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27 November 2014

Senate Standing Committees on Economics  
PO Box 6100  
Parliament House  
Canberra ACT 2600

Dear Madam/Sir:

Sub: Senate Inquiry into Digital Currency

On behalf of Ripple Labs Inc., I am very pleased to table this submission, via the online facility, for your consideration.

Ripple Labs is engaging with financial institutions around the world, including Australia, to implement an open, free and universally acceptable global protocol for funds settlements. Being a transformative technology, especially for cross-border transactions, we believe this can enable Australian institutions, small and large businesses and individuals to prosper in global markets.

Digital currency is an enabling component of the Ripple protocol, but not as a currency for use by individuals or to replace fiat currencies like the Australian dollar. Our proposed use of digital currency is to reduce friction between financial institutions and accelerate the velocity of financial transactions by the provision of cheap and plentiful liquidity.

We believe digital currency can play a key role alongside traditional fiat currencies in such digitally-enabled models for transforming economies. We are working with financial regulators around the world as well as supporting new initiatives for financial inclusion in emerging economies.

Ripple Labs would be happy to provide further information and opinions to the Australian Senate Inquiry into Digital Currency. We have no objection to our submission being made public.

Yours sincerely,

Dilip Rao  
Director - Asia Pacific  
Ripple Labs Inc.

Ripple Labs Inc.  
San Francisco, CA USA

## Digital Currency - an Enabler of Growth



Submission to:

Inquiry on Digital Currency  
Senate Standing Committees on Economics  
PO Box 6100  
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Canberra ACT 2600

27 November 2014

## Executive Summary

### Regulatory approach

We believe that the government should create standards for digital currency businesses that address risks posed to consumers. In devising a regulatory regime, regulators should tailor requirements that specifically apply to digital currency businesses based on the specific risks they pose.

To support innovation, regulators may consider a tiered regulatory scheme. Under such a scheme, smaller entrepreneurial companies could operate under a registration system, with lighter requirements than more established and larger players. Businesses operating above a certain threshold (in terms of risk and volume) could be required to obtain licenses to operate.

Harmonizing a global standard for digital currencies could provide clarity and an even playing field for technologists and companies that innovate using digital currencies.

The various virtual currencies that are assets and the protocols that have been built around them (Bitcoin, XRP, Litecoin and others) present a relatively consistent set of issues that can be addressed by a single regulatory framework.

As pure technologies, these protocols cannot themselves be regulated. However, the entities that make use of the protocols to buy, sell, or exchange those virtual or fiat currencies can be subject to regulation.

### Benefits of digital currencies

Utilizing digital currencies could be particularly attractive for both lowering the cost and substantially increasing the speed of cross-border payments, where values are linked to stable national currencies and quickly exchanged.

We believe that digital currencies may not be suited for direct consumer interaction since they involve volatile assets with inherent price volatility and risks.

Digital currencies have the potential to significantly lower transaction costs. Real-time payment systems offer tangible benefits to national economies through increasing efficiency and liquidity, which has an impact on GDP growth.

At the consumer level, Ripple has the ability to incorporate the unbanked and underbanked populations by reducing the cost of payments to zero.

At the regulatory level, the visibility of the decentralized ledger system facilitates efficient regulatory inquiries. Ledger transparency provides visibility into customer activity and reduces compliance costs.

## Terms of Reference

The Australian Senate Inquiry is on digital currency, with particular reference to:

1. how to develop an effective regulatory system for digital currency that:
  1. ascertains the most appropriate definition of digital currencies under Australian tax law,
  2. promotes competition and growth of the digital currency industry,
  3. ensures ongoing stability in the financial services industry,
  4. secures protection of consumers and businesses against illegal activity,
  5. incorporates digital currencies into Australia's national security framework, and
  6. ensures the financial stability of the industry;
2. the potential impact of digital currency technology on the Australian economy, including the:
  1. payments sector,
  2. retail sector, and
  3. banking sector;
3. how Australia can take advantage of digital currency technology to establish itself as a market leader in this field; and
4. any other related matters.

### Scope of Submission

The scope of this submission by Ripple Labs Inc. is restricted to the following aspects due to time and resource constraints. However, we would be happy to provide further information and opinion to the Inquiry.

1. How is digital currency (XRP) used in the Ripple Protocol?
2. What are some considerations in developing a regulatory system for digital currency?
3. What are the benefits of digital currency to the Australian economy?
4. What risks do digital currencies pose to users?

### About Ripple Labs Inc.

Ripple Labs developed the Ripple protocol, which makes transacting as easy as emailing. The San Francisco-based startup is privately funded. Its team of cryptographers, security experts, distributed network developers, Silicon Valley and Wall Street veterans enables businesses of any size to easily build payment solutions and accelerate the movement of money globally. Together with the community, the company works to evolve finance so that payment systems are open, secure, constructive and globally inclusive.

Ripple is an open-source, distributed payment protocol. It enables free and instant payments in any currency — including dollars, yen, euros, Bitcoins, and even loyalty points. Businesses of any size can easily build payment solutions, such as banking or remittance

apps, and accelerate the movement of money on Ripple. Ripple enables the world to move value like information moves today.

The Ripple protocol operates as a pure technological element in an overall system, in which the professional actors engaging in financial activities, such as gateways (financial institutions that provide access to the Ripple network), are to be regulated. The protocol includes a native digital currency, XRP. The primary purpose of XRP is to carry out specific operational and security functions within the protocol. Separate from that functionality, XRP has the ability to serve as a means of payment, similar to other digital currencies.

The Ripple protocol facilitates domestic and cross-border payments and fund transfers while reducing friction and costs. The Ripple protocol also has the ability to facilitate cost-effective payments for businesses and consumers.

For more information about Ripple, please visit [ripple.com](https://ripple.com).

# 1. How is digital currency (XRP) used in the Ripple protocol?

## 1.1 What are XRP?

The Ripple protocol has a native currency called XRP (sometimes referred to as “ripples”), which performs several key functions within the network. XRP, like other digital currencies, is a math-based currency (also known as cryptocurrency), which is a digital asset with verifiable mathematical properties. As a digital asset, ownership of XRP can be directly transferred peer-to-peer.

Just like bitcoin exists natively on the blockchain, XRP exists natively on the Ripple network as a counter-party free currency. Unlike the Bitcoin Protocol, however, Ripple users can opt not to use XRP as a medium of exchange. Instead, XRP performs two key functions within the network: protect the network from abuse and provide a bridge currency for market makers. More on these functions below.

## 1.2 What is a Counter-party free Currency?

Traditional currencies like EUR and USD are not natively digital assets. When we send electronic payments, we obviously cannot transfer physical paper bills across the Internet. Instead, we exchange bank balances, which are effectively just IOUs that the bank has issued. A bank balance is a promise from the bank that you can redeem your money on demand.

## 1.3 XRP: Fast Facts

- 100 billion units of XRP were created at Ripple’s inception.
- Small amounts of XRP are destroyed with each transaction (i.e. deleted from the database).
- No more XRP can ever be created, per the protocol rules.
- XRP is currently sub-divisible to 6 figures (0.000001).

## 1.4 XRP secures the Network

The network charges tiny fees denominated in XRP to discourage network abuse. A malicious attacker could attempt to overwhelm Ripple servers by sending transaction spam (a flood of small transactions) or ledger spam (creating a flood of new orders or new accounts). These types of attacks, known as denial-of-service (DoS) attacks, can occupy a server with requests for information, creating a long queue to process information, rendering it unable to process legitimate transactions in a reasonable timeframe.

To prevent these types of spam abuses, the Ripple network requires every user to hold a small amount of XRP to meet network reserve requirements and to pay transaction fees. In

each of these cases, the economic value is negligible for normal use – less than \$1 worth of XRP is enough to send tens of thousands of payments across Ripple. The reserves exist to create an economic cost to sending an abusively high number of transactions.

The goal of this design is to quickly bankrupt attackers (by raising the transaction cost automatically) and keep the network functioning smoothly. Attacking the Ripple network can get very expensive, very quickly, but for regular users, the cost effectively remains “free.” In this context, XRP can be thought of as a postage stamp for transactions.

### 1.5 XRP as Bridge Currency

On a protocol level, Ripple makes a distinction between both the balance type (USD, EUR) and the issuing counter-party (Bank A, Bank B, etc.). This is important because USD balances issued by two different banks are technically liabilities of different institutions and have different counter-party risk profiles. As the number of assets and the number of counter-parties in the network grows, the number of currency pairs can quickly become unmanageable for a market maker providing liquidity between institutions sending and receiving funds.

Rather than quoting every possible currency/gateway combination, XRP can serve as a useful bridging tool for market makers. If every currency is liquid to XRP, it is also liquid to other currencies.

The Ripple protocol seeks to find the least cost path between sending and receiving gateways. As the number of gateways grows, it becomes increasingly complex to find paths to resolve transactions. Long paths are inherently fragile. It takes long periods of time to scan for long paths, and since order books are subject to constant change, the longer it takes to calculate a path, the more likely it is that the path will have changed or disappeared by the time a transaction is attempted to be sent.

If all balances on Ripple are liquid to XRP, it significantly reduces the need for complex paths, making everything one hop away. Accordingly, XRP becomes more useful as a bridge currency as the Ripple network topology sprawls.

If XRP is increasingly used as an intermediary currency, users who are unsure of what currency they will need may choose to hold XRP, since it readily translates into all other assets on the network.

## 2. What are some considerations in developing a regulatory system for digital currency?

Ripple Labs believes that the appropriate regulation of digital currencies should take into account the various stakeholders including developers and innovators. Regulation that clearly defines and distinguishes between the different actors and businesses in the digital currency industry, including users, consumer-serving operators and infrastructure providers can facilitate innovation without the unintended consequence of creating barriers to entry.

Our view is that in devising a regulatory regime, regulators should begin by issuing specific guidance on how digital currency business should be treated under existing regulations and clearly distinguish between the various applications to that business, including those that store funds for consumers, facilitate exchanges or simply build on digital currency technology.

Regulators should tailor any additional regulatory requirements that specifically apply to digital currency businesses based on the specific risks they pose. While digital currencies do present specific risks, regulators should also take into account the risks that can be alleviated by using digital currency technology. For example, the Ripple protocol is a point-to-point technology that reduces counter-party risk and removes the settlement risk that is inherent in the current correspondent banking system.

The Ripple Ledger, the BlockChain and other modern settlement technologies have significant advantages over the technologies on which banks, insurance companies and traditional money transmitters rely to move and track money. The definitions that the government ultimately adopts should not dissuade such financial institutions from incorporating these technologies to reduce the risk and speed the movement of money.

An additional suggestion we have is that to support innovation, regulators consider a tiered regulatory scheme. Under such a scheme, smaller entrepreneurial companies could operate under a registration system, with lighter requirements than more established and larger players. Businesses operating above a certain threshold (in terms of risk and volume) could be required to obtain licenses to operate, with the full panoply of regulatory requirements, regular examinations and permissions.

Harmonizing a global standard for digital currencies could provide clarity and an even playing field for technologists and companies that innovate using digital currencies. The current variation and lack of uniformity across jurisdictions creates significant uncertainty for digital currency businesses. In addition, establishing a materiality threshold beneath which no regulation is needed would create a two-step regime with the first step having little friction.



## **2.1 If the government were to regulate digital currencies, which types of digital currency should be covered?**

Ripple Labs believes that regulatory attention should be directed towards those virtual currencies that are digital assets, and that do not create a corresponding liability. Until the development of the Bitcoin technology, all other electronic forms of value were liabilities that required a counter-party to confirm their existence. The primary innovation that Bitcoin introduced was the ability to have an asset that could exist entirely in electronic form. The various virtual currencies that are assets and the protocols that have been built around them (Bitcoin, XRP, Litecoin and others) present a relatively consistent set of issues that can be addressed by a single regulatory framework.

Another consideration for governments seeking to regulate digital currencies is the fact that payments protocols have been built around these technologies. These protocols are essentially algorithms that enable digital or fiat currencies to change hands, electronically. They operate similarly to other Internet protocols, such as SMTP, which is the electronic standard for email transmission. As pure technologies, these protocols cannot themselves be regulated. However, the entities that make use of the protocols to buy, sell, or exchange those virtual or fiat currencies can be subject to regulation.

## **2.2 What difficulties could occur with digital currencies and financial sanctions?**

Some have argued that a sanctioned entity could use digital currencies to transact anonymously, and in this way subvert government-imposed sanctions regimes. In this regard, it must be recognised that current financial systems can and do allow substantial payments to be made to sanctioned individuals and countries. The recent BNP settlement with FinCEN in the United States provides just one recent example of how this occurs: financial actors manipulate messaging or in other ways take advantage of the opacity of the current correspondent banking network to divert funds to forbidden counter-parties.

While not a panacea, distributed ledger technology can substantially increase transparency in cross-border funds transfers. This is particularly true of the Ripple distributed ledger system, which permits visibility of all transactions taking place through the protocol, and in which transaction histories of all accounts are available.

## **2.3 What risks do digital currencies pose to monetary and financial stability?**

We encourage the Senate to look at digital currencies as “complementary currencies” rather than currencies that compete with government-issued currencies. While we believe that utilizing digital currencies could be particularly attractive for facilitating cross-border payments, Ripple Labs does not share the view that digital currencies should replace fiat currencies. For many reasons, including geo-political considerations, it is highly unlikely that any digital currency could pose a meaningful threat to monetary or fiscal stability for the foreseeable future.

### 3. What are the benefits of digital currencies to the Australian economy?

Utilizing digital currencies could be particularly attractive for both lowering the cost and substantially increasing the speed of cross-border payments, where values are linked to stable national currencies and quickly exchanged. Ripple Labs believes that there are inherent benefits in a value-agnostic payments protocol.

We believe that digital currencies may not be suited for direct consumer interaction since they involve volatile assets with inherent price volatility and risks. In the case of Bitcoin they are cumbersome to use for transactions. We think digital currencies are best served within an infrastructure. Consumers would have a variety of ways to interact with the infrastructure.

Digital currencies have the potential to significantly lower transaction costs. The Ripple Protocol has an impact on the existing banking system, while indirectly benefiting consumers and businesses that interact with banks. The Ripple Protocol can have a significant impact on cross-border payments with the ability to facilitate real-time payments. Real-time payment systems offer tangible benefits to national economies through increasing efficiency and liquidity, which has an impact on GDP growth. Ripple addresses the growing need for an efficient payment infrastructure globally.

Real-time payment systems have the impact of increasing the velocity of money. In simple terms, this means that by moving to real-time payments from batch systems, money can be used to make a greater number of purchases or other transactions within the same elapsed time-frame. This effectively increases the productivity of money.

At the consumer level, Ripple has the ability to incorporate the unbanked and underbanked populations by reducing the cost of payments to zero. However, Ripple Labs does not believe there are direct benefits of digital currencies to consumers, when treated as assets.

At the regulatory level, the visibility of the decentralized ledger system facilitates efficient regulatory inquiries. Ledger transparency provides visibility into customer activity and reduces compliance costs.

The Ripple Ledger, the Blockchain and other modern settlement technologies have significant advantages over the technologies on which banks, insurance companies and traditional money transmitters rely to move and track money. Many digital currency technologies, including Ripple, have publicly available ledgers and other methods that make digital currency transactions more traceable than transactions occurring over conventional networks.

The Ripple Ledger is interoperable, which allows siloed information in closed systems to talk to each other. A distributed ledger between two existing systems such as SEPA and Direct Entry (or the New Payments Platform), can facilitate information sharing and enable a more efficient global payments system.

Adding efficiency to the global payment system improves commerce and reduces costs that allows participants in the global economy to send and receive money, without requiring governments to change tax or other policies. Cryptocurrency technology has the ability to expand commerce and financial services to the people in the world who as of today are not able to access these services locally, let alone have access to international financial and commercial markets.

The distributed ledger technology increases transparency and addresses the existing opacity in international financial transactions which has contributed to criminality globally. The friction in the existing system and lack of information sharing has made the fight against global crime a burden. Anyone can view the ledger and see a record of all historic activity on the Ripple ledger, including exchanges and payments. Ripple's distributed ledger and consensus technology makes it difficult to conceal illicit activities on the network, such as fraudulent payments and accounts that are hacked.

## 4. What risks do digital currencies pose to users?

There are several risks that digital currencies pose to users. Among the risks that have been identified globally include account security, anonymity, lack of fee disclosures, price volatility, and investment scams targeting consumers. Ripple Labs has issued gateway bulletins notifying gateways of consumer risks and how they can educate their users on the various risks.

There is the concern that digital currencies such as XRP or Bitcoin can be targets for hackers. Digital currencies are stored in a “digital wallet,” which is secured by sophisticated cryptography. The wallet is identified by a consumer’s “public key” and accessed with “private key”. (Private keys are random sequenced letters and numbers that should be kept secret; Public keys, or “public address”, are corresponding letter/number sequences that others can identify when sending or receiving funds.) Users can store their private keys themselves on their computer or entrust them to a service such as a wallet provider to protect them.

There is also the concern that if a consumer trusts someone else to hold their digital currencies and something goes wrong, that company may not offer them the kind of help they expect from a bank or credit card provider.

Consumers are also at risk for using services that do not disclose the costs associated with storing their currencies. Users are encouraged to understand the exchange rate for the digital currency that they are purchasing or using and how it is determined. Ripple Labs encourages gateways to help consumers understand these costs by disclosing them on their website.

Digital currencies can be subject to wide price fluctuations which means that short term losses as well as short term gains are likely to occur at times. Consumers can also be targets for scams. Consumers should be aware of fraudsters taking advantage of the hype surrounding digital currencies to cheat people with fake opportunities.

We believe that some of the risks posed to consumers who buy and store digital currencies would also apply to users who store fiat currency digitally in a Paypal or bank account. These include unauthorized use of an account, compromised account credentials, or data breaches that expose personal information. Our view is that new risks are inherent when new technologies emerge. Ripple Labs is implementing various features that address security concerns. We are also building the capability for an identity functionality that will make it easier for gateways and wallet providers to collect KYC details consistent with the rules in the country in which they operate. The goal for the identity functionality is for gateways to know the identity of their users without compromising privacy.

We believe that the government should create standards for digital currency businesses that address risks posed to consumers. In devising a regulatory regime, regulators should tailor requirements that specifically apply to digital currency businesses based on the specific risks

they pose. We believe that the government should seek to clarify the actual risks and opportunities presented by different digital currency businesses.

We also believe that digital currency businesses should implement best practices and be transparent about their terms of use and the protections they may provide its users. Suggested terms of use may include, as appropriate: (1) any fees charged to consumers, (2) contact information and address, (3) the business's dispute resolution process, (4) description of protection against unauthorized transactions, (5) efforts around privacy and security, (6) customer services, and (7) chargeback policy.

Eventually, we believe that the good actors (i.e., virtual currency businesses that comply with the regulatory regime on digital currency) will be distinguished from the bad actors (i.e., businesses that operate anonymous exchanges) and it will be easier for users to detect fraudulent scams.

## **4.2 What are the crime risks associated with digital currencies?**

There is the concern that digital currencies such as XRP or Bitcoin can be targets for hackers or money laundering activities. These same concerns are present for any digital store of value. As technology evolves, companies will be able to advance their security measures to meet security threats. Ripple Labs has created risk tools that facilitate investigations related to suspicious activity. These tools assist us in detecting activity that is abnormal, investigating various activities, and filing reports with the appropriate agencies.

The risk of anonymity also poses threats to the digital currency ecosystem. We believe that users buying, selling, sending or receiving digital currencies should be required to undergo KYC procedures if they trigger a pre-defined threshold.

We believe that the government should take action to address the risks of financial crime by applying existing rules to digital currency businesses. For example, the rules on anti-money laundering and counter-terrorist financing (AML/CTF) can be applied to digital currency businesses based on the specific products they offer to ensure that companies are implementing policies to combat money laundering. We believe that these rules can apply to businesses without the need to undergo an expensive licensing process with the appropriate agency.

FinCEN-issued guidance in the United States on digital currencies now requires certain digital currency businesses to be registered as Money Services Businesses (MSB). The process for registering as an MSB poses a significant financial barrier for small entrepreneurial companies. The reporting, record-keeping and other obligations imposed on MSBs also create barriers for these companies.

In Australia, the Australian Financial Services License regime would impose similar constraints and may create barriers to innovation.

We believe that regulation should be tailored around the risks posed by the digital currency business. Similarly, governments can implement more lenient requirements for digital

currencies that are launching and adjust the rules based on their business activities and the products that they offer once they are able to run a business.

Establishing material thresholds in terms of values stored or processed (say, AUD 10 million) would enable larger businesses to be regulated while smaller ventures that do not pose significant risks could be encouraged to innovate with products and services.