measuring emissions from the cryptocurrency industry
- Achieve net-zero emissions for the entire crypto industry, including all business operations beyond blockchain and retroactive emissions by 2040

Finally, while many currencies (whether digital or physical) are not environmentally friendly, the XRP Ledger processes transactions through a unique "consensus"¹⁷ mechanism that consumes negligible energy and all XRP currency is already in circulation. Specifically, the XRP Ledger utilizes a distributed agreement protocol which establishes super-majority agreement, or consensus, around a given transaction without the need for energy intensive mining characteristic of other digital assets. Further, XRP itself was designed with sustainability in mind; it is an inherently green currency. All XRP is already in existence, meaning no unsustainable mining practices or additional energy is ever required to produce more.

Energy consumption is a critical side effect of blockchain, and as we see greater adoption and usage of this new technology across the global financial system, the topic needs to be addressed to help ensure a sustainable future for our planet and the global economy. It bears noting, however, that there is an emerging consensus among digital asset industry members and climate advocacy organizations that blockchain is an important, potentially transformative technology with respect to helping global carbon markets modernize and scale to accelerate progress toward globally agreed climate goals (e.g., the Paris Agreement). Blockchain's native characteristics make it a natural fit to address persistent pain points in carbon markets, including unclogging supply bottlenecks, reducing time to market for carbon credit producers, and bringing about dramatically higher transparency and data integrity. Blockchain can also help enable fairer price discovery and deliver a more equitable return to those engaged in high quality carbon removal activity (i.e., additive, permanent, verifiable removals). Finally, blockchain can improve the tracking and tracing of carbon removal activity and carbon market transactions, making it easier for buyers to meet their ESG commitments and both shareholder and regulatory reporting requirements. Far from exacerbating global emissions problems, blockchain can help solve them by creating a more powerful market infrastructure to accommodate the needs of both suppliers and buyers of carbon credits.

¹⁷ David Schwartz, [The Environmental Impact: Cryptocurrency Mining vs. Consensus](#) (July 8, 2020).

(7) What impact, if any, will global deployment of central bank digital currencies (CBDC) have on the U.S. digital assets sector? To what extent would the design of a U.S. CBDC (e.g., disintermediated or intermediated, interoperable with other countries' CBDCs and other domestic and international financial services, etc.) impact the sector?

Ripple believes that a CBDC - if designed carefully and in ways that avoid the digital surveillance and privacy concerns generated by similar projects elsewhere¹⁸ - has the potential to offer new opportunities for innovation in domestic and cross-border payments that could, over time, increase the diversity of payment providers and other financial intermediaries, as well as the services they offer. For example, unlike cash, a CBDC could enable micropayments or otherwise be “programmed” for specific uses to support government aims or macroeconomic policy, such as delivering targeted financial stimulus support to individuals and businesses. CBDCs used for this purpose could be time-bound, made region-specific, or linked to specific industries to stimulate consumer demand and support key industries and policy outcomes like the green economy or decarbonisation.

We further believe that should the Federal Reserve ultimately decide to issue a CBDC, utilization of a private-public platform approach is the best way to ensure maximum functionality. The more open and extensible the payments platform, the more utility it will deliver. Broad utility - and interoperability - will define success for CBDCs.

Firms like Ripple are well positioned to innovate to solve the interoperability challenges that development of such a platform could ultimately create. RippleNet is a network of financial institutions using Ripple technology to enable faster, lower-cost payments around the world. The technology and network rules enable enhanced interoperability between these financial institutions, driving the benefits of the global network. Alignment of protocols across CBDCs (including any that are ultimately issued by the Federal Reserve), private stakeholders and cross-border payment networks could enable similar benefits associated with RippleNet for end-to-end global transactions - real-time, 24x7, atomic settlement based on efficient routing, transparently and immutably associated with a universal set of payment information.

¹⁸ See.e.g., [Say No to the Silk Road Act](#), S. 3784 in the 117th Congress (proposing to set new regulations and guidelines on China’s digital yuan).

(10) Beyond enhanced economic competitiveness, how can the U.S. digital assets sector advance the other objectives outlined in the Executive Order? These other objectives include protection of consumers, investors, and business in the United States; protection of United States and global financial stability and the mitigation of systemic risk; and mitigation of illicit finance and national security risks posed by misuse of digital assets.

We believe that establishing a clear regulatory framework for digital assets will concurrently help advance the other objectives included in the Executive Order, including, most notably, the protection of consumers, investors, and businesses in the United States. Several of the current legislative proposals (including the DCEA and RFIA, discussed in response to question 2) seek to establish clear oversight regimes with corresponding disclosure requirements related to digital assets. If passed, these common sense measures will immediately provide greater transparency and certainty to consumers, investors, and businesses alike.

Comparisons to 'Traditional' Financial Services and Financial Inclusion Considerations

(13) Can digital assets improve international payments (including trade and remittances), and improve on access to trade finance? If so, how? How do digital assets compare to other initiatives in payments such as the Federal Reserve's FedNow?

Ripple believes that digital assets can improve international payments, including with respect to remittances. Our vision is the Internet of Value, where value flows over the internet as easily, freely, and cheaply as information does today. All Ripple's efforts are in pursuit of this vision, and we expect that across the payments industry as a whole, the trend toward ubiquitous, virtually free, real-time payments accessible to anyone at any time will gather unstoppable momentum. This will have its biggest impact in opening up cross-border payments to all.

Historically, remittance providers enable payments by pre-funding correspondent accounts. This not only traps enormous amounts of capital, but creates compliance costs and foreign exchange and counterparty risks that often must be hedged. This process also limits the reach of efficient payment solutions to high-volume currency pairs and is a major driver of the high and opaque fees being charged to customers sending smaller amounts to friends and families overseas.¹⁹ Payments between less frequently traded currencies can be even more expensive and cumbersome.

¹⁹ In announcing the final rule that would revise the Electronic Fund Transfer Act ("EFTA") as it relates to remittance transfer providers, the Consumer Financial Protection Bureau stated it "believe[d] that expanded adoption of ... Ripple's suite of products could ... allow banks and credit unions to know the exact final amount that recipients of remittance transfers will receive before they are sent" contrary to the current state of play. See 85 Fed. Reg. 34870, 34880 (final rule); see also 84 Fed. Reg. 67132, 67142 (proposed rule).

Digital assets specifically designed for payments have the potential to reduce these limitations by enabling payments without the need to pre-fund overseas. Ripple's software leverages XRP as a bridge between currencies. This allows financial institutions to access liquidity on demand through cryptoasset exchanges without having to pre-fund accounts in the destination country. The payer and payee continue to use fiat currency for their payment, with XRP incorporated as a bridge between the regulated financial institutions that are facilitating the remittance transaction. This is particularly helpful for smaller institutions with limited capital; using Ripple products, they can achieve broad global payment reach without additional capital needs.

This is also helpful for the facilitation of micropayments (i.e., payments made for very small amounts - sub \$5), the increase of which could well enable new business models. Currently, the transaction costs associated with micropayments made in fiat currency are often too high to support their execution. Enabling the ability to pay for a single news article or television episode - or even to pay per second or per page of content - rather than a full subscription service has the ability to fundamentally transform commerce. The facilitation of micropayments similarly has the power to transform remittances. The World Bank estimates that remittances to low- and middle-income countries will reach a high of \$630 billion in 2022, following an almost record recovery of 8.6 percent in 2021.²⁰ At the same time, the average cost of sending \$200 to lower and middle income countries was estimated to be as high as 6 percent in the fourth quarter of 2021, double the Sustainable Development Goal target of 3 percent by 2030.²¹ These costs reduce in tangible and measurable ways the impact of money being sent to populations for which literally every dollar matters. Digital assets like XRP can help solve these problems based on its speed, scalability, energy efficiency, and cost.

(14) According to the FDIC's 2019 "How America Banks" survey, approximately 94.6 percent (124 million) of U.S. households had at least one bank or credit union account in 2019, while 5.4 percent (7.1 million) of households did not. Can digital assets play a role in increasing these and other underserved Americans' access to safe, affordable, and reliable financial services, and if so, how? What role can the Federal government and the digital assets sector play to ensure that underserved Americans can benefit from the increased commercial availability of digital assets?

Many unbanked and underbanked citizens remain underserved and unable to access the full range of basic financial services, such as savings, loans, mortgages and other forms of credit. They similarly face difficulties establishing credit history, accessing peer-to-peer (P2P) lending, and being able to send cross-border payments in an efficient and cost-effective manner. Ripple believes that digital assets generally, and CBDCs specifically, could assist in each of these three areas.

²⁰ World Bank, [Remittances to Reach \\$630 billion in 2022 with Record Flows into Ukraine](#) (May 11, 2022).

²¹ *Id.*

- **Ability to Establish Credit History:** Allowing un- and underbanked Americans access to a CBDC through their mobile phones²² could not only help establish a credit history, but a broader history with always-on access to resources regardless of physical location. This, in turn, could grant them access to a greater range of financial services than they have today.
- **P2P Lending:** P2P loans (e.g., loaning money to a friend or family member), could be made much faster, more efficient and secure with the use of a digital asset sent and received via a digital wallet. For many in today's current landscape, this simple act can take upwards of a full day (or more) to complete.
- **Cross-Border Payments:** As discussed in response to question 13, cross-border payments have historically been inefficient and expensive. A CBDC or digital-first solution, however, can lower the cost and time involved in making these payments.

Across all of these use cases, however, there is a consistent set of practical hurdles to solve including, but not limited to, education, identity and offline access.

- **Education:** There is a global educational gap when it comes to understanding digital assets. Onboarding citizens into a system who are unclear on how to use it or the benefits thereof will run the risk of low adoption rates and/or financial inclusion. Proactively reaching out to communities to educate, improving the user experience (e.g., to account for disabilities), and implementing a "play-to-earn" model that ensures people know how to use a digital wallet before they start handling digital assets are all options that could make the transition to a digital-first system easier.
- **Identity:** Developed countries like the United States require a national identity to open a bank account, which poses inclusivity problems in and of itself. For citizens who do not have a family name, a passport, a driver's license or any other form of identification, this presents a seemingly insurmountable hurdle. With the use of a CBDC or digital-first solution, those individuals would have the ability to be associated with a digital wallet, allowing them to meet basic "Know Your Customer" (KYC) requirements for identity verification. For example, in places where mobile phone usage is high but access to financial services is low, leveraging registered SIM cards and mobile phones as a way of proving identity for payments without a traditional ID number could help create a threshold to meet these requirements.

²² It has been estimated that of the 1.7 billion unbanked adults globally, two thirds own a mobile phone. World Bank, [Financial Inclusion on the Rise, but Gaps Remain, Global Findex Database Shows](#) (April 19, 2018).

- **Offline Access:** CBDC platform design in particular needs to consider offline access. Having internet access as a prerequisite to success may harm CBDC adoption and usage, both for those without regular access to the internet²³ and for instances where unexpected power outages occur or devices run out of battery. With this in mind, CBDCs that provide alternate solutions – particularly those that do not require constant charging and can run without a direct power source or internet connection for consecutive days or weeks – and can accommodate offline scenarios will be critical to implementation. One example of how to solve for offline access could be a solution that mirrors the Indian e-Rupi, which leverages digital voucher mechanisms such as QR codes that can be printed offline and scanned to make retail purchases. As overall CBDC adoption and usage continues to grow, it will be critical for the United States and other governments to think proactively about how to enable offline access, by design.

We have no doubt that as the technology underlying digital assets and its many applications continue to expand and evolve, so too will our ability to understand and leverage these solutions to create a more inclusive financial system.

Technological Development

(15) To what extent do new standards for digital assets and their underlying technologies need to be maintained or developed, for instance those related to custody, identity, security, privacy, and interoperability? What existing standards are already relevant? How might existing standardization efforts be harmonized to support the responsible development of digital assets?

- **Custody:** Regulated institutions and their technology partners having been practising key management for over 20 years, whereby they or the associated system issue a key and can reissue where required. Standards and practices will need to be extended that remove risk from this process when leveraging keys generated by a public ledger allowing recoverability, ensuring the highest levels of security are maintained whilst preventing a user from being barred access to an asset or account in the event of a key loss / issue.
- **Identity and Privacy:** Identity and privacy are tightly coupled and can greatly impact the user experience. Existing proxy identifiers such as cell numbers or email addresses can be used to create a better identity framework for end users, however clear standards and possible technology developments need to be introduced to ensure this does not compromise privacy when a public ledger is leveraged. Consideration should also be made against existing privacy frameworks / standards and the ‘right to be forgotten.’ This becomes harder in a

²³ In the United States, for example, currently 7% of Americans say they do not use the internet. See CNBC, Dain Evans, [China’s digital yuan could pose challenges to the U.S. Dollar](#) (July 24, 2021).

world where there are public ledgers and data is immutable, but needs to be taken into account with any new standards / changes to existing frameworks.

- **Interoperability:** Standards currently exist for the transfer of data related to a payment transaction (e.g., ISO 20022). These can be utilised (where appropriate) to provide a consistent format for passing data between participants and also where existing systems require data in order to record transactions correctly and ensure any compliance / regulatory frameworks can be adhered to. New protocols / standards may be required to pass this information between parties to remove all information being shared on a public ledger whilst ensuring that the benefits of the settlement model enabled by blockchain technology are still realized.
- **Participation / Security:** Unlike traditional centralised systems where there are clear governance and participation standards / rules, new standards will need to be developed to accommodate a distributed / decentralised approach which incorporates roles and responsibilities for running the network, service level agreements and network updates. Approaches to additional innovation such as programmability will need to be clearly defined so that any introduction of changes is carefully managed whilst ensuring the impact of these is maximised without compromising the integrity of the network. Standards will also need to be defined as to who can perform the various roles to ensure bad actors are not able to compromise the integrity of the network.

(17) To what extent will interoperability between different digital asset networks be important in the future? What risks does a lack of interoperability pose? And what steps, if any, should be taken to encourage interoperability?

As discussed in response to questions 7 and 15, Ripple believes that enabling interoperability between different digital asset networks is essential. The power of digital assets to reduce friction and enhance trust between two parties on either side of a payments transaction is already having a transformative effect on industry. Yet creating a faster, cheaper payments network or a smarter supply chain barely scratches the surface when it comes to achieving digital assets' full potential. The truly transformative impact will happen only when individual networks come together to form a "network of networks" that will change how assets and industries transact with each other.

How to ensure interoperability is a problem already under consideration. Interledger Protocol²⁴ (ILP), for example, is an open protocol suite designed to allow value to be transferred across different types of ledgers. With true interoperability achieved through adoption of protocols like ILP, we will not be limited by the specific technology of any

²⁴ <https://interledger.org/>.

individual blockchain but can instead create interconnected experiences that solve more problems and open up new opportunities.

In just one example, banks and other financial institutions currently struggle to service small and medium-size businesses because their high-cost systems are geared toward larger customers. Interoperable trade finance and payments solutions powered by blockchain technology, however, could enable them to offer lower cost alternative services to smaller firms. The ability to tap into these new markets will drive higher volumes and more profits for the banks – thanks to blockchain’s increased efficiency – while also allowing small businesses and startups to compete with larger rivals.

Protocols used by global, cross-border payment networks and the decentralised tools that support them should be considered and supported in this new age of domestic networks, both by the United States and in the international fora in which they engage (e.g., G20). Embracing the capabilities of these global networks, and better enabling domestic institutions to connect their individual capabilities with other systems and markets, will enable optimized outcomes domestically as well as fulfill the potential that the globalization of value holds.