

# **Exhibit A**

**UNITED STATES DISTRICT COURT  
SOUTHERN DISTRICT OF NEW YORK**

**EXPERT REPORT OF [REDACTED]**

**OCTOBER 4, 2021**

*U.S. Securities and Exchange Commission v. Ripple Labs, Inc., Bradley Garlinghouse, and  
Christian A. Larson*

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## **1. Introduction**

### **1.1 Assignment**

1. I have been engaged by the U.S. Securities and Exchange Commission (“SEC”) to provide expert testimony in the matter of *U.S. Securities and Exchange Commission v. Ripple Labs, Inc., et al.*, pending in the United States District Court for the Southern District of New York.

2. The SEC retained me to independently analyze and render opinions on the perspective of a reasonable purchaser of XRP on Ripple’s statements, actions, and product offerings.<sup>1</sup> The purchasers I am considering in this matter primarily include individuals, institutional investors, and financial services companies. The purchases of XRP were made through trades on the XRP Ledger, on digital asset trading platforms, and in private over-the-counter (OTC) transactions throughout the period that Ripple offered XRP for sale from 2013 to the filing of the SEC’s Complaint on December 22, 2020 (“Issuance Period”). My report is limited to the Issuance Period.

### **1.2 Qualifications**

3. [REDACTED]  
[REDACTED] assisting various government agencies with investigating possible securities violations and financial fraud in the digital assets space. This experience includes analyzing fraudulent blockchain investment schemes, tracking money laundering on the blockchain, and discovering and proving manipulative trading activity related to digital assets. I have written an expert report filed for the SEC in [REDACTED]  
[REDACTED], about reasonable purchaser expectations

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<sup>1</sup> I also was retained to provide analysis and/or a rebuttal to Defendants’ expert reports, if and as needed.

concerning the digital assets that [REDACTED] offered and sold – a report cited by the Court multiple times, among other reasons, in finding that a reasonable purchaser of the digital assets would have had an expectation of profit. *Id.* at 372-73 & n.3. I have provided expert consulting in blockchain, digital assets, and forensic data analytics for private companies, federal agencies, and foreign securities regulators. My work providing expert consulting related to digital assets has ranged from examining documents and representations related to initial coin offerings to providing detailed analysis of blockchain data, including flows of funds on the blockchain, smart contract activity, on-blockchain trading data, and decentralized finance platforms. I have also developed and managed the development of scripts and algorithms to process and analyze large collections of blockchain data.

4. In addition, I am the Founder and Managing Director of an investment partnership, [REDACTED] Capital LLC. [REDACTED] Capital began operating in [REDACTED], and legally formed in [REDACTED]. [REDACTED] Capital LLC was originally primarily focused on making investments in the digital asset space, and since its founding I have profitably allocated capital to many digital asset investments. In addition to analyzing hundreds of companies, projects, coins, and tokens in the digital asset space, I have developed and executed successful cryptocurrency arbitrage strategies. These activities have given me an intimate familiarity with many different participants in the digital asset space including retail users and traders, institutional investors, cryptocurrency miners, software developers, entrepreneurs, and venture capital investors. I have practical firsthand experience with using blockchains as well as the trading platforms, software platforms, and institutional products built on top of them. In addition to my experience in digital asset investments, I have 19 years of experience evaluating and investing in companies, public equities, commodities, real estate, bonds, currencies, and derivatives of those asset classes. I



have managed automated quantitative strategies as well as discretionary investment strategies across many different asset classes, with emphasis on equities and equity options. As part of this work, I routinely analyze the investment thesis – that is, the relative risks and rewards of an investment and the circumstances in which the investment makes the most sense – for hundreds of investments, including digital assets. I received a B.S. in [REDACTED] [REDACTED], and an M.S. in [REDACTED].

5. Appendix A to this report contains my curriculum vitae with more details about my professional background. [REDACTED]  
[REDACTED]. I have been assisted by additional staff members of Integra to analyze data and documents related to this matter. My conclusions are my own and are based on my independent analysis and review of their work. Integra is compensated by the SEC at a rate of \$520 per hour (Engagement Director), \$330 per hour (Data Scientist), and \$235 per hour (Data Analyst) for their work.

### **1.3 Documents Considered**

6. Appendix B to this report contains a complete list of documents and data sources I relied upon to complete the analysis in this report. Included in that list are public statements and press releases from Ripple and company insiders and transaction data related to what Ripple advertises as its core software product—a product for financial institutions Ripple at some point called On-Demand Liquidity (“ODL”). I also reviewed and considered other documents and data sources, including trading data, blockchain data, technical documentation, and social media posts from websites like Twitter, Reddit, Quora, Bitcoin Talk, and XRP Chat.

## 2. Summary of Findings

7. Based on my review and analysis of Ripple's public statements made throughout the Issuance Period, documents, and design decisions made by Ripple and/or its founders, and on my professional experience in the digital asset space, I find the following:

8. The design of XRP as a fixed-supply coin<sup>2</sup>, as well as statements made by Ripple, were consistent with promoting an investment use case for XRP. Based on my experience in the digital asset space, I conclude that a reasonable purchaser would have had an expectation of future profit derived from the efforts of Ripple. Specifically, purchasers would have expected or hoped to profit by later re-selling their XRP at a higher price on a secondary market after XRP substantially increased in value. Due to basic supply and demand dynamics, any asset that has a variable price but fixed quantity tends to increase in value with increased demand for that asset. Therefore the design of the XRP blockchain using a fixed-supply coin for its native asset created a direct financial link between the price of XRP and the success of Ripple's efforts to develop and market software products that could gain users and attract high transaction volumes in XRP. Ripple also promoted a variety of its achievements, initiatives, and strategy that created a well-understood bullish thesis for the price of XRP and encouraged speculative investment flows into the digital asset. This promotional activity included advertising new partnerships with financial institutions, highlighting the experience and expertise of Ripple's team members, making public statements about why XRP was poised to increase in price, publishing positive commentary about the future growth trajectory of Ripple's products, and describing the plans for developing

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<sup>2</sup> Consistent with the standard usage in the crypto space, in this report 'coin' denotes the native or fundamental digital asset of a blockchain, e.g. XRP is a coin and the native asset for the XRP Ledger, and 'token' refers to a digital asset that is represented on a blockchain but that is not the native asset of that blockchain, e.g. COMP is a token on the Ethereum blockchain. In my report, my use of the terms 'coin' and 'token' is not intended to supply an opinion that the digital asset has the characteristics of a currency or any other particular classification of asset.



the XRP ecosystem<sup>3</sup>. Although Ripple’s development of the blockchain and broader XRP ecosystem, along with its promotion of the bull case for buying XRP, would not guarantee a profit, it would create the hope that a purchaser could passively earn profits by owning XRP while Ripple took steps to increase the value of the coin. In my experience as an investor and close observer of the digital asset space, the statements, actions, background, and competence of the founders and companies that create and support a blockchain project are extremely important to the decision-making process of purchasers of digital assets.

9. Based on Ripple’s public statements, the design of XRP as a fixed-supply variable-price coin, and the creation of the XRP escrow accounts, I also conclude that there are certain elements in Ripple’s and its founders’ design of XRP, the XRP Ledger, and a variety of software products that appealed more to a purchaser of XRP interested in making a profit than to financial institutions seeking to embrace Ripple’s stated vision of utilizing XRP as a bridge asset for cross-border asset transfers. Financial institutions desiring a solution for international wire transfers and other cross-border payment mechanisms would be better served by a variable-supply, fixed price solution, such as offered by fiat currency. Using XRP to complete cross-border payments requires two exchange transactions (from the source currency to XRP and from XRP to the destination currency) and involves paying the fees and trading losses (i.e. “slippage”<sup>4</sup>) associated with both of those transactions. If both trades are not conducted simultaneously or if an institution needs to carry an inventory of XRP, this approach also

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<sup>3</sup> In this report “ecosystem” refers broadly and collectively to all the software, people, and organizations who are involved with a blockchain project, such as retail investors, institutional investors, miners, software developers, software products, companies, merchants, trading platforms and market makers.

<sup>4</sup> “Slippage” is a trading term referring to trading losses incurred from executing trades against a bid-ask spread; it is the difference between the displayed market price of a trade and the actual price upon which the trade was executed. Slippage is generally higher i) in less liquid markets and ii) when larger trades are executed.

involves tying up capital in a volatile asset with an uncertain future price that has nothing to do with the source or destination currencies intended to be transmitted abroad.

### **3. Background**

#### **3.1 Digital Assets**

10. Digital assets, such as XRP, are assets wherein transactions or account balances involving those assets are recorded and maintained on digital ledgers using blockchain technology. Cryptographically-signed transactions denominated in these digital assets are validated and grouped together into “blocks,” or in the case of XRP these blocks are called “ledgers.” A “blockchain,” also called the “XRP Ledger” in the case of the digital ledger on which XRP balances and transactions are maintained and recorded, comprises a chronological collection of successive blocks that have been accepted by a software-defined consensus mechanism. This blockchain data is typically stored for the collective use of anyone who wishes to interact with the data or transaction history associated with a given digital asset. The primary digital asset that is recorded on a given blockchain is referred to as that blockchain’s “native asset.” For example, Bitcoin (“BTC”) is the native asset of the Bitcoin blockchain and XRP is the native asset of the XRP Ledger.

11. Each blockchain has different fundamental characteristics related to the extent to which it is: 1) decentralized, i.e. controlled, operated, and governed by a distributed collection of independent people and organizations; 2) permissioned, i.e. restricted or freely accessible for use by any person or organization; 3) secure, i.e. resistant to fraudulent or invalid transactions. The transaction speed and capacity of the blockchain, among other properties, also differ from one blockchain to another as a result of making tradeoffs in this design space.



12. Blockchains may provide computational features beyond just the record-keeping function of maintaining a digital asset ledger. For example, the Ethereum blockchain includes “smart contracts” which are software-defined applications with code stored directly on the blockchain. Smart contracts contain instructions for a wide range of tasks, including automating financial transactions between parties, storing data on the blockchain, and defining new digital tokens which are themselves digital assets. The XRP blockchain includes additional functionality for “IOUs”, which are liabilities issued by private third-party entities (referred to by Ripple as “gateways”) and denominated in a wide range of underlying fiat currencies or digital assets.

### **3.2 Trading Platforms**

13. Digital assets are often traded in public marketplaces, also called “exchanges” or “trading platforms.” Some popular examples of digital asset trading platforms are Coinbase, FTX, and Bitstamp. On these platforms, digital assets may be traded for fiat currencies (i.e. government-issued currencies such as the U.S. Dollar or the British Pound) or other digital assets. “Centralized exchanges” carry out this trading task on a private server, without recording trades directly on the blockchain. “Decentralized exchanges,” on the other hand, record all trades directly on the blockchain, making every trade publicly viewable. In the case of the XRP blockchain, both types of trading platforms, along with alternate trading venues such as futures and derivatives markets, are components of the overall ecosystem.

## **4. Ripple Platform Overview**

### **4.1 History of Ripple, XRP, and Product Offerings**

14. The predecessor to Ripple was founded in 2012 as a technology company in the blockchain space. Also in 2012, the XRP blockchain was released to the public and went live for



the first time with a maximum supply of 100 billion XRP created.<sup>5</sup> Of this 100 billion XRP, 80 billion XRP was distributed to Ripple and 20 billion XRP was distributed to several key individuals.<sup>6</sup>

15. In the early years, Ripple released products geared towards prospective individual users and traders. In 2013, Ripple released an iPhone app called the Ripple Client which enabled individuals to send and receive XRP as well as other assets such as BTC and USD.<sup>7</sup> After several upgrades, Ripple Client was rebranded in 2014 as Ripple Trade, with Ripple recognizing that “Trading has rapidly become the number one use case of Ripple.”<sup>8</sup> This trading predominantly involved buying and selling XRP, as can be seen in Figure 1 which shows that the top three markets on the XRP Ledger circa February 2014 were the XRP/USD, XRP/CNY and XRP/BTC trading pairs. The screenshot shown in Figure 1 is from the RippleCharts product that Ripple “revamped” in February 2014, which at the time provided detailed trading data including real-time XRP prices and a real-time feed of trades executed. When the revamp was announced, Ripple also noted that it sought to design its products around the trading use case for XRP, noting, “To revamp RippleCharts from the inside out, we solicited feedback from Ripple’s lively **trading** community. [emphasis added]”<sup>9</sup>

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<sup>5</sup> Ripple. Q3 2019 XRP Markets Report (2019). <https://ripple.com/insights/q3-2019-markets-report/>.

<sup>6</sup> Ripple. Answer of Defendant Ripple Labs, Inc. to Plaintiff’s First Amended Complaint (2021). Page 16, paragraph 46.

<sup>7</sup> Ripple. Inside the Code of Ripple Client: the Newest Mobile Payment App for iOS (2013). <https://ripple.com/insights/inside-the-code-of-ripple-client-the-newest-mobile-payment-app-for-ios/>.

<sup>8</sup> Ripple. Introducing the New Ripple Trade Client (2014). <https://ripple.com/insights/introducing-the-new-ripple-trade-client/>.

<sup>9</sup> Ripple. RippleCharts Revamp (2014). <https://ripple.com/insights/ripplecharts-revamp/>.

**Figure 1. “Top Markets” from RippleCharts circa February 2014<sup>10</sup>**



16. Starting in 2015 and over the following six years Ripple rolled out a series of software products aimed at facilitating the transfer of funds for institutional financial organizations. In October 2015 Ripple introduced the Interledger Protocol, a product that aimed to facilitate “efficient payments across payment networks” among banks and other financial institutions.<sup>11</sup> Next, the RippleNet Committee was announced, laying the foundation for various products geared towards global payments problems.<sup>12</sup> In 2017 xCurrent was launched as the common messaging technology for RippleNet and utilized the Interledger Protocol<sup>13</sup>. xVia was launched the same year to provide an API<sup>14</sup> for payment originators to interface with RippleNet banking partners. In October 2018 xRapid was launched. Later re-named to On Demand

<sup>10</sup> *ibid.*

<sup>11</sup> Ripple. Implementing the Interledger Protocol in Ripple (2015). <https://ripple.com/insights/implementing-the-interledger-protocol/>.

<sup>12</sup> Ripple. RippleNet. <https://ripple.com/ripplenet/>. See also Ripple’s “Our Story” page at <https://ripple.com/company/> and additional background about the RippleNet Committee at <https://ripple.com/ripplenet-committee/>.

<sup>13</sup> Ripple. xCurrent (2017). [https://ripple.com/files/xcurrent\\_brochure.pdf](https://ripple.com/files/xcurrent_brochure.pdf).

<sup>14</sup> API stands for “application programming interface” which is a set of standards or protocol that enables computers or software systems to communicate with each other through a shared interface.

Liquidity (ODL), the xRapid product was designed to facilitate cross-border transactions between financial institutions by using XRP as a bridge currency.<sup>15</sup>

#### **4.2 Overview of ODL Usage**

17. ODL, originally called xRapid, has been a cornerstone of an effort by Ripple to create a commercially successful product that utilized XRP as a required asset.<sup>16</sup> ODL was intended to facilitate cross-border transactions between money transmitters' domestic and foreign accounts by coordinating a three-step process: 1) trading XRP in exchange for the source fiat currency (i.e., buying XRP and selling the source currency), 2) transferring XRP from the source country to the destination country on the XRP Ledger, and 3) trading XRP in exchange for the destination currency (i.e., selling XRP and buying the destination currency).

18. The overall effect of these steps is to exchange the source currency for the destination currency and to send money from the source country to the destination country. Figure 2 illustrates the flow of assets involved with an ODL transaction. In this example a money transmitter uses ODL to complete a remittance payment from the United States to Mexico on behalf of retail customers. The money transmitter trades on a trading platform with a market maker in each country.

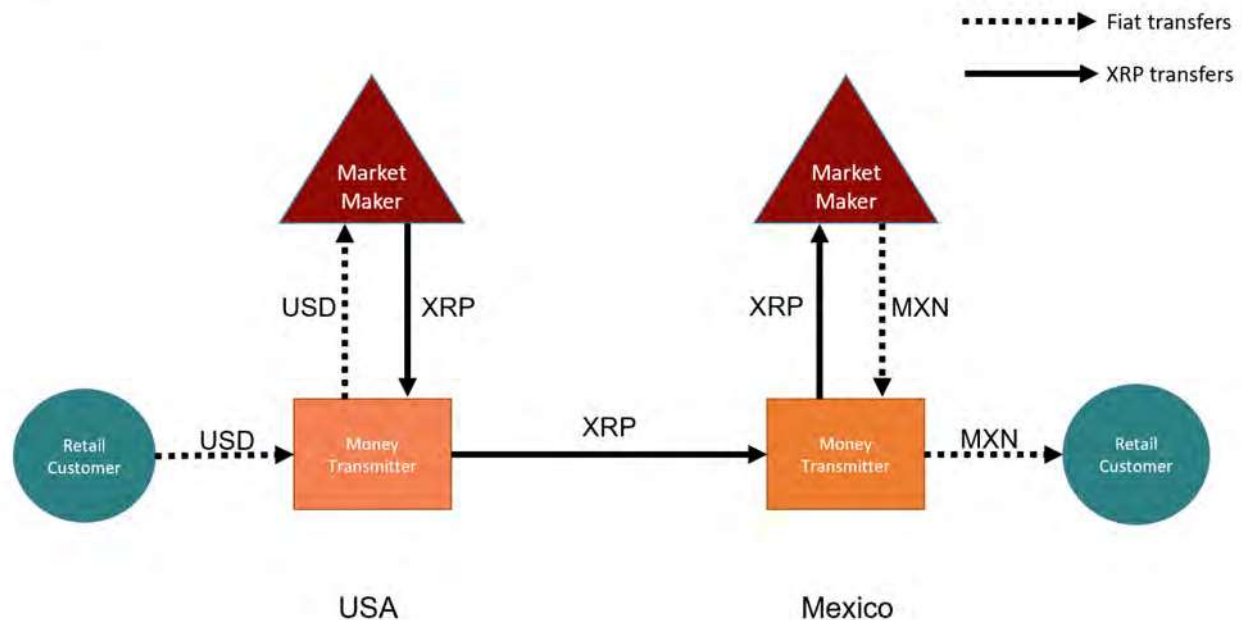
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<sup>15</sup> Ripple. Ripple Highlights Record Year, xRapid Now Commercially Available (2018). <https://ripple.com/insights/ripple-highlights-record-year-xrapid-now-commercially-available/>.

<sup>16</sup> Ripple. On Demand Liquidity (2021). <https://ripple.com/rippletnet/on-demand-liquidity/>.



**Figure 2. Example of ODL Transaction for Remittance Payment Between USA and Mexico.**



19. Ripple promoted the growth of ODL users and transaction volumes. Figure 3 shows an excerpt from a 2019 announcement, where Ripple highlights growing usage trends for ODL.<sup>17</sup>

**Figure 3. Excerpt from November 6, 2019 Announcement on the Ripple Website.**

In less than a year since the commercialization of ODL, we have seen tremendous growth and customer interest with two dozen customers signed on to use the product. Some of the notable customers committed to using ODL include MoneyGram, goLance, Viamerica, FlashFX and Interbank Peru. There have been more than 7x the number of transactions using ODL from the end of Q1 to the end of October.

20. The transaction volumes processed through ODL rose very quickly throughout the second half of 2019 and the first half of 2020, and nearly all this growth was due to a single customer, MoneyGram. Ripple took an ownership stake in MoneyGram in 2019, and the two companies put an agreement in place for MoneyGram to use ODL for some of its cross-border

<sup>17</sup> Ripple. RippleNet Growth: Announcing More Than 300 Customers (2019). <https://ripple.com/insights/ripplet-growth-announcing-more-than-300-customers/>.

transactions. Ripple subsidized MoneyGram's ODL transaction activity with payments in XRP that began at 2.5% of MoneyGram's ODL transaction volumes, with different subsidy levels at different volume tiers. This initial percentage depended on achieving certain volume targets, and the total subsidy agreement had a maximum payout of \$110 million.<sup>18</sup> Since every ODL transaction required MoneyGram to potentially lose money to fees and slippage by completing two exchanges on two different trading platforms, Ripple provided additional subsidies to MoneyGram. As such, MoneyGram reports that it received \$61.5 million in "market development fees" from Ripple in 2019 and 2020.<sup>19</sup>

21. The total monthly ODL transaction volumes starting at the commencement of the ODL product launch<sup>20</sup> are shown in Figure 4, along with the ODL transaction volumes made by MoneyGram. This chart shows that MoneyGram was responsible for nearly all ODL activity. Starting in June 2020 MoneyGram significantly reduced its ODL transactions, and overall ODL volumes fell sharply as a result.

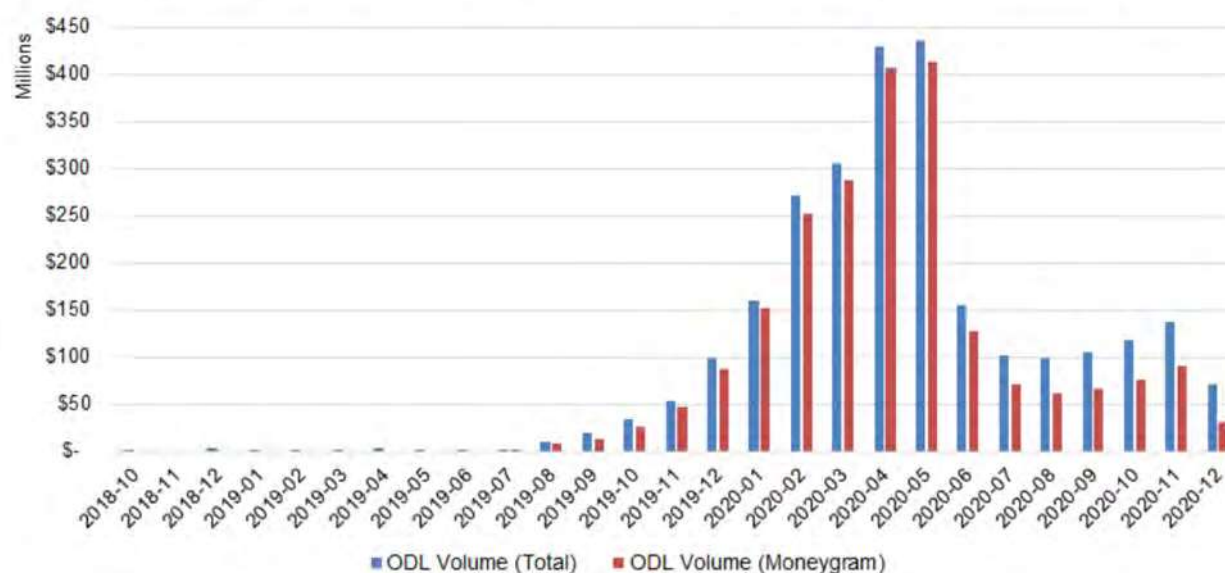
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<sup>18</sup> Ripple. Metric - Work Order (Execution Version).pdf (2019). Page 5.

<sup>19</sup> MoneyGram. MoneyGram International Reports Fourth Quarter and Full-Year 2020 Financial Results (2021). <https://ir.moneygram.com/news-releases/news-release-details/moneygram-international-reports-fourth-quarter-and-full-year-5>.

<sup>20</sup> ODL was launched in October 2018 during Ripple's 2018 Swell Conference (See: <https://ripple.com/insights/the-ripple-drop-on-the-ground-at-swell-2019/>).

**Figure 4. Monthly ODL Volumes of All Transactions and MoneyGram Transactions**



22. By subsidizing MoneyGram to induce ODL activity, Ripple successfully created a pattern of quickly accelerating product growth throughout the period from June 2019 to June 2020. The rapid growth of ODL was an important aspect of Ripple’s bull case (“bull case” refers to an optimistic thesis for why an asset will appreciate in price) for purchasing XRP. In the Q4 2019 Market Report, Ripple highlighted this product growth by saying: “In 2019, dollar value transacted through ODL increased more than a hundred times between Q1 and Q4, and specifically from Q3 to Q4 by 550% ... showcasing high customer demand for leveraging digital assets, specifically XRP, in cross-border transactions.”<sup>21</sup>

## 5. Features of XRP Coin Economics and Suitability as a Bridge Asset

### 5.1 XRP’s Fixed-Supply Cap Allows Purchasers to Profit from Ripple’s Success

23. All else equal, for any digital asset with a fixed-supply cap, increased demand for the coin increases the price of the coin. This is a basic economic result of supply and demand.

<sup>21</sup> Ripple. Q4 2019 XRP Markets Report (2020). <https://ripple.com/insights/q4-2019-xrp-markets-report/>.



XRP was deliberately created with a maximum fixed-supply cap of 100 billion coins along with a variable price dictated by market forces. The total supply of coins essentially never changes,<sup>22</sup> while the price has historically fluctuated significantly over time. The anticipated use of Ripple's ODL product by financial institutions would tend to increase the demand for and price of XRP, all else being equal. Other drivers of increased appetite for holding XRP include speculative or investment-driven demand for the coin, as well as individuals or businesses choosing to hold an inventory of XRP to make transfers directly in XRP. Due to the fixed-supply cap, all these sources of increased demand to hold XRP would tend to push up the price of XRP.

24. The fixed-supply, variable price coin model takes on further importance because of Ripple's efforts to promote the growth of the XRP ecosystem and to develop financial products that use XRP to conduct transactions. Based on my experience investing in digital assets, a reasonable purchaser of XRP would understand that if Ripple's ambitious cross-border payment business were successful, the ensuing demand for XRP would tremendously increase the price of XRP.

25. Ripple directly and publicly made the case for this relationship between increased demand for XRP and the future price of XRP. In an interview with Bloomberg Technology, for example, Garlinghouse ties Ripple's efforts to provide payments solutions with increased demand and higher prices, all enabled by XRP's fixed-supply model:

*When Ripple uses XRP we're solving a payments problem. I believe that the more utility you draw, the more demand you're going to drive. And for most of these digital assets you have fixed supply. If you have fixed supply and increasing demand it's going to drive price up.*<sup>23</sup>

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<sup>22</sup> Technically, a trace amount of XRP is destroyed as a fee in each transaction, which means that the total supply of XRP is currently decreasing at a very slow and negligible rate.

<sup>23</sup> YouTube. Ripple CEO Garlinghouse Sees Real Value in Bitcoin at 2:06. <https://www.youtube.com/watch?v=akLQEacOT3w&t=126s>. (2017).

In another statement to CNBC, Garlinghouse confirms Ripple's commitment to increasing the demand for XRP, stating, "We're driving velocity and demand of XRP."<sup>24</sup>

26. Potential purchasers of XRP would have understood the simple economics behind the message being promoted by Ripple on this subject: XRP, as designed, provided a mechanism for passive XRP owners to benefit financially from Ripple's success as a provider of financial service products built on the XRP Ledger,<sup>25</sup> as a developer of the XRP ecosystem, and as a driver of demand for XRP.

## **5.2 Alternative to Fixed-Supply Cap Model**

27. The fixed-supply model used by XRP is the opposite of the fixed-price model of a fiat currency, such as U.S. Dollars, or a "stablecoin," which is a digital asset designed to maintain a pegged value against such a fiat currency. A stablecoin issuer takes active managerial steps to ensure that the available token supply grows or shrinks to match the demand and keeps the price stable over time. There are several significant advantages to using a fiat currency or a stablecoin for cross-border currency transfers.

28. First, the variable price of XRP means that two cross-asset trades are always required to conduct a single cross-border payment: one from the source currency to XRP, and one from XRP to the destination currency. Both of these exchange transactions incur possible fees and slippage, including from price spreads between what buyers and sellers are willing to bid and offer. However, when using a traditional cross-border payment system there is a single foreign exchange transaction, for example from U.S. Dollars to Mexican Pesos. This currency

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<sup>24</sup> CNBC. Ripple is sitting on close to \$80 billion and could cash out hundreds of millions per month — but it isn't (2016). <https://www.cnbc.com/2018/01/16/why-ripple-is-not-cashing-out-its-xrp-holdings.html>.

<sup>25</sup> Although some Ripple products did not use XRP, this report focuses on what Ripple communicated publicly, including its assertions that usage of its products by financial institutions would ultimately lead to greater demand for XRP. This is further discussed in Section 7.



exchange can be accomplished with a single trade on the interbank market for extremely low fees and slippage due to the deep liquidity in those markets.<sup>26</sup> Even a stablecoin solution only requires one trade between assets that fluctuate against one another such as a U.S. Dollar stablecoin and a Euro stablecoin. And, moving between U.S. Dollars and a U.S. Dollar stablecoin can be accomplished with no fees.<sup>27</sup> Ripple's CTO David Schwartz discussed this shortcoming of using XRP for cross-border payments in a post on XRP Chat on November 11, 2016: "So the last piece [referring to 'obstacles to using XRP for cross-border payments'] will be bringing the spreads down. To go from X [to] Y directly, you pay one spread. To go X [to] XRP [to] Y you pay two spreads."<sup>28</sup>

29. Second, anyone buying XRP to facilitate cross-border payments would have to bear the substantial price volatility of XRP.<sup>29</sup> These volatility-related costs could be large compared to the margins earned in the course of fulfilling remittance or cross-border payment transactions. In fact, banking regulators have determined that the volatility of non-stablecoin digital assets like XRP warrant the maximum possible risk weighting for the purpose of calculating capital requirements.<sup>30</sup> This outright gamble on the XRP price is not a desirable activity for traditional financial institutions or market makers with conservative balance sheets (meaning that those institutions prefer to avoid holding risky assets).

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<sup>26</sup> From January 3, 2007 to January 3, 2008, the daily realized bid-ask spread for USD to MXN was 0.0174%, and the daily realized bid-ask spread for USD to EUR was 0.0045%. *See* Journal of Banking and Finance, Order flow, bid-ask spread and trading density in foreign exchange markets at 600 (2012). <https://www.sciencedirect.com/science/article/pii/S0378426611002603>.

<sup>27</sup> Circle. Circle USDC Fee Schedule (2018). <https://support.usdc.circle.com/hc/en-us/articles/360015471331>.

<sup>28</sup> XRP Chat. Fortune's Poll about XRP, BTC & ETH at 2 (2016). <https://www.xrpchat.com/topic/2409-fortunes-poll-about-xrp-btc-eth/page/2/>.

<sup>29</sup> From January 1, 2018 to October 15, 2020, the average annualized volatility for XRP based on 1-month volatility was high at 65.1%. *See* Journal of Empirical Finance, Volatility Cascade in Cryptocurrency Trading at 252 (2021). <https://www.sciencedirect.com/science/article/pii/S092753982100030X>.

<sup>30</sup> The Basel Committee on Banking Regulation has recommended a 1,250% risk weighting for non-stablecoin digital assets such as XRP, meaning banks must retain additional capital to cover the full value of their XRP holdings. *See* Basel Committee on Banking Regulation, Prudential Treatment of Cryptoasset Exposures (2021).



### **5.3 Perspective of a Reasonable Purchaser with Respect to XRP's Fixed-Supply Model**

31. The correlation between the success of the platform and price of the coin is fantastic for investment-oriented purchasers of XRP, but not for the purchasers who are exclusively interested in the utility use of the cross-border payment product. From the perspective of a reasonable investment-oriented purchasers, the fixed-supply and variable-price model provides a direct link between 1) the success of Ripple's efforts to build the XRP ecosystem and stimulate demand for XRP and 2) the financial performance of the purchaser's investment in XRP. From the perspective of a utility-oriented purchaser, as discussed above, the fixed-supply and variable price model of XRP presents significant disadvantages. Exchanging directly between two fiat currencies would alleviate all of these issues, and these shortcomings help to explain why ODL has been heavily subsidized by Ripple.

## **6. XRP Sale and Escrow Mechanics**

### **6.1 Process to Sell on Open Markets Through Programmatic Sales**

32. Ripple has engaged in sales of XRP into the open market to provide funding for the company. In a 2019 interview with the Financial Times, Garlinghouse acknowledged "[w]e would not be profitable or cash flow positive [without selling XRP]."<sup>31</sup> Ripple regularly reported the amount of its XRP sales in its quarterly market reports starting in 2017. These ongoing sales of XRP in part provided the necessary capital to build Ripple's products, grow the ecosystem and sign new partners, as described in more detail in Section 7.6.

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<sup>31</sup> Financial Times. The art of redefining success, MoneyGram and Ripple edition (Updated) (2020). <https://www.ft.com/content/3f2fb6bc-e17a-4179-a0a4-152a3e0db1d6>.

33. Many of Ripple’s XRP sales were “programmatic sales” executed by market makers that had partnered with Ripple, meaning that a third party was responsible for selling the XRP into the open market on behalf of Ripple using proprietary trading algorithms. For example, in its Q3 2017 market report Ripple announced that “the company sold \$71.5 million worth of XRP programmatically as a small percentage of overall exchange volume.”<sup>32</sup> The highest reported quarterly XRP programmatic sales totaled \$251.51 million in Q2 2019<sup>33</sup>, while the lowest reported figure was \$1.75 million in Q1 2020.<sup>34</sup>

34. Selling large amounts of XRP – and increasing the supply of XRP to the market – has the potential to exert downward pressure on the price of XRP, and Ripple made sure to publicly mention that it conducted its programmatic sales in such a way as to minimize this effect. Ripple described the nature of its programmatic sales of XRP in the Q2 2019 XRP Markets Report:

*“Ripple’s programmatic XRP sales have been done with the goal of minimizing market impact. The company did this through limiting XRP programmatic sales to what it considers a small percentage of traded volume, which was executed across multiple exchanges.”<sup>35</sup>*

35. As can be seen in the above excerpt, Ripple’s programmatic sales of XRP were made to the public “across multiple exchanges.” This means that Ripple did not limit its sales of XRP to the financial institutions that could be reasonably expected to use the ODL platform—to the contrary, based on the pseudonymous nature of the trading venues where XRP was sold to the public, Ripple likely did not know who its counterparties were in those XRP sales.

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<sup>32</sup> Ripple. Q4 2017 XRP Markets Report (2018). <https://ripple.com/insights/q4-2017-xrp-markets-report/>.

<sup>33</sup> Ripple. Q2 2019 XRP Markets Report (2019). <https://ripple.com/insights/q2-2019-xrp-markets-report/>.

<sup>34</sup> Ripple. Q1 2020 XRP Markets Report (2020). <https://ripple.com/xrp/q1-2020-xrp-markets-report/>.

<sup>35</sup> Ripple. Q3 2019 XRP Markets Report (2019). <https://ripple.com/insights/q3-2019-markets-report/>.



## **6.2 Over-the-Counter Sales**

36. In addition to the programmatic sales into the open market, Ripple reported direct over-the-counter (OTC) sales of XRP to outside organizations. The Q1 2017 XRP Markets Report describes the nature of these sales: “In Q1 market participants purchased \$6.7MM directly from XRP II, LLC, Ripple’s registered and licensed money service business (MSB). These buyers tend to be institutional in nature and their purchases include restrictions that help mitigate the risk of market instability due to large subsequent sales.”<sup>36</sup>

37. There are two important things to note about these institutional purchases. First, at times they include sales restrictions that help mitigate the risk of downward price pressure due to large subsequent sales into the open market. Second, these purchases are significant because they signaled institutional interest in the XRP ecosystem which would be indicative of XRP’s broader capital market potential. These points would appeal to an individual purchaser with a long-term investment mindset, and were repeatedly communicated by Ripple in the XRP Markets Reports.

## **6.3 Compensating Partners in XRP**

38. Creating new partnerships with financial institutions was a key aspect of the bull case for XRP. Ripple’s compensation to attract and maintain some of those partnerships was publicly known to be made in XRP.<sup>37</sup> Ripple’s distributions of XRP to business partners were another mechanism (in addition to Ripple’s sales of XRP described in the XRP Market Reports) by which Ripple effectively sold XRP into the broader XRP ecosystem.

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<sup>36</sup> Ripple. Q1 2017 XRP Markets Report (2017). <https://ripple.com/insights/q1-2017-xrp-markets-report/>.

<sup>37</sup> Ripple. Ripple Rolls Out \$300M RippleNet Accelerator Program to Grow Volume and XRP Utility (2017). <https://ripple.com/insights/ripple-rolls-300m-ripplet-accelerator-program-grow-volume-xrp-utility/>.



39. MoneyGram regularly updated its investors in public filings to the U.S. Securities and Exchange Commission about the compensation it received from Ripple, and that the compensation was in the form of XRP payments. In a February 28, 2020, 10-K filing, MoneyGram said “In June 2019, we entered into a commercial agreement with Ripple to utilize Ripple’s ODL platform (formerly known as xRapid), as well as XRP, to facilitate cross-border non-U.S. Dollar exchange settlements. The company is compensated by Ripple in XRP for developing and bringing liquidity to foreign exchange markets.”<sup>38</sup> Another public filing issued by MoneyGram four days earlier specified that the value of this compensation in U.S. Dollars was \$8.9 million during the fourth quarter of 2019.<sup>39</sup> MoneyGram also stated in an interview to TheBlock, a news site covering digital assets, that the XRP earned as compensation from Ripple was sold as soon as it was received.<sup>40</sup> Since Ripple gave XRP to MoneyGram, and MoneyGram sold that XRP to the open market via digital asset trading platforms, the overall effect of these XRP payments was to sell additional XRP into the open market in exchange for cash.

40. In addition to partnerships forged with financial institutions, some Ripple partnerships with other, non-financial, organizations were also completed by transferring XRP. Coil, a web platform allowing content creators to be compensated for their content through micropayments, received a grant of 1 billion XRP from Ripple that was worth approximately

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<sup>38</sup> MoneyGram. Form 10-K 2019 Annual Report at 44 (2020). <https://ir.moneygram.com/financials-and-filings/annual-reports>.

<sup>39</sup> MoneyGram. Form 8-K Current Report Issued February 24, 2020 (2020). <https://ir.moneygram.com/financials-and-filings/annual-reports>.

<sup>40</sup> The Block. ‘We sell XRP as soon as we receive it,’ says MoneyGram on Ripple incentive payments (2020). <https://www.theblockcrypto.com/daily/58860/we-sell-xrp-as-soon-as-we-receive-it-says-moneygram-on-ripple-incentive-payments>.

\$265 million at the time the grant was announced.<sup>41</sup> Coil's press release stated that the XRP would be "deployed towards driving adoption of XRP and the InterLedger Protocol."<sup>42</sup>

#### **6.4 Escrow**

41. In December 2017 Ripple created 55 escrow accounts, simply called "escrows" on the XRP blockchain. As described on the XRP Ledger Blog, each escrow held 1 billion XRP owned by Ripple, and exactly one escrow would release its stored XRP every month for the following 55 months.<sup>43</sup> This action effectively locked away 55% of the total supply of XRP and reduced the circulating float (meaning the amount of coins immediately available to be sold) of XRP.

42. Over the following years, Ripple continued to place a substantial amount of the coins back into new escrows as soon as they were released each month, and these actions were announced by Ripple and visible to the public. As of December 22, 2020, Ripple had replaced 29.2 billion XRP that were already released back into escrows again. In addition to the 19 billion XRP still remaining from the original creation of the escrows in 2017, this resulted in a total of 48.2 billion XRP locked in escrows on December 22, 2020.<sup>44</sup>

43. Although Ripple continued to sell XRP into the open market on a regular basis, this significant restriction of the XRP supply would have greatly encouraged potential investment-oriented purchasers of XRP to earn a speculative investment profit with their

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<sup>41</sup> Coindesk. Ripple to Give Away 1 Billion XRP in Massive Bid to Fund Online Content (2019).

<https://www.coindesk.com/ripple-is-giving-away-1-billion-xrp-in-massive-bid-to-fund-online-content>.

<sup>42</sup> PR Newswire. Ripple's Xpring Makes 1 Billion XRP Grant to Drive XRP Adoption and Advance Coil's Monetized Platform for Creators (2019). <https://www.prnewswire.com/news-releases/ripples-xpring-makes-1-billion-xrp-grant-to-drive-xrp-adoption-and-advance-coils-monetized-platform-for-creators-300902194.html>.

<sup>43</sup> XRP Ledger Blog. An Explanation of Ripple's XRP Escrow (2017). <https://ripple.com/insights/explanation-ripples-xrp-escrow/>.

<sup>44</sup> XRParcade. Ripple Escrow: Unraveling the Mystery (2020). <https://www.xrparcade.com/2020/03/02/ripple-escrow-unraveling-the-mystery/>.



purchase. Indeed, when the escrow was announced, Ripple CEO Brad Garlinghouse wrote about how this would benefit “investors”:

*Today we are permanently removing that uncertainty by committing to place 55 billion XRP into a cryptographically-secured escrow account by the end of 2017. By securing the lion’s share of our XRP, investors can now mathematically verify the maximum supply of XRP that can enter the market.<sup>45</sup>*

The reduced float would tend to increase the price of XRP, directly by reducing selling pressure and indirectly by assuring the public that there was an upper limit to how much XRP would be sold by Ripple on the open market through trading platforms in any given month going forward. Ripple’s ongoing replacement of released XRP into new escrows reinforced the positive effect of this reduction in circulating supply by showing a commitment to keeping those coins away from trading platforms for even longer.

## **6.5 XRP Buyback Purchases Made by Ripple**

44. At times Ripple communicated to the public that it would purchase XRP with open market transactions, an action that would effectively support the price of XRP. The fundraising activities described in Section 6.1 and Section 6.2 involved repeated sales of XRP, so it is noteworthy that Ripple also signaled to the market at times that it would do the opposite by purchasing XRP.

45. In the Q2 2020 XRP Markets Report Ripple announced buybacks with the following statement: “A healthy, orderly XRP market is required to minimize cost and risk for customers, and Ripple plays a responsible role in the liquidity process...Ripple has been a buyer in the secondary market and may continue to undertake purchases in the future at market prices.”<sup>46</sup>

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<sup>45</sup> Ripple. Ripple to Place 55 Billion XRP in Escrow to Ensure Certainty of Total XRP Supply (2017). <https://ripple.com/insights/ripple-to-place-55-billion-xrp-in-escrow-to-ensure-certainty-into-total-xrp-supply/>.

<sup>46</sup> Ripple. Q2 2020 XRP Markets Report (2020). <https://ripple.com/insights/q2-2020-xrp-markets-report/>.



46. The next quarterly report also included a description of Ripple’s ongoing plans to purchase XRP. The section of the report called ‘XRP Purchases’ stated: “As indicated in the Q2 2020 XRP Markets Report, Ripple is purchasing – and may continue to purchase – XRP to support healthy markets.”<sup>47</sup>

47. Ripple’s buyback activity would increase demand for and therefore tend to increase the price of XRP and to instill confidence in other purchasers that Ripple will continue to support the price of the coin going forward, thereby helping to sustain an orderly secondary market for XRP. Although the buyback activity would not have mattered to purely utility-oriented purchasers of XRP, buybacks are very important signals for investment-oriented purchasers. Open market purchases, and the public communications about those purchases, alter the potential risk and reward of an investment in XRP by increasing buying pressure on the coin and by reducing the probability and severity of a possible crash in the price of XRP. Like the escrow accounts described in Section 6.3, the buyback activities executed by Ripple would also have the effect of reducing the effective float of the coin.

## **6.6 Perspective of a Reasonable Purchaser with Regards to Ripple’s XRP Sales and Escrow**

48. The manner and mechanism of Ripple’s ongoing sales, distribution, escrow, and buybacks of XRP would have been extremely important to a potential investment-oriented purchaser of XRP for the following reasons: 1) the programmatic sales comprised an ongoing fundraising process that provided necessary capital for Ripple to develop the XRP ecosystem, as described further in Section 7.6 of this report; 2) the direct sales to business partners as well as XRP payments to companies like MoneyGram brought new financial institutions into the XRP

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<sup>47</sup> Ripple. Q3 2020 XRP Markets Report (2020). <https://ripple.com/insights/q3-2020-xrp-markets-report/>.

ecosystem; 3) the lock-up provisions as well as the ongoing public escrow activities, both publicized by Ripple, amounted to public commitments to reduce the float of XRP and reduce the risk of significant selling pressure via XRP being dumped on markets; and 4) buybacks of XRP, first announced in 2020, by Ripple placed direct upward pressure on the price of XRP and reduced the float of XRP. All of these factors supported the bull case, and price, of XRP.

49. On the other hand, a reasonable purchaser of XRP that is exclusively considering the utility use of the coin would be less concerned with some of these heavily promoted sales and distribution mechanisms. For example, buybacks of XRP or an escrow mechanism to restrict the supply of XRP by more than half of the total supply do not benefit a purely utility-oriented purchaser. The announced resale lock-ups in general are similarly neutral for this category of purchaser, and would actually be a negative factor for the particular institutional holders of XRP who are subject to the lock-ups and face constraints on their ability to sell XRP. The one aspect of Ripple's distribution of XRP that unequivocally benefits a purchaser of XRP for cross-border payments was the existence of direct XRP subsidy payments to such purchasers, e.g., MoneyGram, to incentivize their use of XRP and Ripple products.

## **7. Ripple Communications and Promotional Statements**

### **7.1 Promotional Factors Considered by an Investment-Oriented Purchaser**

50. Based on my experience as an investor in digital assets as well as my close observation of the digital asset space, I believe that a reasonable investment-oriented purchaser of XRP would consider at least the following factors when purchasing XRP: 1) an explanation of the investment bull case for the digital asset, i.e. an explanation of the company's own view about why its digital asset will increase in value over time; 2) announcements of any important strategic partnerships; 3) descriptions of the qualifications of the team members who will



develop and manage the project; 4) the target addressable market for the platform or product; 5) plans for the use of funds being raised; and 6) plans to provide a liquid trading market for the digital asset. Ripple communicated about each of these topics extensively in public venues, which in my opinion had the effect of generating significant investor interest in purchasing XRP.<sup>48</sup>

51. This section considers, from the perspective of a reasonable investment-oriented purchaser of XRP, public statements made by Ripple. Ripple made public statements across various platforms, ranging from its own website, social media platforms, finance and digital asset news sites, and investor forums. Ripple's election to communicate with the public on this last venue – investor-oriented forums – suggests that Ripple targeted its communications to potential purchasers who were considering purchasing XRP as an investment. Such forums include:

- The 2018 Yahoo Finance All Markets Summit: Crypto, promoted as an event to “examine the growing market and investor interest in cryptocurrencies...[and] discuss crypto investing with CEOs, engineers, policy makers and legal experts.”<sup>49</sup> For this event, Ripple CEO Brad Garlinghouse was a highly anticipated speaker on the topic: “Beyond Bitcoin: Ripple and \$XRP.”<sup>50</sup>
- The 2017 CoinDesk Consensus: Invest conference, billed as “the world’s first digital asset investor outlook event...[which] offers attendees the chance to get connected with

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<sup>48</sup> Although these topics are of particular interest to purchasers of digital assets, this list is not exhaustive. Due to the presence of other factors in purchasing decisions, addressing these points does not guarantee an increase in price. Supply and demand, and therefore the prices, of speculative assets are driven by many complicated factors beyond the scope of this report.

<sup>49</sup> Yahoo Finance All Markets Summit: Crypto, February 7, 2018. <https://www.yahoo.com/news/yahoo-finance-markets-summit-crypto-february-7-2018-223531903.html>.

<sup>50</sup> *ibid.* Also, when Garlinghouse was introduced by the Yahoo Finance interviewer, “Brad here today is the CEO of Ripple. This is a company that has surely been at lot in the news recently. I have to say just anecdotally that as we’ve gone through this day and seen a lot of great speakers, a lot of terrific panelists, everyone keeps stopping me and asking, when’s Garlinghouse, when’s Garlinghouse?”



how to invest, store, trade and judge value in this new asset class.”<sup>51</sup> Ripple’s Head of XRP Markets, Miguel Vias, spoke at this event and when asked what advice he had for investors looking to “incorporate some crypto into their portfolio,” he encouraged the audience to consider digital assets where “the use case makes sense” and follows that by explaining the case for Ripple and XRP: “One of the reasons I joined Ripple is the XRP use case made a ton of sense to me...So for me it was simple – utility will drive value eventually to this because there's a company behind it that's pushing a particular use case and it makes sense.”<sup>52</sup>

- The 2020 Barron’s Cryptocurrency Investors’ Forum, which featured “essential conversations around the state and future of digital currency, and how to approach investing in this asset class.”<sup>53</sup> At this forum, Ripple VP of Global Institutional Markets Breanne Madigan spoke on the panel, “Weighting Crypto in a Portfolio,” and, similarly to Vias, suggested that investors seeking to enter to digital asset markets consider XRP.<sup>54</sup>
- Online forums specifically discussing the investment use case for XRP. Ripple CTO David Schwartz participated in several of these forums, including the “[XRP] Ripple Speculation Thread” on BitcoinTalk.com,<sup>55</sup> the “XRP Trading and Speculation” discussion forum on XRChat.com,<sup>56</sup> and multiple Q&A posts on Quora.com where he directly answered questions regarding the investment case for XRP.<sup>57</sup> For example, on

<sup>51</sup> Consensus: Invest, November 28, 2017. <https://events.bizzabo.com/consensusinvest>.

<sup>52</sup> YouTube. Trade Desk: Advancing the Asset. <https://youtu.be/jdFuiRVNUoM?t=2120> (2017).

<sup>53</sup> The Cryptocurrency Investor Forum, December 3, 2020. <https://barronscustomevents.com/grayscale>.

<sup>54</sup> Video interview of Breanne Madigan with Barron’s and Grayscale Investments’ “The Cryptocurrency Investor Forum” on December 3, 2020. See <https://barronscustomevents.com/grayscale> from 1:46:09 to 1:47:52.

<sup>55</sup> Examples include: <https://bitcointalk.org/index.php?topic=1381669.msg18859629#msg18859629> and <https://bitcointalk.org/index.php?topic=1381669.msg19787105#msg19787105>.

<sup>56</sup> An example is provide in the subsequent Section.

<sup>57</sup> Examples include: <https://www.quora.com/If-banks-use-Ripple-for-payments-but-don-t-need-to-buy-XRP-then-who-will-buy-XRP-and-why-will-its-price-increase-Does-it-make-any-sense-to-invest-in-XRP>,

Quora a potential investor in XRP asks, “If banks use Ripple for payments but don’t need to buy XRP, then who will buy XRP and why will its price increase? Does it make any sense to invest in XRP?” Schwartz answers by describing how Ripple’s strategy of building a payment system for financial institutions will increase the demand for XRP, which as described in Section 5.1 would increase the price of XRP. He writes, “If we’re successful with this strategy, and XRP is used as a settlement currency for some fraction of RippleNet payments, that could set up sources of demand for XRP...That’s just one way adoption of XRP as a settlement asset could cause significant increases in demand for holding XRP.”<sup>58</sup>

52. Ripple’s Insights blog, of which many posts are discussed in this section, was also directed, in part, towards purchasers considering XRP as an investment. In fact, on multiple occasions Ripple specifically refers to potential purchasers of XRP as an “investor” or “investors”.<sup>59</sup> For example, in a post from October 2017 titled, “10 Things You Need to Know About XRP”, Ripple lists reasons why XRP should be attractive relative to other digital assets such as “XRP is the most scalable digital asset”, “XRP is the best digital asset for payments” and “XRP scales faster than Bitcoin.”<sup>60</sup> Ripple ends the list with “10. It’s easy to buy” and then

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<https://www.quora.com/Are-those-who-invested-in-XRP-in-possible-danger-of-losing-their-investments-as-Ripple-does-not-extend-exclusivity-to-XRP-on-its-network> and <https://www.quora.com/If-a-large-amount-of-banks-were-to-adopt-xrapid-and-started-using-xrp-how-would-that-impact-the-tokens-value>.

<sup>58</sup> Quora Post: If banks use Ripple for payments but don’t need to buy XRP, then who will buy XRP and why will its price increase? Does it make any sense to invest in XRP?” <https://www.quora.com/If-banks-use-Ripple-for-payments-but-don-t-need-to-buy-XRP-then-who-will-buy-XRP-and-why-will-its-price-increase-Does-it-make-any-sense-to-invest-in-XRP>.

<sup>59</sup> In addition to the following example, see also <https://ripple.com/insights/ripple-to-place-55-billion-xrp-in-escrow-to-ensure-certainty-into-total-xrp-supply/> (announcement of 55 billion XRP escrow by Garlinghouse) and <https://ripple.com/insights/bitstamp-now-trading-xrp/> (quotation from Miguel Vias, Head of XRP Markets at Ripple), both referenced in my report.

<sup>60</sup> Ripple. 10 Things You Need to Know about XRP (2017). <https://ripple.com/insights/10-things-need-know-xrp/>.



specifically addresses “individual investor[s]”, as seen in Figure 5,<sup>61</sup> providing a link that directed to a Ripple webpage<sup>62</sup> with a guide on where to purchase XRP.

**Figure 5. Screenshot from Ripple’s Insights Blog Post, “10 Things You Need to Know About XRP”**

**10. It’s easy to buy**

There are different ways to buy XRP depending on who you are. If you’re a financial institution, it’s best to contact Ripple directly. If you’re an individual investor, you’ve got [many ways to buy](#) – you can visit any one of the digital exchanges that lists XRP and do it that way.

**7.2 Ripple Communications on the Investment Use Case**

53. Ripple executives made statements linking the company’s efforts to increases in the price of XRP. As such, Ripple’s public statements reflected its view that XRP would make a good investment if Ripple succeeded in its vision to use XRP to disrupt the global payments system. Such communications would have appealed to potential purchasers who were interested in XRP as an investment.

54. Ripple executives made public statements on the XRP Chat online platform. XRP Chat is a social media website and one of the leading forums for discussion about XRP and Ripple. The most popular forum, by number of posts, on XRP Chat is the “XRP Trading and Price Speculation” forum which currently has over 200,000 posts discussing issues related to the trading and investment case for XRP, as noted in its sub-header: “Speculation about trading and price of XRP. Technical trading tips, fundamental analysis.”<sup>63</sup>

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<sup>61</sup> *ibid.*

<sup>62</sup> Ripple. XRP Buying Guide (2017). Archived version available at: <https://web.archive.org/web/20171211225351/https://ripple.com/xrp/buy-xrp/>.

<sup>63</sup> See <https://www.xrpchat.com/> and <https://www.xrpchat.com/forum/17-xrp-trading-and-price-speculation/>, accessed on August 18, 2021. The sub-header of the forum, “Speculation about trading and price of XRP. Technical trading tips, fundamental analysis,” points to the trading and investment use case of XRP. “Fundamental analysis” is the analysis of a company’s inherent business and financial model as pertains to its value and growth potential; in the context of this forum on XRP Chat and as seen in the proceeding example, this includes discussions about Ripple’s business model and its effect on the price of XRP.

55. On this forum, user “Vertigo2131” initiated a post titled, “Valuation Models - XRP The Digital Currency Vs. Ripple the Company” and asks how Ripple’s success might impact the valuation of XRP.<sup>64</sup> In response, David Schwartz, Ripple’s CTO representing himself as a “Ripple employee” and writing under his publicly known pseudonym “Joel Katz”,<sup>65</sup> provides a detailed, step-by-step response (Figure 6) explaining how the success of Ripple’s business model would translate into higher demand for XRP and thus higher XRP prices for those holding XRP as a speculative asset.

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<sup>64</sup> XRP Chat. Valuation Models – XRP The Digital Currency Vs. Ripple the Company (2017).

<https://www.xrpchat.com/topic/5280-valuation-models-xrp-the-digital-currency-vs-ripple-the-company/>.

<sup>65</sup> Schwartz’s Twitter profile (@JoelKatz) around the time of his engagement with this post contained the following information: “David Schwartz @JoelKatz Improving global settlement with blockchain tech. Chief Cryptographer at Ripple; one of the original architects of the XRP network.” *See*.

[https://web.archive.org/web/20170616010746if\\_/https://twitter.com/JoelKatz](https://web.archive.org/web/20170616010746if_/https://twitter.com/JoelKatz).



**Figure 6. David Schwartz's Response to Question Regarding the Impact of Ripple on XRP's Valuation.**

JoelKatz



Ripple Employee

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Posted May 25, 2017

Featured Comment Popular Post

Here's how I've been explaining it recently:

- 1) There's a business that Ripple has providing transaction processing software to banks. It can work without XRP and without any blockchain tech. It improves international payments because it uses end to end messaging to track payment progress, ensure all necessary compliance information is in the transaction in the first place, precisely knows the fees ahead of time, and provides prompt, reliable confirmation of delivery. This is a big enough improvement that banks will use it even if the actual money moves the same way it does now.
- 2) Ripple has built a public blockchain with a native asset. It has various nice features -- a distributed exchange, good governance, fast transactions, high transaction volume, native multisign, key rotation, payment channels, and so on.
- 3) The hard part about getting banks to use a blockchain isn't the blockchain, it's everything else. It's governance, compliance, integration with banking systems, and so on. our software does all that stuff, so if routing a payment through XRP is a penny cheaper, the bank can take it. Then we have to make XRP cheaper somewhere that matters.
- 4) We don't target the biggest corridors like USD → EUR because they're efficient. We target an inefficient, but fairly high volume, corridor. For example, EUR → INR. Market makers have very small profit margins, so even a small incentive to place good EUR ↔ XRP and XRP ↔ INR offers can beat what banks are getting now through the correspondent banking system.
- 5) Once we get one corridor, we hang other countries off each end of the corridor, expanding the reach of XRP.
- 6) Now, say you're a company like Seagate that pays out money all over the globe. If you have to make payments to five countries in our corridors, you'd rather hold one pile of XRP than five piles of different currencies. That increases demand.
- 7) Now, say you're a company like Apple with a huge pile of cash. If you want to snap up other assets cheap, you'll need to hold the asset the people selling want. If they're going into any of our corridors, they'll want XRP, so you would want to hold it.
- 8) If that succeeds, it could increase the price of XRP.
- 9) Ripple holds a huge pile of XRP and will be the dominant XRP holder for the foreseeable future. But we're primarily VC financed and we get revenue from selling software to banks. We don't use our XRP as a bank account but as a strategic weapon. (Though we do sell some for revenue, we just don't need to for salaries or to keep the lights on.)
- 10) Anyone who gets XRP from us as part of some deal with a lockup has their incentives aligned with ours. They want the long-term price of XRP to go up too.

I think that pretty much covers our vision. There is, of course, no guarantee of success. This is a pretty crazy thing we're trying to do. But we have 160 full time employees and have raised tens of millions of dollars. We've hired many amazing people, and our track record speaks for itself.

bitisbetter, Jasombre, TastySoda and 173 others

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56. In public statements, Garlinghouse has also made the case that Ripple's successful efforts could translate into higher XRP prices. For example, when the price of XRP increased dramatically in March and early April 2017, Garlinghouse attributed XRP's large price increase to Ripple's efforts. In a public statement on Coindesk, one of the leading digital asset news sites,

Garlinghouse commented, “We have had a significant rally in XRP prices, but it is reflective of a lot of work we have done to make Ripple a very compelling solution.”<sup>66</sup> Later in the same article he even more strongly linked Ripple’s actions to XRP’s success: “One of the big differences between XRP and many other digital currencies is that we are solving a real-world problems for banks and providing ROI. This has been giving us credibility in the broader cryptocurrency space. [emphasis added]”<sup>67</sup>

57. Garlinghouse at times emphasized that Ripple’s success would be measured by the long-term rise in price of XRP rather than simply short-term price swings. On multiple occasions, he conveyed this point using similar language as he used in an interview at the 2018 Yahoo Finance summit for digital asset investors:

*“I’ll tell you the exact same thing I tell people inside the company: The price of XRP over three hours, over three days, over three weeks, or even three months, that is not success. That’s not how I measure success. I think about success over the next three to five years.”*<sup>68</sup>

58. Garlinghouse similarly connects the success of Ripple’s efforts to the price of XRP in a press conference where he is asked whether, given that it is possible that banks can implement RippleNet without having to use XRP, “the expansion or growth of RippleNet is not correlated to the value or the price of XRP?”<sup>69</sup> In response, Garlinghouse answers, “I actually think they’re very correlated,” and explains how partnering with such banks provides the

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<sup>66</sup> Coindesk. Use or Speculation: What’s Driving Ripple’s Price to All-Time Highs? (2017). <https://www.coindesk.com/use-or-speculation-whats-driving-ripples-price-to-all-time-highs>.

<sup>67</sup> *ibid.*

<sup>68</sup> Yahoo Finance. Ripple CEO Brad Garlinghouse: 'There's a lot of FUD about XRP' (2018). <https://www.yahoo.com/news/ripple-ceo-brad-garlinghouse-theres-lot-fud-xrp-181425025.html>.

<sup>69</sup> YouTube. Ripple CEO Brad Garlinghouse Korea Reporter Meeting. <https://youtu.be/JOAuXEYu9Pg?t=1837> (2018).



opportunity for Ripple to cross-sell its XRP payments solution, xRapid, thereby necessitating the use of XRP at those banks.<sup>70</sup>

59. Ripple's quarterly XRP Markets Reports also linked the success of its banking partnerships with the increase in the price of XRP. The reports, many written by Miguel Vias, Head of XRP Markets, also more broadly linked Ripple's efforts to the price of XRP. For example, in the wake of XRP's large price increase in Q2 2017, the XRP Markets Report listed four Ripple initiatives that "clearly contributed to XRP's incredible second quarter" and were "instrumental in helping to drive XRP interest," including partnerships with financial institutions and the escrows previously described in Section 6.4.<sup>71</sup> Vias again highlighted Ripple's instrumental role in causing the price of XRP to increase when he was quoted in an article by CoinTelegraph, a digital asset news site, about the surge in XRP prices at the end of Q2 2017:

*"While the recent surge in XRP is certainly influenced by Bitcoin's scalability issues, much of the recent momentum is due to the announcement that MUFG [the world's third largest bank according to Ripple]<sup>72</sup> joined Ripple's steering group, GPSG. Unlike other digital assets, XRP has a clear use case and people are beginning to recognize that."*<sup>73</sup>

60. Finally, in an interview with a finance and technology news site in 2014, Larsen also publicly communicated that Ripple "created a lot of value in XRP."<sup>74</sup> While describing how Ripple would develop the XRP ecosystem, Larsen connected Ripple's efforts to the increased value of XRP, stating, "All we're concerned about is trust, utility and liquidity, grow the network, that will actually be the best thing for the value of XRP."<sup>75</sup> Later in the interview, when

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<sup>70</sup> *ibid.*

<sup>71</sup> Ripple. Q2 2017 XRP Markets Report (2017). <https://ripple.com/insights/q2-2017-xrp-markets-report/>.

<sup>72</sup> Ripple. MUFG Joins Ripple's Global Payments Steering Group (2017). <https://ripple.com/insights/mufg-joins-ripples-global-payments-steering-group>.

<sup>73</sup> CoinTelegraph. Ripple Price Surge Continues, Altcoin Takes Advantage Of Bitcoin Scaling Troubles (2017). <https://cointelegraph.com/news/ripple-price-surge-continues-altcoin-takes-advantage-of-bitcoin-scaling-troubles>.

<sup>74</sup> YouTube. Chris Larsen discusses Ripple. [https://youtu.be/\\_SpdX36p6ao?t=827](https://youtu.be/_SpdX36p6ao?t=827) (2014).

<sup>75</sup> YouTube. Chris Larsen discusses Ripple. [https://youtu.be/\\_SpdX36p6ao&t=1376s](https://youtu.be/_SpdX36p6ao&t=1376s) (2014).

asked, why people should trust Ripple if it “controls the disbursement of the Ripple [referring to XRP] and could potentially modify the money supply [of XRP]”, Larsen emphasized that Ripple is focused on increasing the value of XRP:

*“For those that are skeptical I would just say it's a different approach. Give us time, hopefully we'll earn their trust over time that we're doing this in a way that adds the most value to the protocol. At the end of the day that's all that matters and you know we're constantly learning we're constantly trying to maximize how we do that but we think it actually could be a real strength in making sure that things are being done to just add as much you know kind of partnerships and value as we possibly can to the protocol.”<sup>76</sup>*

### **7.3 Ripple Communications on Partnership Milestones**

61. One of the key aspects for evaluating whether a company or project has a viable business model is whether it has “traction”, i.e., to what extent is there is “product/market-fit” where actual customers have signed up to use the company’s product or service such as to demonstrate that it solves a real problem.<sup>77</sup> In the case of Ripple, whose stated core business model is to provide “financial institutions” with “the most advanced blockchain technology for global payments,”<sup>78</sup> showing traction meant needing to demonstrate that financial institutions were signing up to partner with Ripple for its payment solutions.<sup>79</sup> As such, Ripple made it a point to publicly announce and feature its partnerships with financial institutions, as well as connect those partnerships with the success of its business model. Ripple also publicly connected the success of its partnerships with the increased demand for and value of XRP, even though

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<sup>76</sup> YouTube. Chris Larsen discusses Ripple. [https://youtu.be/\\_SpdX36p6ao?t=1493](https://youtu.be/_SpdX36p6ao?t=1493) (2014).

<sup>77</sup> See, for example, the discussion on the importance of “traction” and “product/market fit” to investors by Steve Blank, a leading expert on technology startups and an adjunct professor at Stanford: <https://steveblank.com/raising-money/>.

<sup>78</sup> Ripple. <https://ripple.com> (2021). Accessed on August 18, 2021.

<sup>79</sup> Although some of these partnerships involved Ripple products that did not use XRP, this report focuses on what Ripple communicated publicly, including its assertions that usage of its products by financial institutions would ultimately lead to greater demand for XRP. This is further discussed in the remainder of this section.



some of these partnerships at the time did not involve the use of XRP. This section focuses primarily on Ripple’s announcements regarding these financial institution partnerships.

62. In Ripple’s 2014 Year in Review, Ripple listed one of its key achievements as having “refined market fit and gained traction.”<sup>80</sup> In the section of the report describing this traction, Ripple highlighted its partnerships with Fidor Bank, its first banking partner, and with Cross River and CBW Bank, the first U.S. Banks to partner with Ripple.<sup>81</sup> Ripple publicly touted its subsequent partnerships with financial institutions through press releases and posts on its Insights blog. Ripple’s notable milestones, e.g., reaching 100 financial institution partners, were also prominently announced.<sup>82</sup>

63. Ripple’s quarterly XRP Markets Reports frequently highlighted new banking partnerships and at times also touted their positive impact on the price of XRP. For example, the Q1 2017 XRP Markets Report provided reasons for the large increase in the price of XRP at the end of March 2017 and noted as a “particularly important” development that Ripple signed partnerships with “MUFG, the world’s third largest bank, 47 banks in Japan and [expanded] into the Middle East and India through NBAD [National Bank of Abu Dhabi] and Axis Bank.”<sup>83</sup> The report clearly connected Ripple’s growing bank partnerships to increased demand for XRP, which would increase XRP’s value:

*Markets are clearly connecting the dots that banks which join the Ripple network today are prospective users of XRP liquidity in the future. Growing bank membership of the Ripple network creates opportunities for Ripple to deepen*

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<sup>80</sup> Ripple. Ripple Labs 2014: A Year in Review (2014). <https://ripple.com/insights/views/ripple-labs-2014-a-year-in-review/>.

<sup>81</sup> *ibid.*

<sup>82</sup> Ripple. RippleNet Grows to More Than 100 Financial Institutions (2017). <https://ripple.com/insights/rippletnet-grows-to-over-100-financial-institutions/>.

<sup>83</sup> Ripple. Q1 2017 XRP Markets Report (2017). <https://ripple.com/insights/q1-2017-xrp-markets-report/>.

*those customer relationships and cross-sell liquidity solutions built on XRP, all of which should be beneficial to the asset.*<sup>84</sup>

64. Then, against the backdrop of another large increase in the price of XRP in Q4 2017, that quarter's XRP Markets Report again connected the XRP price increase with new banking partnerships and also directly mentioned that these partnerships were important "milestones" for potential purchasers of XRP:

*In late Q4, XRP markets began to connect the dots once again. Of particular importance were the American Express/Santander partnership announcement, the activation of escrow and the connection of Korean banks to the Japan Bank Consortium... each one of these client milestones increases the probability that institutions will eventually use XRP and xRapid to take advantage of more efficient liquidity, just like Cullix does today. As digital asset markets grow and evolve, newer market participants will continue to look to milestones such as these to gauge XRP's potential.*<sup>85</sup>

65. Another type of partnership that would have appealed to a purchaser interested in the investment use case for XRP was solidified by an agreement between Ripple and a provider of retirement investment accounts. Ripple announced that purchasers could buy XRP through Bitcoin IRA's retirement accounts.<sup>86</sup> Bitcoin IRA is a trading platform that enables users to purchase digital assets using a tax-advantaged retirement account. The only possible use case for a purchaser buying XRP on Bitcoin IRA would be for the purpose of making an investment (not to make cross-border payments). And, when joint statements from Ripple and Bitcoin IRA were released on the date of the announcement, Ripple underscored how its partnerships with financial institutions would increase the ownership of XRP and make XRP compelling to "forward thinking" individuals looking to purchase XRP using a retirement account:

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<sup>84</sup> *ibid.*

<sup>85</sup> Ripple. Q4 2017 XRP Markets Report (2018). <https://ripple.com/insights/q4-2017-xrp-markets-report/>.

<sup>86</sup> Ripple. It's Never Been Easier to Access and Store XRP (2017). <https://ripple.com/insights/its-never-been-easier-to-access-and-store-xrp/>.



*As institutional adoption of Ripple's enterprise blockchain solution has grown, people increasingly understand the future opportunity for banks, payment providers and other institutions to use XRP as an on-demand liquidity solution for cross-border payments. Bitcoin IRA, Kingdom Trust and BitGo offer a forward-thinking way for individuals in the U.S. to access and store XRP.*<sup>87</sup>

#### **7.4 Ripple Communications on Qualifications of Team Members**

66. The quality of a project's team is of paramount importance to a reasonable purchaser in the digital asset space, who wants to know whether the team associated with the coin is able to deliver with respect to the vision outlined by the team behind the coin or project. Ripple publicly announced new team members' roles and highlighted how they would help develop the XRP ecosystem and increase demand for XRP.

67. Shortly after Ripple hired Phil Rapoport, Director of Markets and Trading, it published a post interviewing him and connecting his role with attracting traders to the XRP ecosystem. After discussing Rapoport's background from Columbia University and Goldman Sachs, the interview shifts to Rapoport's role which would involve "thinking a lot about market structure and macroeconomic questions that might arise in the future, and making sure that the Ripple ecosystem feels welcoming for traders and finance professionals."<sup>88</sup> When asked, "Why should traders get involved in Ripple now?" Rapoport replies that "the investment [in XRP] has barely even started. This is going to be a tremendous opportunity from many angles and a theme you'll want to be close to."<sup>89</sup>

68. Similarly, when Miguel Vias, the head of Ripple's XRP markets team was hired, Ripple published a post on its blog, stating, "In his new role, Vias will utilize his considerable

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<sup>87</sup> *ibid.*

<sup>88</sup> Ripple. Interview with Phil Rapoport, Director of Markets and Trading at Ripple Labs (2013). <https://ripple.com/insights/interview-with-phil-raपोपोर्ट-director-of-markets-and-trading-2/>.

<sup>89</sup> *ibid.*

expertise building liquidity for new financial products by working with market makers, traders, investors and exchanges to strengthen the XRP markets and set the stage for large-scale institutional adoption.”<sup>90</sup> Ripple highlighted Vias’ background as a former executive of CME Group, a large derivatives exchange, and connected how his background would help drive greater adoption and demand for XRP, with Vias stating, “My experience in OTC markets and at an exchange will aid in charting a path toward wholesale XRP adoption.”<sup>91</sup>

69. When Ripple added Zoe Cruz to its board of directors it also connected her industry background, including as an executive from Morgan Stanley and founder of an investment management firm, with growing the usage of and demand for XRP.<sup>92</sup> On Ripple’s Insights blog, Garlinghouse is quoted as saying, “With her 35 years of experience in finance and foreign exchange, Zoe will offer us a unique perspective and invaluable guidance on how to accelerate RippleNet growth and XRP usage across the network globally.”<sup>93</sup>

70. Ripple also touted the technical credentials of its team and how its engineers were building a superior blockchain that is faster and more scalable than others. When a group including several engineers was hired in 2014, Ripple highlighted its “world class team of cryptographers, security experts, distributed network developers, Silicon Valley, and Wall Street veterans.”<sup>94</sup> That year, Ripple also announced the hiring of a “C++ Guru” who would work on “rippled”, the codebase of the XRP Ledger protocol software.<sup>95</sup> In later blog posts, Ripple

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<sup>90</sup> Ripple. CME Group Executive Miguel Vias Joins Ripple (2016). <https://ripple.com/insights/cme-group-executive-miguel-vias-joins-ripple/>.

<sup>91</sup> *ibid.*

<sup>92</sup> Ripple. Zoe Cruz Joins Ripple’s Board of Directors (2017). <https://ripple.com/insights/zoe-cruz-joins-ripples-board-directors/>.

<sup>93</sup> *ibid.*

<sup>94</sup> Ripple. Welcome Abiy, Peter, Mark, Yong-Soo, and Tom to Ripple Labs (2014). <https://ripple.com/insights/welcome-abiy-peter-mark-tushar-yong-soo-and-tom-to-ripple-labs/>.

<sup>95</sup> Ripple. Ripple Labs Welcomes C++ Guru Howard Hinnant (2014). <https://ripple.com/insights/ripple-labs-welcomes-c-guru-howard-hinnant/>.



highlighted its team’s “engineering practices” and “continued efforts to scale the performance of the XRP Ledger”, including efforts that enabled Ripple to regard itself as “The Most (Demonstrably) Scalable Blockchain.”<sup>96</sup> Moreover, Ripple claimed that XRP was “The Best Digital Asset for Payments” because “When you line up the top digital assets for these attributes [speed, cost, and scalability], it’s clear that XRP is the winner.”<sup>97</sup>

71. The impressive credentials and capabilities of new additions to Ripple’s management team, along with public statements by Ripple executives about the how the new team members would likely advance the adoption of Ripple products, XRP, and the XRP Ledger, would have provided a basis for confidence to a potential purchaser of XRP that Ripple could execute its strategy and ultimately grow the demand for XRP.

#### **7.5 Ripple Communications on Platform Growth Projections**

72. The size of a company’s target addressable market is an important consideration for investors evaluating the growth potential and value of early-stage companies such as Ripple. Investors want to know whether a given company solves a big enough problem that is related to a large market of potential customers. When discussing both Ripple’s potential growth and XRP’s potential value, Ripple executives often touted how Ripple was solving a problem in the multi-trillion-dollar payments industry and thus would create a lot of value for XRP.

73. In an interview as part of “The Cryptocurrency Investor Forum,” Breanne Madigan, Ripple’s former Head of Global Institutional Markets, described how XRP would benefit from its large addressable market:

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<sup>96</sup> Ripple. The Most (Demonstrably) Scalable Blockchain (2017). <https://ripple.com/insights/demonstrably-scalable-blockchain/>.

<sup>97</sup> Ripple. How XRP Stacks Up Against Other Digital Assets (2017). <https://ripple.com/xrp/xrp-stacks-digital-assets/>.

*“So for people who are newer coming in, take a look at a few individual crypto assets. Understand their utility, their core value proposition, what problem are they solving. Look at the total addressable market there. For example, in payments because of trapped capital, there’s trillions and trillions of dollars of market opportunity that XRP as a digital asset is solving for. So that’s a huge addressable market. So there you would see a driver for value creation.”<sup>98</sup>*

74. When asked about the nature of the large increase in the price of XRP in 2017 at the 2018 Yahoo Finance summit, Garlinghouse similarly tied the growth potential of XRP to Ripple’s large addressable market:

*“We’re solving a problem measured in the trillions of dollars and if we can, if we can activate that asset, if we can make global commerce more efficient there’s an opportunity to drive a lot of velocity, a lot of demand, and a lot of volume across XRP. We are just at the starting line.”<sup>99</sup>*

In another interview, Garlinghouse also tied his optimism regarding the long-term price of XRP to Ripple’s large addressable market:

*The price of XRP will take care of itself over a three to five year period. **We’re building something that I think can transform a multi-trillion-dollar problem around how liquidity is managed.** If we are successful in doing that, I am very optimistic about the future. [emphasis added]<sup>100</sup>*

75. Ripple’s Insights blog also frequently alluded to Ripple’s multi-trillion-dollar addressable market. For example, a 2017 article presenting Ripple’s vision described how the “\$180 trillion worth of cross-border payments made every year, with a combined cost of more than \$1.7 trillion a year” could be addressed through Ripple’s vision for the “Internet of value.”<sup>101</sup> In another article featuring a report by McKinsey & Company on the global payments

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<sup>98</sup> Video interview of Breanne Madigan with Barron’s and Grayscale Investments’ “The Cryptocurrency Investor Forum” on December 3, 2020. See <https://barronscustomevents.com/grayscale> starting at 1:47:22.

<sup>99</sup> Video interview of Brad Garlinghouse at the Yahoo Finance All Markets Summit: Crypto at 9:06. February 9, 2018. <https://finance.yahoo.com/news/ripple-ceo-brad-garlinghouse-theres-lot-fud-xrp-181425025.html>.

<sup>100</sup> YouTube. Ripple CEO Brad Garlinghouse Korea Reporter Meeting. <https://youtu.be/JOAuXEYy9Pg?t=1984> (2018).

<sup>101</sup> Ripple. The Internet of Value: What It Means and How It Benefits Everyone (2017). <https://ripple.com/insights/the-internet-of-value-what-it-means-and-how-it-benefits-everyone/>.



market, Ripple made it a point to emphasize how “**payments offer \$135 trillion in flows, bringing in \$240 billion** in revenue [emphasis added by Ripple]” and discussed how banks were starting “to accept distributed ledger technology for commercial solutions.”<sup>102</sup>

## 7.6 Ripple Communications on Use of Funds and Development Plans

76. When investment-oriented purchasers evaluate a company or project as a potential investment, they want to understand how the funds collected will be deployed by management to grow the venture. Ripple publicly described how it would use XRP sales, whether directly through programmatic or over-the-counter sales, or indirectly through compensating partners with XRP (see Sections 6.1, 6.2, and 6.3), to develop the XRP ecosystem and ultimately add value to XRP.

77. The Q1 2018 XRP Markets Report describes how Ripple would use funds released from the escrow “in a variety of ways to help invest in the XRP ecosystem.”<sup>103</sup> Similar language was used in many subsequent reports, sometimes with more detail on how funds from sales of XRP released from the escrow would be used by Ripple:

- “used in a variety of ways to help support the XRP ecosystem.” (Q2 2018, Q3, 2018, Q1 2019)<sup>104</sup>
- “used in a variety of ways to help support the XRP ecosystem, including the RippleNet Accelerator Program and Xpring investments like Securitize.” (Q4 2018)<sup>105</sup>

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<sup>102</sup> Ripple. McKinsey: Corporates Need Faster Payments, Too (2016). <https://ripple.com/insights/mckinsey-corporates-need-faster-payments/>.

<sup>103</sup> Ripple. Q1 2018 XRP Markets Report (2018). <https://ripple.com/insights/q1-2018-xrp-markets-report/>.

<sup>104</sup> Ripple. Q2 2018 XRP Markets Report (2018), Ripple. Q3 2018 XRP Markets Report (2018), Ripple. Q1 2019 XRP Markets Report (2019). <https://ripple.com/insights/q2-2018-xrp-markets-report/>, <https://ripple.com/insights/q3-2018-xrp-markets-report/>, <https://ripple.com/insights/q1-2019-xrp-markets-report/>.

<sup>105</sup> Ripple. Q4 2018 XRP Markets Report (2019). <https://ripple.com/insights/q4-2018-xrp-markets-report/>.

- “used in a variety of ways to develop use cases for XRP, including Xpring initiatives and RippleNet partnerships (such as MoneyGram).” (Q2 2019)<sup>106</sup>

As seen above, Ripple communicated that it used XRP to fund the development of the “XRP ecosystem.” This includes the RippleNet Accelerator Program, which sought to drive adoption among financial institutions by offering volume rebates and marketing incentives.<sup>107</sup> In particular, Ripple spent millions of dollars to incentivize and subsidize MoneyGram to use its ODL product.<sup>108</sup>

78. Another key use of funds from XRP sales is to increase the liquidity of the trading market for XRP. According to Ripple’s website, “Since 2012, Ripple has methodically sold XRP and used it to incentivize market maker activity to increase XRP liquidity and strengthen the overall health of XRP markets.”<sup>109</sup> More specifically, Ripple has stated that it uses XRP to provide “incentives to market makers who offer tighter spreads for payments.”<sup>110</sup> These incentives are critically important because, as described in Section 5.2, tight spreads are a prerequisite for Ripple’s ODL solution to be economically viable for cross-border payments by financial institutions.

79. On other forums, Ripple’s executives also communicated that the proceeds of Ripple’s XRP sales would be used by Ripple to grow the adoption of XRP and develop the XRP ecosystem. On XRP Chat, David Schwartz (CTO) referred to Ripple’s “large stash of XRP” as a

<sup>106</sup> Ripple. Q2 2019 XRP Markets Report (2019). <https://ripple.com/insights/q2-2019-xrp-markets-report/>.

<sup>107</sup> Ripple. Ripple Rolls Out \$300M RippleNet Accelerator Program to Grow Volume and XRP Utility (2017). <https://ripple.com/insights/ripple-rolls-300m-rippletnet-accelerator-program-grow-volume-xrp-utility/>.

<sup>108</sup> See Sections 4.2 and 6.3.

<sup>109</sup> Ripple. Market Performance (2021).

<https://web.archive.org/web/20201206204539/https://ripple.com/xrp/market-performance/>.

<sup>110</sup> Ripple. Ripple Escrows 55 Billion XRP for Supply Predictability (2017). <https://ripple.com/insights/ripple-escrows-55-billion-xrp-for-supply-predictability/>.



“secret weapon” that it could deploy to incentivize financial institutions to use Ripple.<sup>111</sup> In a similar manner, on the “r/Ripple” channel on the Reddit online forum, Schwartz described Ripple’s “stash of XRP” as a “strategic weapon” to spur increased liquidity in specific XRP-fiat currency trading pairs (referred to by Schwartz as “payment corridors”) to enable financial institutions to use such payment corridors.<sup>112</sup> On the BitcoinTalk forum, Schwartz also communicated that Ripple’s stock of XRP “funds the development and ensures there’s a healthy company standing behind the network.”<sup>113</sup>

80. Larsen also describes, broadly, how Ripple uses proceeds from XRP to build the XRP ecosystem. In his interview with Money & Tech, he stated how Ripple’s “job number one”—which involves “aggressively recruiting for cryptographers and developers, ... incredibly talented technology folks, business development folks, product folks [for] building stuff that’s super valuable”—is to “use the value that we’re being able to monetize [from XRP] already to pump that right back into the protocol.”<sup>114</sup>

## **7.7 Ripple Communications Regarding Promoting Healthy Secondary Markets and Liquidity for XRP**

81. Ripple actively undertook measures to expand the number of secondary XRP markets and build more liquid trading markets for XRP. Ripple publicly promoted such efforts,

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<sup>111</sup> XRP Chat. XRP Has no Price Limitation-CONFIRMED at 2 (2017). <https://www.xrpchat.com/topic/11951-xrp-has-no-price-limitation-confirmed/page/2/?tab=comments#comment-122892>.

<sup>112</sup> “The second piece [of Ripple’s strategy] is to use some of Ripple’s stash of XRP as a strategic weapon to incentivize the creation of pools of liquidity between XRP and currencies that are currently expensive or slow to deliver.” See Schwartz, David. [https://www.reddit.com/r/Ripple/comments/6z6dn8/whats\\_the\\_best\\_eli5\\_about\\_ripple/dmunm3l/](https://www.reddit.com/r/Ripple/comments/6z6dn8/whats_the_best_eli5_about_ripple/dmunm3l/) (2017).

<sup>113</sup> Schwartz’s comments are found in a thread titled, “Ripple or Bitcoin.” In response to a question, “Is the only reason for it not working as well with BTC is that Opencoin wouldn’t have a stock of XRP to hand out to promote the system? If that’s the only case it doesn’t sound like a good reason.” Schwartz replies, “That’s not the only reason, but that’s a very good reason by itself. Getting mass adoption is far from a sure thing. Being able to make it free for as many people as possible for as long as possible significantly decreases the chances that all the develop[sic] effort will be for nothing. Not to mention, XRP funds the development and ensures there’s a healthy company standing behind the network.” <https://bitcointalk.org/index.php?topic=176077.msg1848303#msg1848303> (2013).

<sup>114</sup> YouTube. Chris Larsen discusses Ripple at 13:57 to 14:53 (2014). [https://youtu.be/\\_SpdX36p6ao?t=837](https://youtu.be/_SpdX36p6ao?t=837).

at times even tying such efforts to increases in the price of XRP. According to Ripple, in February 2016 it announced a program that provided incentives and rebates for digital asset exchanges to list XRP.<sup>115</sup> When Ripple publicly announced the listing of XRP on Bitstamp, the first participant in Ripple’s digital asset exchange incentive program, it drew attention to how Ripple’s efforts to increase liquidity and onboard banks would benefit “investors”:

*XRP is uniquely capable of introducing more liquidity to exchanges to support global payment volume, especially in exotic corridors. Ripple’s adoption with banks puts XRP in pole position to become a global settlement asset, which translates to more liquidity for Bitstamp, and more value for institutional and individual **investors**. [emphasis added]*<sup>116</sup>

Similarly, the Q2 2017 XRP Markets Report asserts that Ripple’s new listings at six digital asset exchanges were among several “instrumental” achievements contributing to “XRP’s incredible quarter.”<sup>117</sup> When the number of digital asset exchanges reached over 50 by the end of 2017, Ripple took the opportunity to highlight how this contributed to increased trading volumes and how it was “the result of Ripple’s continued investment in the XRP ecosystem.”<sup>118</sup>

82. Another way that Ripple promoted its role in building liquidity and supporting healthy secondary markets for XRP is by publicly supporting market makers. Market makers serve the role of providing liquidity on an exchange by constantly posting bids and offers to trade an asset, which allows traders to have a ready-made counterparty. In the Q1 2018 XRP Markets Report, Ripple announced that it provided millions of dollars of loans to enable market makers i) to more actively “get involved in XRP markets” and ii) to “tighten spreads” so that the market

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<sup>115</sup> Ripple Q4 2016 XRP Markets Report (2017). <https://ripple.com/insights/q4-2016-xrp-markets-report/>.

<sup>116</sup> Ripple, Bitstamp Now Trading XRP with 0% Fees (2017). <https://ripple.com/insights/bitstamp-now-trading-xrp/>.

<sup>117</sup> Ripple, Q2 2017 XRP Markets Report (2017). <https://ripple.com/insights/q2-2017-xrp-markets-report/>.

<sup>118</sup> *Id.* at 35.



would be more efficient for market participants. In particular, Ripple communicated how its on-demand liquidity solution would stand to benefit from the subsequently increased liquidity:

*For Ripple, this additional liquidity is useful for xRapid as it increases the capacity of order books to support cross-border payments. Also, incremental liquidity in order books will lower volatility over time, further increasing XRP's ability to provide on-demand liquidity for xRapid.<sup>119</sup>*

83. Ripple also played an instrumental role in promoting secondary markets and adding liquidity to XRP trading venues by developing “gateways” for traders to bring assets, e.g., BTC or USD, onto the XRP Ledger to trade with XRP. These gateways were operated by various entities such as Bitstamp, and provided market participants with a venue to create a gateway-backed asset on the XRP Ledger. For example, one could give \$100 to Bitstamp and receive \$100 on the XRP Ledger which could then be used to trade with XRP and other assets on the XRP Ledger. As these gateways were the only sources to inject liquidity for trades on the XRP Ledger, Ripple stated that it made it a priority to onboard gateways by “providing XRP incentives and extended technical support for gateways.”<sup>120</sup>

84. Ripple's actions in promoting healthy secondary markets also bolstered its bull case of facilitating global payments for financial institutions. As described in its Q4 2017 XRP Markets Report, “In order for XRP to be highly efficient as a settlement asset for cross-currency transactions, it will continue to need greater volume and depth of order books [i.e., greater liquidity]. These market attributes increase its ability to support much larger cross-border payments and thus increase its utility broadly.”<sup>121</sup> Thus, Ripple's efforts to increase the liquidity

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<sup>119</sup> Ripple, Q1 2018 XRP Markets Report (2018). <https://ripple.com/insights/q1-2018-xrp-markets-report/>.

<sup>120</sup> Ripple, How Ripple Labs supports gateways (2014). <https://ripple.com/insights/ripple-labs-helps-gateways/>.

<sup>121</sup> Ripple Q4 2017 XRP Markets Report (2018). <https://ripple.com/insights/q4-2017-xrp-markets-report/>.

of XRP markets served to both attract additional investors as well as develop the XRP ecosystem needed to execute its global payments strategy underlying the bull case for investment in XRP.

## **7.8 Perspective of a Reasonable Purchaser with Respect to Ripple Communications**

85. Investment-oriented purchasers of digital assets often pay close attention to company communications related to the factors described above. Ripple’s extensive public comments and reports about these topics likely served to inform and persuade investment-oriented purchasers about the potential reward of purchasing XRP for the purpose of generating a profit. Indeed, the use of terms such as “traction,” “market fit,” “total addressable market,” and even “investors” when describing Ripple’s progress and growth potential are words typically understood by market participants to mean that they should view buying XRP as a potentially profitable investment.

86. Purchasers of XRP for cross-border payments would also be interested in some of these topics, but not all. For example, a money transmitter likely cares deeply about specific topics like the liquidity of the digital asset trading platforms it needs to rely on to complete an ODL transaction, but is less interested in Ripple’s communications about the bull case for the price of XRP. Ripple’s target customers for ODL are private financial institutions, and these organizations are less likely to engage in discussions with Ripple’s management team on a website message board like BitcoinTalk.

87. It is my opinion from carefully following the digital asset space that many of Ripple’s public communications conveyed to reasonable purchasers of XRP an expectation of future profit derived from the efforts of Ripple.



## **8. Summary of Findings and Conclusions**

88. Based on my professional experience in the blockchain space, in part as an investor and trader in digital assets, as well as my analysis of the public statements, documents, and design decisions of Ripple, I am able to reach the following findings and conclusions:

89. Both the designed economic properties of XRP and the actions and statements of Ripple in promoting the future growth of the usage of XRP support an investment use case. Over the course of the Issuance Period a reasonable purchaser of XRP would have had an expectation of generating profit based on the efforts of Ripple and its management to accomplish the growth strategies that Ripple advertised to the public as being already achieved or planned for the future. The fixed-supply model of XRP (along with the eventual further restriction of float through escrows) created a direct link between the perceived success of Ripple's product offerings and the price of XRP. Given this relationship between Ripple's performance and the price of XRP, a reasonable purchaser would have closely considered many factors that were publicized by Ripple such as disclosed partnerships with financial institutions, the quality of Ripple's management team, the target addressable market for Ripple's products, and the availability of liquidity on trading platforms for XRP. Ripple's management publicly touted the growth potential for the usage and value of XRP, and explained a coherent strategy for how they would attempt to achieve that future success for XRP.

90. Certain aspects of the design characteristics of XRP and the promotional activity of Ripple did not appeal to a pure utility use case. The primary promoted use case, a financial institution using XRP in order to exchange one fiat currency for another and send the funds in a cross-border transaction, was flawed for two important reasons: 1) the financial institution needed to execute two separate exchange transactions on digital trading platforms that, unless

subsidized by Ripple, created a strong headwind to economic viability by incurring two rounds of fees and slippage and 2) parties involved, whether financial institutions or other market participants, had unwanted exposure to the price and volatility of that bridge asset.

## **9. Right to Supplement**

91. The opinions expressed in this report are based on my review and analysis of the documents and data as set forth herein. I reserve the right to supplement my report and analysis based on any new evidence brought to my attention.





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## KEY QUALIFICATIONS AND EXPERIENCES

- Leads data-driven investigations in cryptocurrency fraud cases involving Ponzi schemes, market manipulation, money laundering, and securities violations
- Provides technical assistance to government regulators, agencies, and private companies related to digital asset technologies and forensic data analytics
- Leads team of data scientists analyzing blockchain data such as on-chain trading, smart contract activity, DeFi platforms, and tracing complex funds transfers
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- Runs an investment partnership, with first-hand experience investing in digital assets, trading digital assets on cryptocurrency spot and futures markets, executing digital asset arbitrage strategies, and developing quantitative and discretionary investment strategies across a wide range of asset classes

## EDUCATION

M.S., Electrical Engineering, May 2010

B.S., Electrical Engineering, May 2006  
*Honors: magna cum laude*

## PROFESSIONAL EXPERIENCE

*Director*

*Jan '19 – present*

- Leads data-driven investigations in cryptocurrency fraud cases involving money laundering, market manipulation, theft, and securities violations
- Manages a team that creates custom software and data analysis solutions to trace, cluster, and deanonymize cryptocurrency transactions
- Builds statistical tools to analyze trading data and algorithmically identify manipulative trading activity
- Analyzes activity patterns in smart contracts, ERC-20 tokens, and fund transfers on the Ethereum blockchain to identify fraudulent financial activity

[REDACTED], Austin, TX

Sep '16 – present

*Founder and CEO*

- Founded a quantitative investment fund originally focused on cryptocurrency arbitrage as well as derivatives strategies in equity, commodities, and currency markets
- Makes discretionary investments across a broad collection of private and public assets – equities, commodities, bonds, real estate, derivatives, private businesses, and digital assets
- Designed software to automate execution of multiple investment strategies, identify arbitrage opportunities, manage counterparty risk, and securely store cryptocurrency assets
- Created multi-asset algorithmic investment strategies to exploit pricing inefficiencies across time, exchanges, and assets in cryptocurrency markets
- Developed derivatives trading strategies utilizing machine learning and statistical signal processing techniques

[REDACTED], Burlington, MA

Jul '15-Aug '16

*Founder and CEO*

- Founded a technology company that developed automotive radar for autonomous vehicles
- Designed radar hardware and signal processing algorithms to enable automated detection of objects in a vehicle's environment
- Managed the company's engineering, fundraising, and recruiting efforts

[REDACTED], Bedford, MA

Jan '13-Jun '15

*Senior Engineer*

- Designed, modeled, tested, and defined requirements for multiple large radar projects
- Engineering and project management focused primarily on hardware, signal processing, and system integration

[REDACTED], Lexington, MA

Sep '10- Dec '12

*Associate Technical Staff*

- Developed signal processing algorithms for airborne radar systems
- Researched and prototyped novel detection and classification algorithms for high performance radar signal processing projects



## Documents Considered to Complete the Expert Report of [REDACTED]

| Document Name                                                                                                     | Reference                                                                                                                                                                                                           |
|-------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Basel Committee on Banking Regulation: Prudential Treatment of Cryptoasset Exposures                              | <a href="https://www.bis.org/bcbs/publ/d519.pdf">https://www.bis.org/bcbs/publ/d519.pdf</a>                                                                                                                         |
| Bitcoin Forum: [XRP] Ripple Speculation                                                                           | <a href="https://bitcointalk.org/index.php?topic=1381669.msg19787105#msg19787105">https://bitcointalk.org/index.php?topic=1381669.msg19787105#msg19787105</a>                                                       |
| Bitcoin Forum: Ripple or Bitcoin                                                                                  | <a href="https://bitcointalk.org/index.php?topic=176077.msg1848303#msg1848303">https://bitcointalk.org/index.php?topic=176077.msg1848303#msg1848303</a>                                                             |
| CNBC: Ripple is sitting on close to \$80 billion and could cash out hundreds of millions per month – but it isn't | <a href="https://www.cnbc.com/2018/01/16/why-ripple-is-not-cashing-out-its-xrp-holdings.html">https://www.cnbc.com/2018/01/16/why-ripple-is-not-cashing-out-its-xrp-holdings.html</a>                               |
| Coindesk: Ripple to Give Away 1 Billion XRP in Massive Bid to Fund Online Content                                 | <a href="https://www.coindesk.com/ripple-is-giving-away-1-billion-xrp-in-massive-bid-to-fund-online-content">https://www.coindesk.com/ripple-is-giving-away-1-billion-xrp-in-massive-bid-to-fund-online-content</a> |
| CoinDesk: Use or Speculation: What's Driving Ripple's Price to All-Time Highs?                                    | <a href="https://www.coindesk.com/use-or-speculation-whats-driving-ripples-price-to-all-time-highs">https://www.coindesk.com/use-or-speculation-whats-driving-ripples-price-to-all-time-highs</a>                   |
| Consensus: Invest Event                                                                                           | <a href="https://events.bizzabo.com/consensusinvest">https://events.bizzabo.com/consensusinvest</a>                                                                                                                 |
| Financial Times: The art of redefining success, MoneyGram and Ripple edition                                      | <a href="https://www.ft.com/content/3f2fb6bc-e17a-4179-a0a4-152a3e0db1d6">https://www.ft.com/content/3f2fb6bc-e17a-4179-a0a4-152a3e0db1d6</a>                                                                       |
| Journal of Banking & Finance: Order flow, bid-ask spread and trading density in foreign exchange markets          | <a href="https://www.sciencedirect.com/science/article/pii/S0378426611002603">https://www.sciencedirect.com/science/article/pii/S0378426611002603</a>                                                               |
| Journal of Empirical Finance: Volatility cascades in cryptocurrency trading                                       | <a href="https://www.sciencedirect.com/science/article/pii/S092753982100030X">https://www.sciencedirect.com/science/article/pii/S092753982100030X</a>                                                               |
| MoneyGram: Form 10-K 2019 Annual Report                                                                           | <a href="https://ir.moneygram.com/financials-and-filings/annual-reports">https://ir.moneygram.com/financials-and-filings/annual-reports</a>                                                                         |

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| Quora: If a large amount of banks were to adopt xrapid and started using xrp, how would that impact the token's value?                                             | <a href="http://www.quora.com/If-a-large-amount-of-banks-were-to-adopt-xrapid-and-started-using-xrp-how-would-that-impact-the-tokens-value">www.quora.com/If-a-large-amount-of-banks-were-to-adopt-xrapid-and-started-using-xrp-how-would-that-impact-the-tokens-value</a>                                                                                                  |
| Quora: If banks use Ripple for payments but don't need to buy XRP, then who will buy XRP and why will its price increase? Does it make any sense to invest in XRP? | <a href="https://www.quora.com/If-banks-use-Ripple-for-payments-but-don-t-need-to-buy-XRP-then-who-will-buy-XRP-and-why-will-its-price-increase-Does-it-make-any-sense-to-invest-in-XRP">https://www.quora.com/If-banks-use-Ripple-for-payments-but-don-t-need-to-buy-XRP-then-who-will-buy-XRP-and-why-will-its-price-increase-Does-it-make-any-sense-to-invest-in-XRP</a> |
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| Ripple: Metric - Work Order (Execution Version).pdf                                  | RPLI_SEC 0239684                                                                                                                                                                                                      |
| Ripple: MUFG Joins Ripple's Global Payments Steering Group                           | <a href="https://ripple.com/insights/mufg-joins-ripples-global-payments-steering-group/">https://ripple.com/insights/mufg-joins-ripples-global-payments-steering-group/</a>                                           |
| Ripple: ODL Analysis.xlsx                                                            | RPLI_SEC 0533162                                                                                                                                                                                                      |
| Ripple: odl_txn_data_7_27_20.csv                                                     | RPLI_SEC 0301032                                                                                                                                                                                                      |

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| Ripple: Q3 2017 XRP Markets Report | <a href="https://ripple.com/insights/q3-2017-xrp-markets-report/">https://ripple.com/insights/q3-2017-xrp-markets-report/</a> |
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| Ripple: RippleCharts Revamp                                                                  | <a href="https://ripple.com/insights/ripplecharts-revamp/">https://ripple.com/insights/ripplecharts-revamp/</a>                                                                                                                               |
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| Ripple: RippleNet Growth: Announcing More Than 300 Customers                                   | <a href="https://ripple.com/insights/rippletnet-growth-announcing-more-than-300-customers/">https://ripple.com/insights/rippletnet-growth-announcing-more-than-300-customers/</a>                                                                                                                               |
| Ripple: RPLI_SEC 0300926.pdf                                                                   | RPLI_SEC 0300926                                                                                                                                                                                                                                                                                                |
| Ripple: The Internet of Value: What It Means and How It Benefits Everyone                      | <a href="https://ripple.com/insights/the-internet-of-value-what-it-means-and-how-it-benefits-everyone/">https://ripple.com/insights/the-internet-of-value-what-it-means-and-how-it-benefits-everyone/</a>                                                                                                       |
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| Steve Blank: Raising Money                                                                     | <a href="https://steveblank.com/raising-money/">https://steveblank.com/raising-money/</a>                                                                                                                                                                                                                       |
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| Twitter: David Schwartz (@JoelKatz)                                           | <a href="https://web.archive.org/web/20170616010746if_/https://twitter.com/JoelKatz">https://web.archive.org/web/20170616010746if_/https://twitter.com/JoelKatz</a>                                                                       |
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| Yahoo Finance: Ripple CEO Brad Garlinghouse: 'There's a lot of FUD about XRP' | <a href="https://finance.yahoo.com/news/ripple-ceo-brad-garlinghouse-theres-lot-fud-xrp-181425025.html">https://finance.yahoo.com/news/ripple-ceo-brad-garlinghouse-theres-lot-fud-xrp-181425025.html</a>                                 |
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| YouTube: Ripple CEO Brad Garlinghouse Korea reporter meeting                  | <a href="https://youtu.be/JOAuXEYu9Pg?t=1837">https://youtu.be/JOAuXEYu9Pg?t=1837</a>                                                                                                                                                     |

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