



January 27, 2016

Attn: Ms. Myra Valenzuela
mvalenzuela@worldbank.org

From: Ripple
300 Montgomery Street, 12th Floor
San Francisco, CA 94104

Ripple, a global leader in payment technology, appreciates the opportunity to comment on the *Global Standard-Setting Bodies and Financial Inclusion Consultation Document*. We applaud the G20's Global Partnership for Financial Inclusion (GPII) for focusing on this critical issue. Ripple believes the Consultation Document and related work efforts are crucial, as the well-being of consumers and the stability of the financial system are endangered when financial inclusion is not thoroughly addressed.

When financial systems fall short of meeting market needs, underserved communities turn to informal and unregulated schemes that often lack the safety and consumer protection assurances that exist within traditional financial services. Further, regulators lose visibility into financial flows, hindering their anti-money laundering and counter terrorist financing efforts. With these risks top of mind, Ripple shares the GPII's objective of improving financial inclusion.

We are at an important crossroads that demands the attention of regulators and standards setting bodies. New technology is converging with financial services in a way that can propel financial inclusion efforts forward, but not without the careful consideration and coordination of policy makers globally.

In this letter, we highlight the breakthrough of distributed financial technologies, specifically shared ledgers, blockchain and open interoperability standards. These tools offer great potential for improving financial inclusion. They lower costs, reduce risks and increase speed of payments, enabling financial institutions to sustainably offer new products and services for the underserved. For example, with these technologies, financial institutions are building affordable low-value remittance products for the first time - a need in many underserved markets.

However, the benefits of these technologies and their impact on financial inclusion cannot take root without a workable regulatory framework that is consistent and coordinated globally. Standard setting bodies play a vital role in laying the groundwork

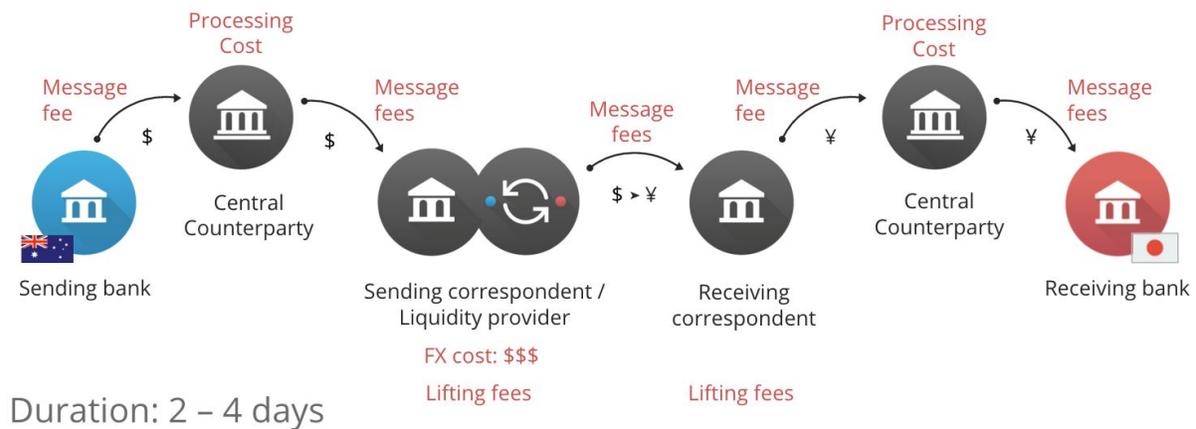
for new technology. It is imperative that regulators and standard setting bodies begin to acknowledge these advancements and understand their implications for financial inclusion. Otherwise, the chance to realize the transformational benefits of these technologies may be lost.

Financial Inclusion Challenges of Cross-Border Payments

Cross-border payments today require several intermediaries between the sending and receiving bank, resulting in high processing costs, lengthy settlement times, and a poor customer experience. Each intermediary charges a fee, poses additional counterparty risk and creates an opportunity for errors. Relying on a chain of institutions to process the payment results in settlement taking between two and four days. These inefficiencies result in a total cost of \$1.6 trillion¹ per year for all participants in the ecosystem.

Payments today require many intermediaries

Side effects: Delays, costs, counterparty risk



These conditions result in cross-border payments being feasible only for high-value transactions. The costs make low-value cross-border transactions impractical. Consumers, especially migrant workers seeking to send money to relatives in other countries, go underserved.

Meanwhile, the Internet's low-cost, immediate connectivity has changed consumers' expectations. The demand for immediate, affordable cross-border payments is growing.

¹Ripple analysis across: World Trade Organization, *International Trade Statistics 2014*; Institute of International Finance, *Aggregate Capital Flows 2014*; Federal Reserve Financial Services, *Cross Border Payments, 2015*

Breakthrough: Distributed Financial Technology

In recent years, distributed financial technologies have emerged as viable options to improve the efficiency of cross-border payments. Shared ledgers systems, “blockchain”, and open interoperability protocols are commonly cited examples of this technology.

There are various models for the technology, some of which involve direct-to-consumer approaches. For the sake of this paper, the technology is described in light of Ripple’s model, as payment infrastructure for financial institutions. Ripple is not a consumer-facing network, rather a tool financial institutions can use to underpin new payment products.

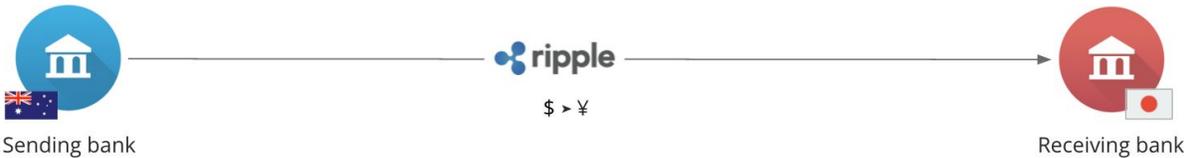
Ripple’s solution is built around a shared ledger that multiple financial institutions jointly operate. Unlike most systems today, there is no central operator. The connections between the financial institutions create a network that enables instant transaction verification and settlement certainty. It offers a cryptographically secure end-to-end payment flow with transaction immutability and information redundancy.

Minimizes costs and risks through real-time bilateral payments

Ripple and other distributed technologies enable real-time bilateral payments – direct from sending to receiving bank. This straight-through processing circumvents the chain of intermediaries that are required today, along with their costs, delays, and risks. Instead of settlement taking up to four days, Ripple enables settlement in three to six seconds.

Ripple enables direct payments

Eliminates intermediaries, reducing delays, costs, and risk



Duration: 3 – 6 seconds

Real-time bilateral payments eliminate processing steps and opportunities for errors to occur at each intermediary. The direct connection between the sending and receiving

institutions provides real-time transaction confirmation and enables banks to immediately resolve errors. Since payments fully settle in real-time, there is no possibility that a payment will fail several days after being initiated. Therefore, sending institutions do not have to account for the risk and cost of replacing a failed transaction with a new intermediary at a new market price several days later.

Today's payment systems provide little transaction visibility for sending and receiving banks. They are unable to tell where the payment is along the chain of intermediaries. Bilateral connectivity and a shared ledger enable complete funds traceability between sending and receiver bank. Further, banks can exchange more payment information (e.g. fee pre-disclosure; balance validation; confirmation) before and after settlement.

Unlike systems with a central operator, the financial institutions on Ripple jointly validate transactions. While the failure of a central processor would disrupt the operation of one of today's networks, on Ripple a large majority of independent financial institutions would need to fail simultaneously for the system to cease operating. This process ensures operational resiliency by maximizing redundancy of critical functions and eliminating a single point of failure on the network.

By reducing these risks and delays in payments, new technologies lower the total cost of sending a payment. This is a crucial step in addressing financial inclusion. Products supporting financial inclusion are most likely to be sustainable if they are profitable for companies to provide. Ripple's ability to reduce the risks and costs of payments makes it more economical for banks to offer affordable low-value remittance products that were not previously feasible.

Open standards enable interoperability

In addition to costs and risks of payments, a lack of interoperability between payment service providers is a hinderance to financial inclusion. In both developed and developing worlds, greater payment interoperability would open access to financial services.

Mobile money operators have proven to be a successful and growing solution for payments. Mobile money solutions allows consumers to easily send and receive payments. However, many of these solutions, along with most traditional payment networks, exist as walled gardens. It is cumbersome and expensive, if not impossible, to send payments between different networks. They were not designed with interoperability in mind.

Open interoperability standards have emerged as a viable solution for secure, real-time connectivity between payment systems. A new technology called the Interledger Protocol (ILP) is taking root to address the lack of interconnectivity in global payments. ILP acts as a bridge between the multiple payment systems, allowing money to move quickly and seamlessly. W3C, the standards setting body for the Web, currently has a Web Payments Working Group focusing on improving consumer payments on the Web. Separately, exists an ILP Community Group, which works specifically on implications of ILP and connecting payments globally. A stakeholder group called the Web Payments Interest Group will eventually help to initiate a formal ILP working group, and together they will focus on furthering ILP and its development. These efforts are evidence that open source solutions are taking root with thought leadership groups as a low-cost way to build global interoperability.

Distributed Financial Technologies: Gaining Traction Globally

Many governments have already recognized the importance of distributed ledger technologies and are taking steps to modernize their regulatory and economic policies to accommodate these tools.

In 2014, the People's Bank of China created a research team which recognized the benefits of digital currency and distributed ledger technologies. The Philippines also undertook a similar effort.²

The United Kingdom Government Office for Science recently issued a report on distributed ledger technology, asserting that it, "...provides the framework for government to reduce fraud, corruption, error and...has the potential to redefine the relationship between government and the citizen in terms of data sharing, transparency and trust."³ The UK is aware that these technologies are means to a more efficient and prosperous economy.

Recognizing the emergence of distributed financial technology, the Bank of England is in the process of developing a framework to update the country's 20-year old real-time gross settlement system. The deputy governor for markets and banking acknowledged distributed ledger technologies' security and consumer protection benefits stating, "The

² "China Mulls Answer to Bitcoin With Digital Currency Study," Bloomberg, 21 January 2016, <http://www.bloomberg.com/news/articles/2016-01-21/chinese-central-bank-studies-prospect-of-own-digital-currency>

³ Distributed Ledger Technology: beyond block chain, UK Government Office for Science, January 2016, https://www.gov.uk/government/uploads/system/uploads/attachment_data/file/492972/gs-16-1-distributed-ledger-technology.pdf

emergence of various forms of distributed ledger technology...may reshape the mechanisms for making secured payments.”⁴

In Canada, the Senate Committee on Banking, Trade and Commerce (BANC) conducted a study on digital currency and distributed ledger technology, going in depth about the risks and opportunities they offer. In the report, the Senate comments on distributed ledger technology’s implications for financial inclusion stating that, “Bringing financial services to the unbanked in the developing world is one of the exciting things we heard about.”⁵

Furthermore, a report issued by the International Monetary Fund during the World Economic Forum in Davos, Switzerland, addresses the promise of distributed financial technologies. Christine Lagarde, managing director of the IMF spoke to this promise saying, “Virtual currencies and their underlying technologies can provide faster and cheaper financial services, and can become a powerful tool for deepening financial inclusion in the developing world. The challenge will be how to reap all these benefits and at the same time prevent illegal uses.”⁶

A global regulatory framework

The promise of distributed financial technologies is being widely acknowledged, however, global coordination in how these technologies are implemented and regulated is crucial to ensuring the benefits can be fully realized. Standard setting bodies are key to building a consistent, coordinated framework that will enable these technologies to be broadly adopted in safe and prudent ways.

Ripple urges standard setting bodies to propel financial inclusion forward by

1. weighing the benefits of new payments technology along with potential risks
2. identifying regulatory and oversight expectations for technology that may not fit within existing frameworks, and
3. establishing coordinated, consistent regulatory approaches globally.

These steps will help provide the clarity and guidance needed for new payment technology to develop.

⁴ “Bank of England to develop blueprint for overhaul of UK payments system,” Finextra, 27 January 2016, http://www.finextra.com/news/fullstory.aspx?newsitemid=28391&utm_medium=DailyNewsletter&utm_source=2016-1-28

⁵ “Digital Currency: You Can’t Flip This Coin,” Canada Senate, June 2015, <http://www.parl.gc.ca/Content/SEN/Committee/412/banc/rep/rep12jun15-e.pdf>

⁶ “International co-operation essential to manage virtual currency risks - IMF,” Finextra, 21 January 2016, http://www.finextra.com/news/fullstory.aspx?newsitemid=28364&utm_medium=DailyNewsletter&utm_source=2016-1-22

This approach has a successful track record of enabling other technology breakthroughs to develop safely. In the early 1990s, the Internet emerged as a promising new tool. It offered great potential for economic growth, innovation and inclusion; yet its newness and global scope caused uncertainty and concern about risks.

Policy makers responded to the emergence of the Internet by developing a framework for electronic commerce that recognized the Internet's great potential while balancing its new risks. In 1997, the United States White House issued a Presidential Directive acknowledging the promise of new technology and setting expectations for safety and risk.⁷ Further, in 1997 the European Commission adopted the Bonn Declaration, a similar framework on global information networks.⁸ These frameworks established **clear, predictable, and globally coordinated rules for electronic commerce that ensured security and privacy**. This crucial step recognized the Internet's potential, allowing positive uses of these technologies to take root, and questionable uses to be identified and resolved.

This same approach should be taken with new payment technologies today. While we do not know exactly what the future of payments holds, we do know new technology has great potential to improve financial inclusion globally. Yet, without a coordinated regulatory framework, innovation in financial services cannot successfully take root.

In 2015, the Reserve Bank of Australia noted, "Digital currencies represent an interesting development in the payments and financial system landscape. The concept of a decentralised ledger is an innovation with potentially broad applications for a modern economy." However, because these technologies are global in scope, RBA stated that regulation should be coordinated globally to effectively identify and address risks. "One vehicle for coordination would be through the Committee on Payments and Market Infrastructure (CPMI) at the Bank for International Settlements."⁹

The IMF stated similar viewpoints in 2016. "The establishment of international standards that take into account the specific features of [virtual currency schemes and distributed financial technologies] may promote harmonization in regulation across jurisdictions, and facilitate cooperation and coordination across countries over questions such as the sharing of information and the investigation and prosecution of cross-border offenses."¹⁰

⁷ The United States White House, Presidential Directive - Electronic Commerce, 1 July 1997
<http://clinton4.nara.gov/WH/New/Commerce/directive.html>

⁸ "European Ministers Adopt Declaration on Global Information Networks, July 1997,
<http://merlin.obs.coe.int/iris/1997/8/article1.en.html>

⁹ "Bank for International Settlements cast as digital currency regulator," Finextra, 7 April 2015,
<http://www.finextra.com/news/fullstory.aspx?newsitemid=27202>

¹⁰ "Virtual Currencies and Beyond: Initial Considerations" International Monetary Fund, January 2016,
<http://www.imf.org/external/pubs/ft/sdn/2016/sdn1603.pdf>

It is evident that the benefits of these technologies are global in scope. Yet standards setting bodies play a pivotal role in bringing them to fruition. While it may seem a daunting task, regulatory coordination will ensure risks are effectively identified and managed while the benefits to financial inclusion are fully realized. Our legacy of successfully addressing the Internet is promising evidence of our ability to address today's new payment tools.

The positive impacts on financial inclusion alone will make efforts worthwhile. According to a 2016 Citi report on digital payments, "...a 10% increase in adoption [of digital payment technology] could help up to 220 million people enter the formal financial sector."¹¹ This kind of impact is undeniably important in the effort to improve financial inclusion.

Thank you for your attention, and Ripple looks forward to our continued engagement with regulators and standard setting bodies globally.

Sincerely,

Ryan Zagone
Director of Regulatory Relations
Ripple

¹¹ World on 'slow but steady march' to digital money," Finextra, 26 January 2016, <http://www.finextra.com/news/fullstory.aspx?newsitemid=28386>