2021 Digital Assets Payment Industry Research Report

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TokenInsight

Find, Create, and Spread Value in Blockchain.

Content

Executive Summary

① The global payments market has been growing at an average annual rate of more than 20% in the past three years, and will reach $6,685.1 billion in 2021.

② The structure of the payment industry has changed: The market share of digital commercial payment has been declining year by year, **while the market share of mobile device payments has continued to rise**. Commercial payments have entered the 2.0 era, which are upgraded from the end of transactions to the start of digital operations. This may provide greater opportunities for the mobile device payment market.

③ From a broad perspective of the whole industry, the payment industry has gone through two major phases of bank-based dominance and internet-based dominance. **In the future, the trend of bank-based revival (digital asset payments by sovereign countries) represented by DECP and the trend of decentralized digital asset payments may come together**.

④ In the traditional third-party payment chain, the payment transmission process is cumbersome and the friction costs are huge. Economically developed countries charge merchants higher fees in this process. **The blockchain-based peer-to-peer payment method solves the problems of high fees, inefficient cross-border transfers and high costs in traditional payments.**

⑤ **Blockchain payment solutions are mainly divided into four categories:** Bitcoin payment, cross-border payments with fiat currency (Ripple, Steller, etc.), digital asset payments (Flexa, etc.), integrated payment compatible with fiat currency and multi-public chain digital assets (Alchemy Pay, etc.).

⑥ From the perspective of blockchain payment solution development, there is a ring extension around Bitcoin payments. In addition to Bitcoin, **the main focus of other payment projects is on the convenience and capital utilization of cross-border transfers, the instant confirmation of offline digital asset payments, the ease of use of the product, and the diversity and anti-volatility of the supported assets for iterative upgrades**.

⑦ From the perspective of payment product ecology, **payment product mainly focuses on the richness of supported assets, diversity of usage scenarios, ease of use and ecological integrity of the product**. Among them, Ripple is mainly for institutional users, its use scenario and product ecology is relatively single. Alchemy Pay has the most complete product ecosystem with integrated payments.

⑧ In terms of the token economics of projects, the overall market capitalization of payment projects spans a wide range, from $200 million to $43 billion. **In terms of the function of tokens, tokens are mainly used as settlement assets and collateral assets.** In terms of the latest data, $ACH has a relatively high exchange rate, with an average daily turnover rate of 20% or more. The other five programs' turnover rate are below 8%, which reflects a relatively stable structure of token holding.

INDUSTRY STATUS

1.1 Industry Overview

In the traditional payment industry, the payment system is mainly composed of payment regulators, clearing systems, payment service organizations and payment instruments.

- The main representative institutions of payment regulators are the central bank and the Federal Reserve, etc. They act as the most authoritative institutions of the whole payment system to supervise and manage the problems existing in the payment industry.
- The main representatives of payment clearing institutions are UnionPay and VISA.
- Payment service organizations are mainly dominated by commercial banks, who have absolute dominance in cross-border settlement and financial trade. However, with the advent of the digital era, digital currencies in sovereign countries have also become one of the key layouts for commercial banks.
- The payment tool was originally based on bank cards, but with the rise of Internet payment, third-party payment institutions such as Alipay and PayPal have extended the application scenarios of the original payment tools and expanded payment channels.

‣ Representative institutions of the payment system

Source: TokenInsight

	China		USA	
Regulators	中国人民银行 THE PEOPLE'S BANK OF CHINA	中国支付清算协会 Payment & Clearing Association of China	UNITED STATES FEDERAL RESERVE SYSTEM	OFFICE OF THE COMPTROLLER OF THE CURRENCY
Clearing Agency	UnionPay 银联	NUCC	VISA	mastercard
Commercial Bank	中国银行 BANK OF CHINA	ICBC 中国工商银行	citibank	CHASE
Third-party institutions	支付宝 ALIPAY	微信支付 WeChat Pay	PayPal	worldpay from FIS

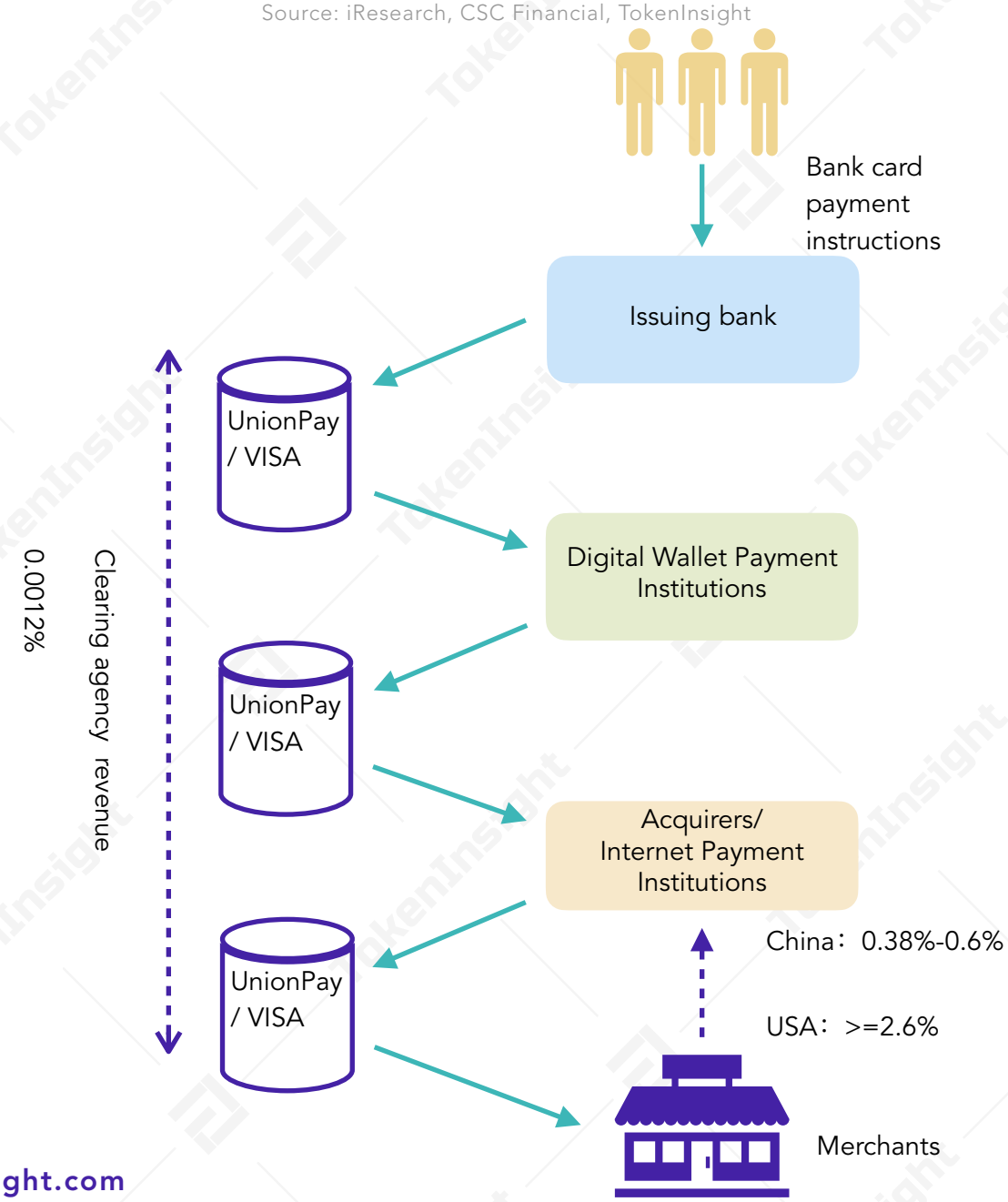
INDUSTRY STATUS

1.2 Payment Industry System

There are many participants in the traditional third-party payment industry chain, involving customers, commercial banks, third-party account-side/ acquisition-side payment institutions, clearing institutions and merchants. The whole industry chain can be basically divided into three levels, with the first level being users and merchants, which are the source and end of payment respectively. The second layer is the third-party account-side/ acquirer-side payment institutions. The third layer is commercial banks and clearing institutions. The profit chain is clear, with third-party payment institutions collecting fees from the user side and merchant side. Clearing institutions and commercial banks collect transaction fees from third-party account-side and acquirer-side payment institutions.

‣ Traditional third-party payment industry chain

Source: iResearch, CSC Financial, TokenInsight



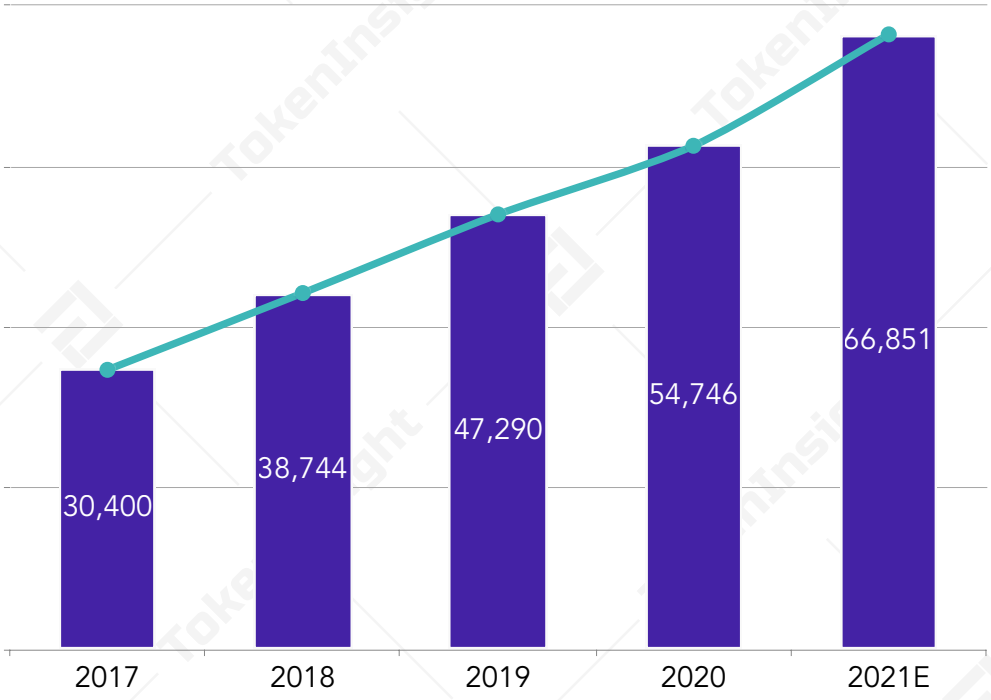
INDUSTRY STATUS

1.3 Industry Data

With the global economic growth and diversification of consumption, the market size of global mobile payment grew at an average annual growth rate of more than 20%. From $3.04 trillion in 2017 to $5.47 trillion in 2020, the global mobile payment market size has grown by 79.93%. According to Statista forecast data, the global mobile payment market size will reach $6.69 trillion in 2021, which will be more than twice the market size in 2017.

▸ 2017-2021 Global mobile payments market size

Source: Statista, TokenInsight



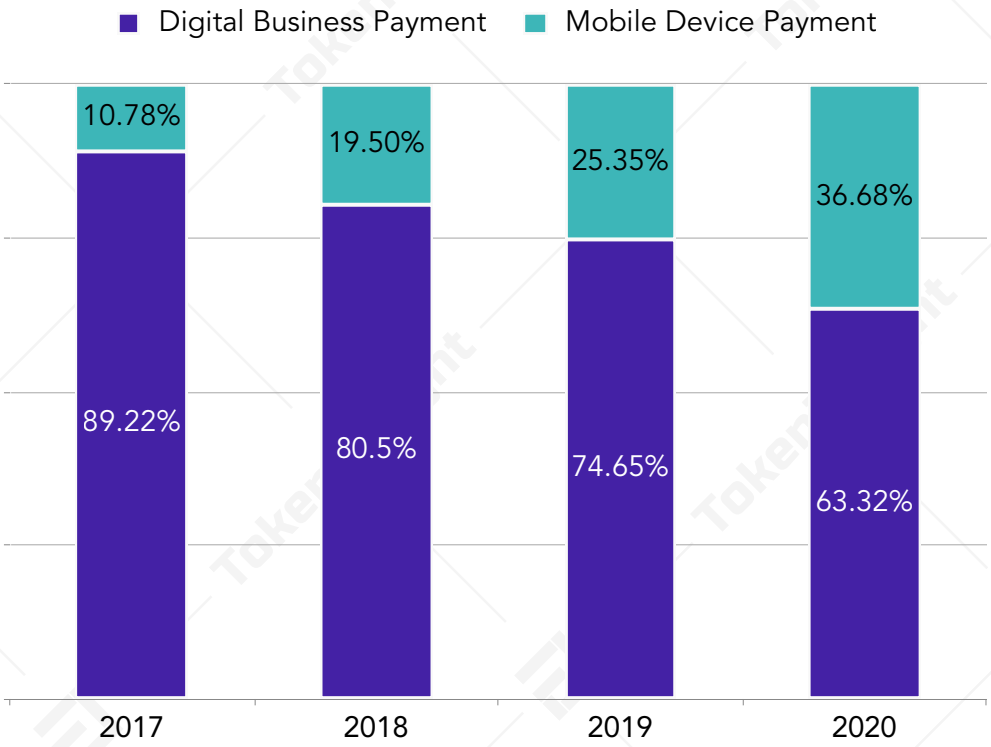
From 2017 to 2020, **the share of global digital commercial payments shows a decreasing trend during this period, and the share of mobile device payments rises**. By 2020, the digital commercial payment market scale accounted for 63.32%, and the mobile device payment market scale accounted for 36.68%.

The change in payment structure reflects commercial payments entering the 2.0 era, **where digital operations with payments as the entry point will power the shift from commercial payments to payment commerce. A case in point is that commercial payment upgraded from the endpoint of transaction to the starting point of digital operation. This may provide greater opportunities for the mobile device payment market.**

INDUSTRY STATUS

‣ 2017-2020 Changes in the structure of the global mobile payments market

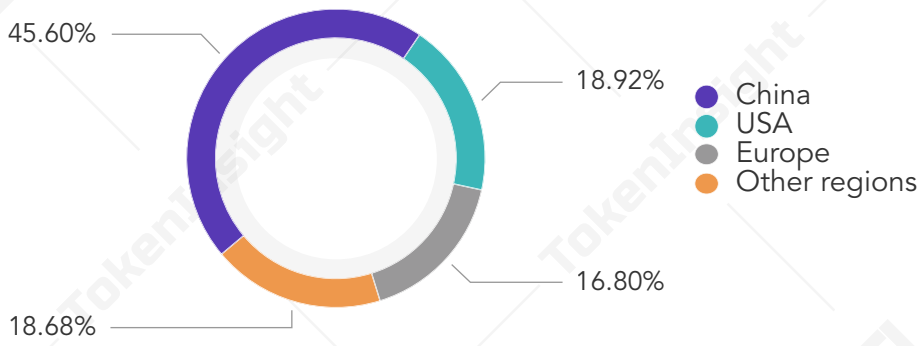
Source: Statista, TokenInsight



From the perspective of the proportion of the global digital payment regional market in 2020, the top three regions are China, the United States and Europe, which account for 45.60%, 18.92%, and 16.80%, respectively, and the top three total ratio reached 81.32%.

‣ 2020 Global digital payment regional market size and proportion

Source: Statista, TokenInsight



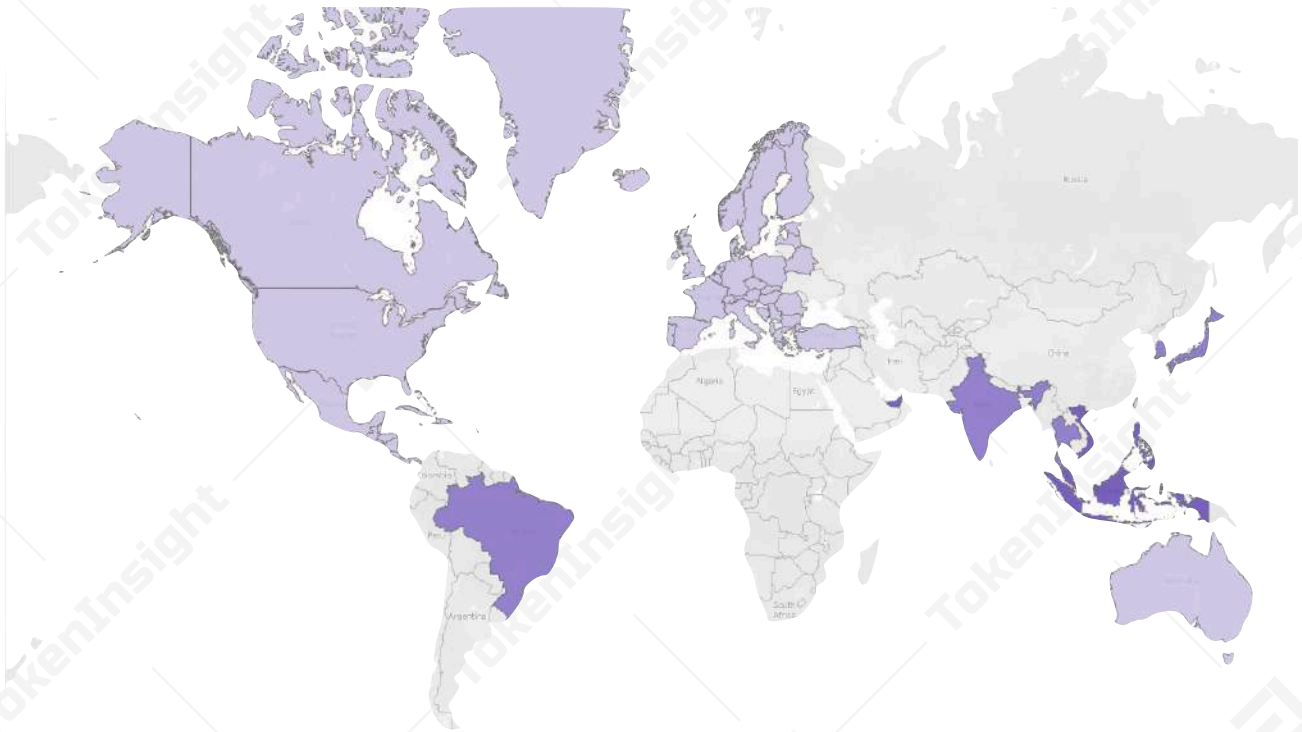
INDUSTRY STATUS

Compared with the traditional digital payment industry, the geographic distribution of the emerging digital payment industry is quite different. The main reason is that the policies and regulations of various regions have different restrictions on the emerging digital asset payment industry.

Taking the traditional digital payment industry as an example, China has the largest market share, accounting for nearly half of the market. The United States and Europe also account for a relatively high market share. On the one hand, the consumer market driven by population and economy is huge, and demand drives the scale of the traditional payment market; on the other hand, technology promotes the popularization of digital payments. Except for the above three regions, the market size of other regions accounted for less than 20%.

The downward penetration rate of the emerging digital payment industry is higher than that of traditional digital payment. For example, the main markets of Alchemy Pay are distributed in Europe, North America and other Asian regions except Mainland China. Brazil, India, Singapore, Malaysia, Indonesia, Japan and South Korea are the most prominent. Compared with mainland China, other Asian countries/regions have a higher acceptance of digital asset payments.

‣ Alchemy Pay market distribution
Source: Alchemy Pay, TokenInsight



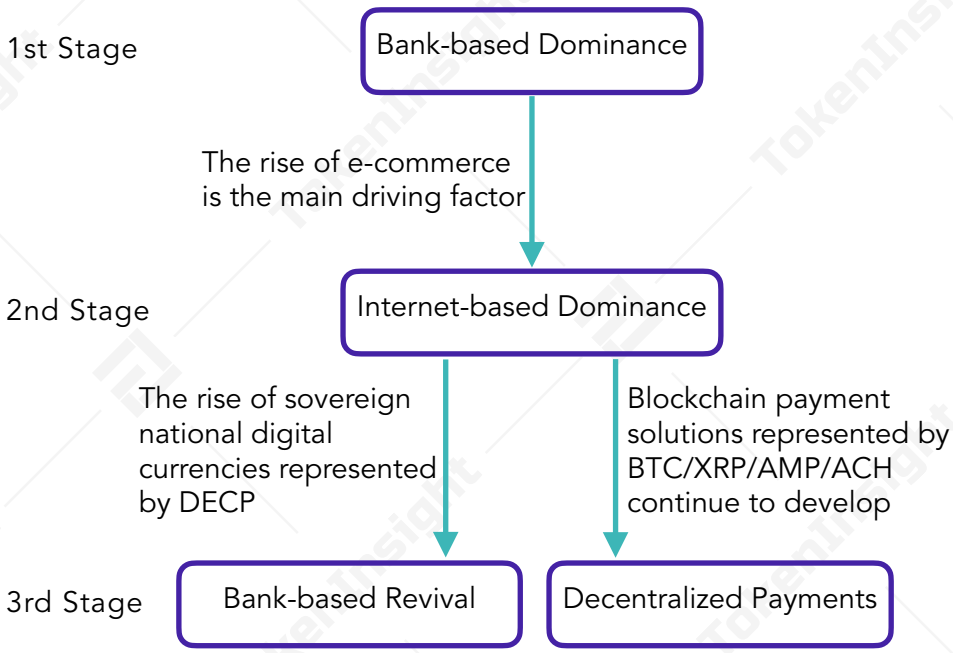
INDUSTRY DEVELOPMENT

2.1 Development Path

From the perspective of countries where the payment industry is relatively mature, China and the United States, the development process of the entire payment industry can be roughly divided into three stages, with 2010-2020 as the transition period of the second and third stages. The development time of the payment industry in China and the United States is slightly different, but the development process is roughly the same.

‣ The development history of the payment industry

Source: TokenInsight



The first stage: Bank-based Dominance. The first stage of the development of China's payment industry was before 2005, marked by the establishment of UnionPay. From 1960 to 1990, offline commercial consumption in the US retail and service industries flourished, driving the development of the bank card industry. Visa, Master, and American Express were born, and bank cards accelerated their development. During this period, the bank card industry laid the foundation for the development of third-party payment.

The second stage: Internet-based Dominance. The second stage of the development of China's payment industry is from 2005 to 2020, marked by the independent operation of Alipay. In 2011, Alipay took the lead in launching mobile QR code payment, and its relationship with UnionPay began to shift to competition. The introduction of bar code payment is a sign of entering a new era of mobile payment, and finally the end is marked by the strengthening of supervision.

INDUSTRY DEVELOPMENT

The second stage of the development of the US payment industry is from 1990 to 2020, marked by the launch of Amazon, one of the earliest e-commerce sites, and the online auction site eBay, and the e-commerce market has begun to emerge. In 1996, the world's first third-party payment company was born in the United States, and the most prominent payment company PayPal was born in 1998. **In the second stage, the rapid development of e-commerce led to the rapid expansion of the third-party payment industry.**

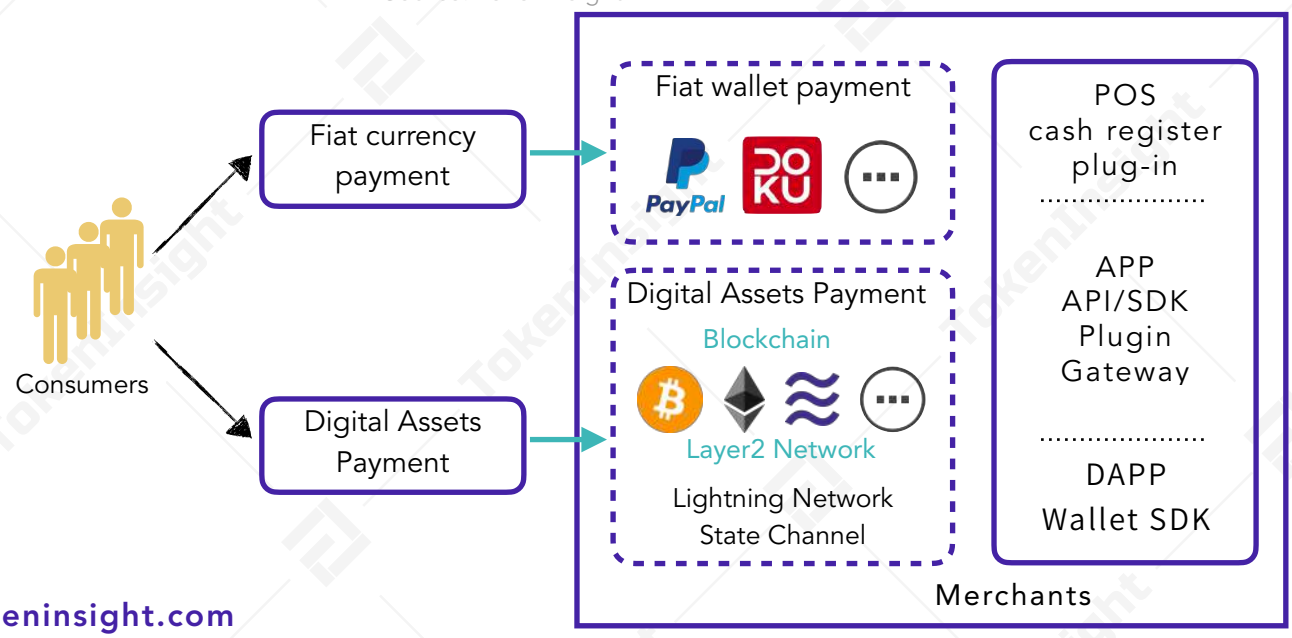
At the same time, **in the second phase, both decentralized payment and sovereign state digital currencies have budded, and the first generation of decentralized payment currencies represented by Bitcoin was born in the middle of the phase. The digital currency of sovereign countries represented by DCEP was proposed at the end of the stage.**

The third stage: Bank-based Revival and Decentralized Payments. The digital renminbi pilot in China started in April 2020. Bank APPs can directly deposit and withdraw digital renminbi, and use digital renminbi to pay. This is the continuation of third-party payment supervision and the beginning of the payment industry's return to the banking system. But at the same time, the payment industry has bifurcated during this period, and the development and transformation of blockchain technology have promoted the practical application of decentralized digital currency. Acceptance on a global scale is gradually increasing, and decentralized payment has become another trend in contrast to the rejuvenation of the banking industry.

2.2 Traditional Payment and Digital Payment

Compared with traditional payment, the most direct advantage of digital payment represented by Alchemy Pay is the reduction of payment fees. Based on the characteristics of decentralization, digital payment simplifies the process established on a centralized clearing institution and reduces friction costs. At the same time, following local laws and regulations, it is compatible with traditional third-party payment channels in fiat currency in the form of POS/cash register plug-in products.

‣ The development history of the payment industry
Source: TokenInsight



BLOCKCHAIN SOLUTION

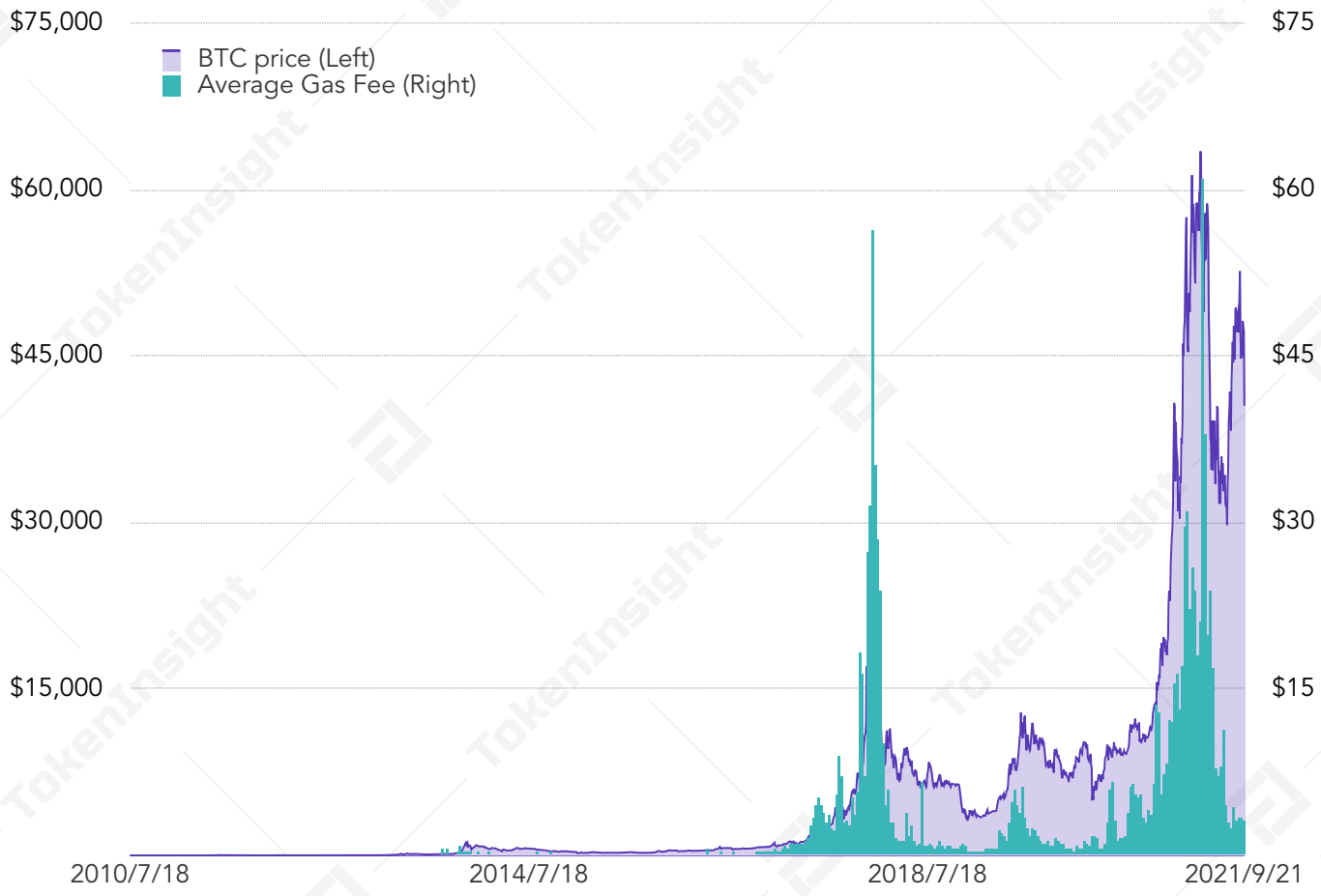
3.1 Bitcoin Payment

Bitcoin is the first digital asset based on blockchain technology. With the genesis block generated on January 9, 2009, Bitcoin successfully practiced for peer-to-peer payments. Compared to traditional payment systems, Bitcoin payment allows direct transfers between users, without going through third-party institutions such as banks, clearing centre, and electronic payment platforms. As a result, Bitcoin payment avoids high fees and cumbersome transfer processes. It can be used by any user who has digital devices with Internet connection.

Though the fee rate is much lower than that of centralized liquidators, **Bitcoin network has very limited transaction processing speed**. What's more, if the network is congested, the transaction initiator will have to pay a higher fee to complete the transaction with greater priority, making it less friendly for small transfers. In addition, since **the price of Bitcoin against fiat currency fluctuates dramatically**, there is always a value difference between the Bitcoin paid by the payment initiator and the Bitcoin received by the payment recipient.

‣ Bitcoin price and the network fee

Source: The Block, TokenInsight



BLOCKCHAIN SOLUTION

As of September 2021, there are more than 10,000 merchants that directly accept Bitcoin payments. Several major companies, including computer hardware provider Dell, video game distribution platform Steam, Japanese airline Rakudo, and car manufacturer Tesla, have accepted Bitcoin as a payment method. However, they have subsequently stopped supporting Bitcoin payments because of low demand, high volatility in price, and energy efficiency.

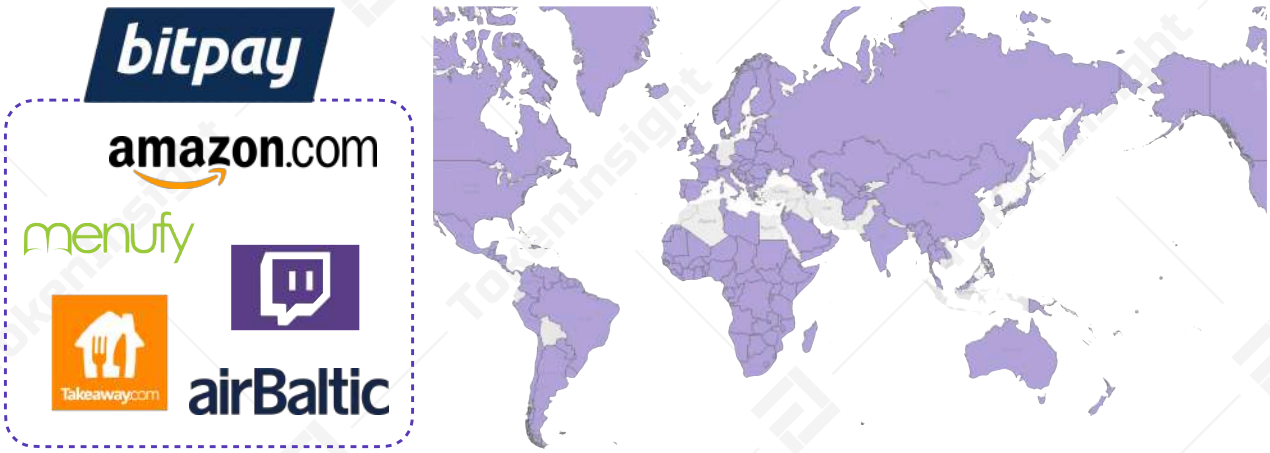
Bitcoin payments present many obstacles for the average merchant. In addition to the aforementioned issues, there are also problems such as **difficulty in instant funds confirmation and high using threshold**. Faced with these problems, the cost for merchants to independently develop digital assets payment solutions can be extremely high.

BitPay

To promote the popularity of Bitcoin payments, technical support from third-party service providers is indispensable. Service providers such as BitPay, GoCoin, and CoinPayments, for example, help merchants integrate Bitcoin payments into their original payment processes. They provide solutions of Bitcoin storage and fiat currency exchange, **solving the high threshold of the Bitcoin network**. Among them, BitPay, founded in 2011 in the United States, is one of the largest service providers at present. BitPay is now reportedly able to provide Bitcoin payment and liquidation services in 229 countries and regions. Back in 2018, BitPay CEO Sonny Singh revealed in an interview that BitPay had signed up with more than 60,000 merchants. Today, BitPay is supported by a wide range of merchants, including food, clothing, housing, transportation, entertainment, and education, some of which are shown in the picture below.

▸ Market distribution and payment ecosystem of BitPay

Source: BitPay, TokenInsight



BLOCKCHAIN SOLUTION

In addition to third-party service providers, **the prepaid card is another easy-to-use solution to Bitcoin**. Through financial liquidation services provided by Visa and Master Card, cardholders can transfer Bitcoin to the card and then make payments in offline scenarios. The prepaid card will convert Bitcoin to fiat currency for settlement at real-time prices. According to the partner liquidators, the service extends the use of Bitcoin to millions of merchants and even allows users to withdraw local fiat cash from over 30 million ATMs worldwide. Blockchain companies including Coinbase, BlockFi, and BitPay, offer this service.

3.2 Cross-Border Payment Solutions Represented by Ripple

Ripple

Ripple is a decentralized payment system dedicated to using blockchain to improve the user experience on top of the existing bank cross-border transfer system. **Ripple offers a solution to address the pain point of low transaction confirmation speed on the Bitcoin network.** According to the official description, Ripple can "consistently process 1,500 transactions per second".

Ripple's first solution, xCurrent, is a real-time, two-way settlement system built between different bank ledgers. Compared to the SWIFT one-way messaging framework, xCurrent enables pre-verification, significantly improving the efficiency of cross-border payment processing, and reducing payment costs. But it requires financial institutions to pre-deposit funds into their overseas accounts, which is a problem of low capital utilization.

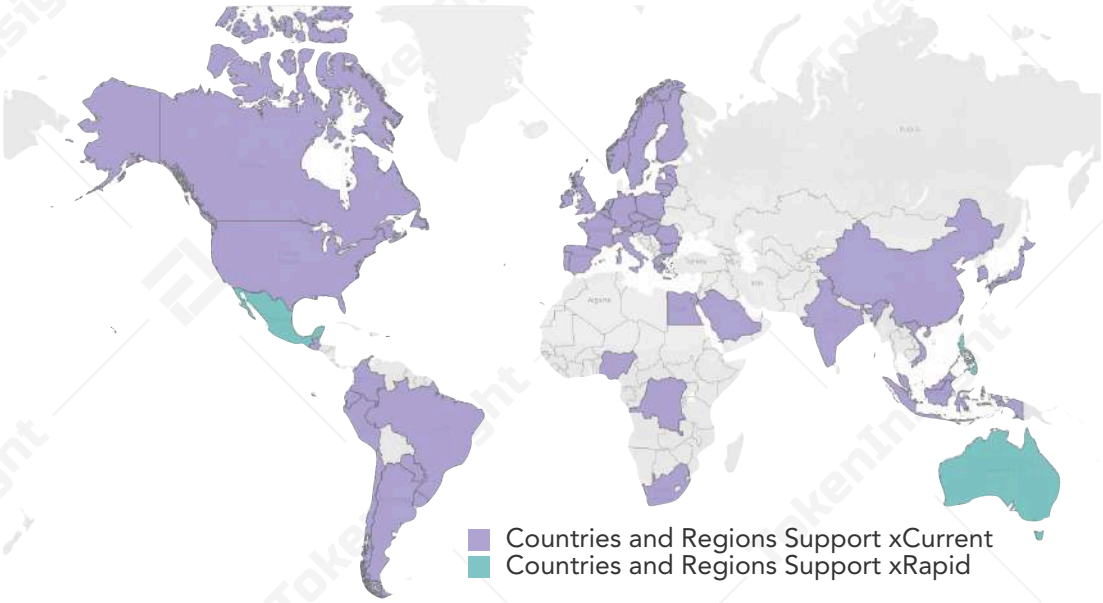
In response to the pain point, Ripple proposed the xRapid liquidity funding solution in 2018. xRapid allows payment originators to convert local fiat currency into Ripple's native digital asset XRP via financial institutions, which are then converted into another fiat currency for payment to the recipient. This approach reduces the liquidity cost of pre-provisioning funds and improves capital utilization.

However, the process of converting XRP into local fiat currency inevitably leads to losses due to currency price fluctuations. According to The Block, Ripple pays XRP to financial institutions as a subsidy to absorb losses from price fluctuations to promote the On-Demand Liquidity (formerly xRapid) solution. Ripple says its customers have reached at least 350 financial institutions in more than 50 countries, including MoneyGram, American Express, Standard Chartered Bank, Banco Santander, S.A., and others.

BLOCKCHAIN SOLUTION

‣ Ripple market distribution

Source: Ripple, TokenInsight



Stellar

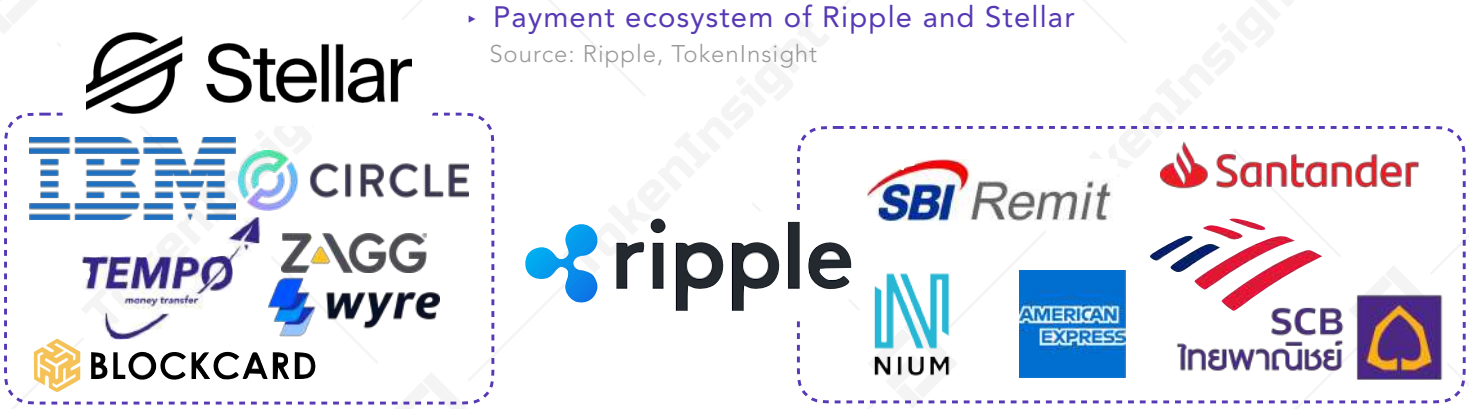
After leaving Ripple, Jed McCaled, one of the co-founders of Ripple, founded Stellar in 2014. **Stellar improves on Ripple's technology to capture high capital utilization and low price volatility at the same time**.

Stellar supports users to deposit any kind of fiat currency then issues digital versions of fiat currency on the Stellar network at a 1:1 ratio. It also supports users to exchange back traditional fiat currency at any time.

Unlike Ripple, transactions in the decentralized Stellar network will not involve the banking system, avoiding the fees that can be incurred by using the banking system. Therefore, unlike Ripple, which primarily serves financial institutions, Stellar's partners include IBM, ZAGG, and other consumer goods companies in addition to financial institutions.

‣ Payment ecosystem of Ripple and Stellar

Source: Ripple, TokenInsight



BLOCKCHAIN SOLUTION

3.3 Digital Assets Payments Represented by Flexa

Flexa

Flexa is a digital asset payment service platform for retail that started in 2018. **It addresses Bitcoin network's pain point of transactions are not able to confirm in real-time**. In 2019, Flexa launched both centralized and decentralized payment services. Its centralized payment solution works with Gemini, a centralized digital asset trading platform. Flexa supports customers to pay merchants directly with digital assets at item price, the digital assets will be settled at Gemini's real-time price. At last, the merchant will receive the payment in fiat currency.

The decentralized payment solution requires connection of users' wallet addresses on Ethereum and a certain number of Flexa native token AMP staking in the Flexa contract. When a payment is made, the AMP equivalent to the item price is locked in the Flexa smart contract. Then customers need to send the merchant-backed digital asset to the merchant's address via the wallet app, they can leave the store without waiting for the on-chain confirmation. Upon confirmation of the on-chain transaction, the locked AMP in the Flexa contract will be unlocked and available for subsequent payments. If the on-chain transaction is not confirmed, the locked AMP will be liquidated to cover the payment. **The solution has three major pain points: the size of the payment amount is limited by the amount of AMP staked, the high cost of Ethereum gas, and the relatively high threshold of using the product**.

Flexa currently supports 26 digital assets and is compatible with both Gemini and SPEDN wallet applications. Merchants accepting Flexa payments are primarily concentrated in North America. It is reported over 40,000 merchants are accepting the centralized payment method offered by Flexa. These include online shopping platforms such as Amazon and Shopify, as well as offline retailers such as Whole Foods.

▸ Payment ecosystem of Flexa
Source: Flexa, TokenInsight

BLOCKCHAIN SOLUTION

COTI

COTI Pay is a decentralized payment protocol based on Trust Chain, a PoT (Proof of Trust) consensual smart contract platform. **COTI solves the transaction amount limitation and high fees of Flexa**. Trust Chain uses machine learning and behavior tracking to assign trust scores to users. Users with higher trust scores can confirm transactions faster with lower gas fees. COTI reduces energy requirements and transaction costs by assigning trust scores, thereby increasing processing speed. It is said the network can process 100,000 transactions per second. COTI supports cross-chain transfer of ERC-20 standard digital assets on Ethereum. It also introduced a stable coin COTI dime anchored at $0.1 to avoid value fluctuations of digital assets during transactions. When customers pay different asset types than types accepted by the merchant, the transaction component COTI-X will automatically help to complete the asset exchange to meet the transaction requirements.

In theory, COTI supports all digital assets based on the ERC-20 standard. However, in practical applications, the supported assets may vary depending on the liquidity on chain. COTI pay performs user and merchant KYC certification and complies with local regulatory policies. It's currently only available in Estonia.

Valora

Valora is a mobile peer-to-peer payment application built on Celo, the underlying blockchain network that uses lightweight Proof of Stake, and goes live in February 2021. **Valora further improves the ease of product based on COTI and significantly lowers the barrier to use**. In terms of settlement speed, Celo is said to be able to process up to 1,000 transactions per second. By using the EIP-1559 gas model, Celo avoids massive network congestion when the demand for network transactions increases. In terms of fees, Celo supports users to use stable coins as gas fee, users don't have to purchase its native digital asset CELO. It largely simplifies user operations. In order to reduce the risk of price fluctuations in digital assets payments, two other stablecoins have been introduced in addition to the native token CELO. They are cUSD, anchored in USD, and cEUR, anchored in EUR, issued in cooperation with Deutsche Telekom. On the cross-chain front, Celo provided the Donut hard fork upgrade, which currently supports Ethereum and will also build bridges for Solana, Cosmos, etc. in the future.

Valora only supports CELO, cUSD, and cEUR currently. Otherwise, it supports direct transfers to and from bank accounts and centralized exchanges. Currently, Valora payments are mainly supported by gift cards, including Apple iTunes, Spotify, Uber, Starbucks, Airbnb, etc.

BLOCKCHAIN SOLUTION

Payment ecosystem of Valora
Source: Valora, TokenInsight

3.4 Integrated Payments Represented by Alchemy Pay

Alchemy Pay

Alchemy Pay is a payment platform dedicated to solutions that bridge between fiat currency and digital assets founded in 2018. **Alchemy Pay improves the digital payment network in multiple dimensions based on the payment industry and proposes a hybrid payment solution**. By connecting with blockchain network adaptation layers, Alchemy Pay ensures compatibility with various public chains and Layer-2 network assets, ensuring settlement at speeds required for commercial viability.

Alchemy Pay's settlement resources for real-time execution include major crypto exchanges such as Binance, Gemini, and OKEx.

Alchemy Pay also provides acceptance for traditional payment channels such as Visa, Mastercard, Alipay, WeChat Pay, so merchants can accept crypto payments without having to use an additional payment device or integrate with multiple payment gateways. In addition, Alchemy Pay plans to launch Visa and MasterCard virtual card services by the end of 2021 to help consumers with digital assets to pay at merchants that support Visa and MasterCard. These card services are mainly offered to enterprises and blockchain projects as white-label solutions.

BLOCKCHAIN SOLUTION

Alchemy Pay is working with Binance Pay to facilitate the exchange and settlement of digital assets using BUSD as a stable currency, with over 300 supported fiat and digital assets. Currently, Alchemy Pay provides payment services in 65 countries and regions and has interfaced with over 2 million merchants through partnerships with industry leaders such as Shopify, Arcadier, and QFPay.

▸ Payment ecosystem of Alchemy Pay

Source: Alchemy Pay, TokenInsight

Crypto.com

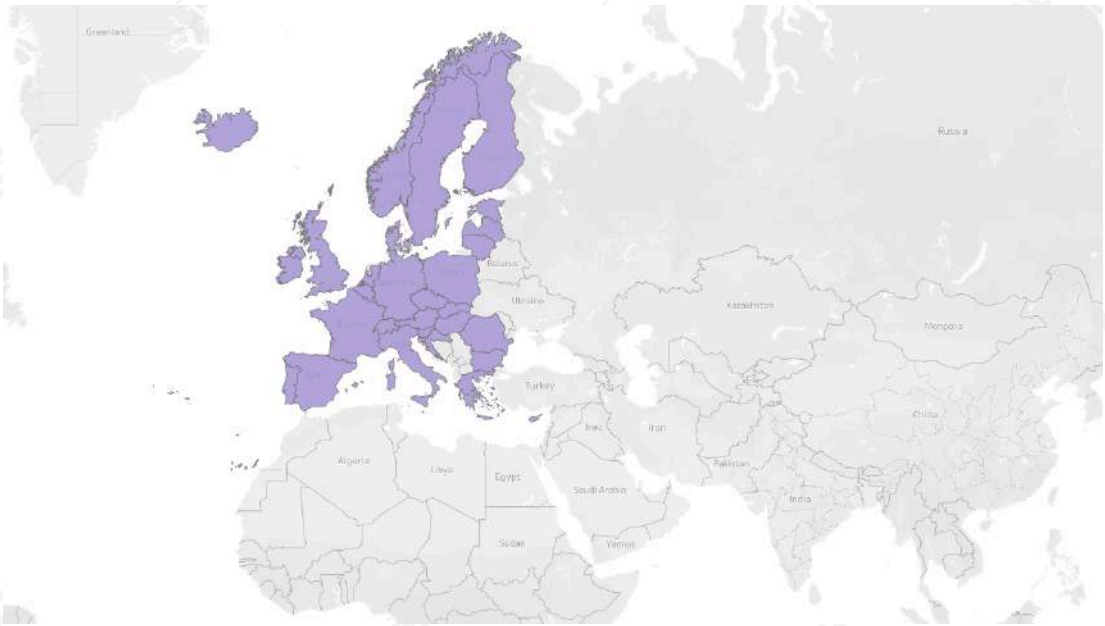
Crypto.com is a centralized digital asset payment service platform founded in 2016. The main payment products of Crypto.com are Crypto.com Pay and MCO Visa card. Crypto.com Pay supports users to transfer fiat currency in bank cards and digital assets to users and merchants authenticated by KYC. There's no on-chain gas fee, but Crypto.com charges a 0.5% transaction fee. The MCO Visa card is a digital asset debit card that allows cardholders to pay or withdraw cash in any Visa-enabled payment scenario. The digital assets will be settled into fiat currency in real-time by Crypto.com Exchange, a trading platform created by Crypto.com. To apply for an MCO Visa card, users need to purchase and stake Crypto.com's native digital asset of CRO for at least 180 days. Depending on the quantity of CROs staked, users are able to apply for different levels of MCO Visa cards.

BLOCKCHAIN SOLUTION

At present, Crypto.com has obtained legal licenses to operate in more than 30 countries and regions, including Singapore, the UK, and other European countries. It supports a total of 22 digital assets. Currently, Crypto.com pay is directly supported by merchant gift cards, including Apple iTunes, Best Buy, eBay, Starbucks, and more than 300 companies. In February of this year, Crypto.com officially announced that it had surpassed 10 million users.

- Market distribution and payment ecosystem of Crypto.com

Source: Crypto.com, TokenInsight



Binance Pay

Binance Pay is a payment platform developed by Binance, a centralized digital asset exchange. Based on its digital assets wallet, Binance Pay supports KYC-certified users and merchants to transfer digital assets with 0 fees. It also cooperates with Swipe, a financial card API service provider, to launch Visa Digital Asset Debit Card. By integrating with its centralized digital asset exchange, the Debit Card supports real-time settlement, allowing users to directly use digital assets for payments and withdraws.

BLOCKCHAIN SOLUTION

FTX Pay

FTX Pay is similar to Binance Pay, a payment platform developed by the famous centralized digital asset exchange FTX. It's nearly identical in functionality, but FTX also supports fiat currency transactions through credit cards on top of digital assets. It charges a 1% transaction fee to FTX Pay users. It also partnered with Swipe to launch the Visa digital asset debit card.

Swipe

Swipe is an API service provider for digital financial institutions. It helps to issue debit/credit cards settled with digital assets by integrating with liquidation service providers such as Visa, MasterCard, Apple Pay, Google Pay, and etc. All fees required for services are charged in the form of its native digital assets SXP.

COMPARISON OF PAYMENT ECOSYSTEM

4.1 Product Overview

Taking Bitpay, Ripple, Flexa, Valora, Alchemy Pay, crypto.com and Binance Pay as examples, the following table shows the ecological integrity of four types of payment schemes from the target markets and product layouts.

‣ Basic attributes of payment platforms

Source: Crypto.com, TokenInsight

	BitPay	Ripple	Flexa	Valora	Alchemy Pay	crypto.com	Binance Pay
Target Market	Online Retai ling.	Cross-border Payment	Online/ Offline Payment	Personal Transfer/ Online/ Offline Payment	Settlements/ Online/ Offline Payment	Online/Offline Payment	Online/ Offline Payment
Digital assets debit card	✔				✔	✔	✔
Online Payment	✔	✔	✔	✔	✔	✔	✔
Offline Payment			✔	✔	✔	✔	✔
Legal currency payment		✔	✔	✔	✔		
Digital assets payment	✔		✔	✔	✔	✔	✔
Cross chain Payment				✔	✔		
Usage Scenario	Relatively Rich	Single	Relatively Rich	Relatively Single	Rich	Rich	Relatively Single
Product Difficulty	Medium	N/A	Complex	Easy	Easy	Medium	Easy
Amount of assets	12	N/A	26	3	8	22	37

COMPARISON OF PAYMENT ECOSYSTEM

In terms of target markets, most of them are mainly online or offline retail payments, except Ripple, which mainly targets financial institutions for cross-border payments. Alchemy Pay is involved in both. From the perspective of product, platforms mostly focus on online payments and digital asset payments. Ripple mainly serves as an intermediary network for digital assets and fiat currencies and is not directly involved in digital asset payments. In terms of richness of usage scenarios, BitPay, Flexa, Alchemy Pay and crypto.com are relatively rich in usage scenarios. For ease of use, Valora, Alchemy Pay, and Binance Pay are relatively simple, except for Ripple, which is mainly targeted at enterprise users.

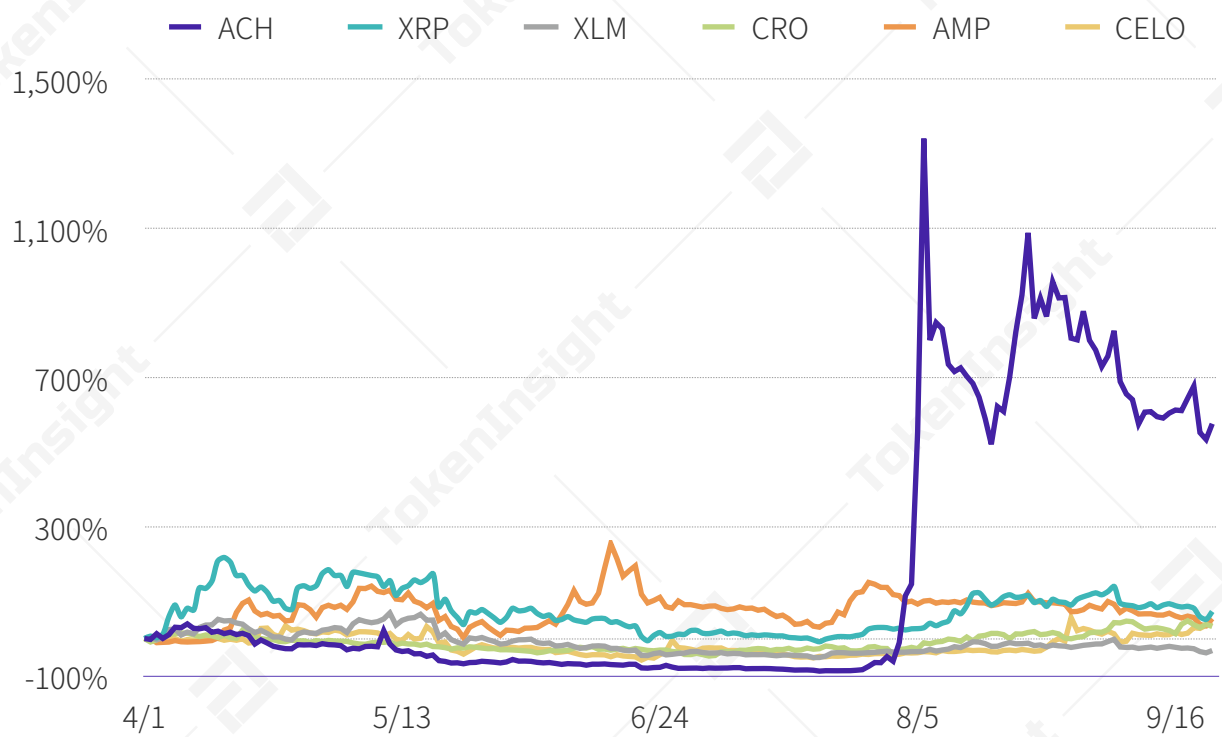
4.2 Token Economics

Most decentralized payment projects have issued payment tokens or incentive tokens in their ecosystem to better support the development of the whole payment ecosystem. The tokens of payment projects mainly have two roles: settlement assets and collateral assets. On Ripple and Stellar, XRP and XLM are used for settlement of deposit and withdrawal. CRO, ACH, and AMP are used for collateral assets on the payment platform.

According to the price trend data of tokens from April 1, 2021, to September 22, 2021. XRP, XLM, CRO, ACH, AMP, and CELO increased by 73.33%, - 32.18%, - 24.54%, 576.82%, 53.53%, and 43.23%.

▸ Price trend of payment tokens

Source: CoinMarketCap, TokenInsight. Date: 2021.9.22,18:00



COMPARISON OF PAYMENT ECOSYSTEM

According to the token data of payment platforms, the total supply of these tokens are above $10 billion, except CELO. The circulation ratio of CRO is above 60%. Other tokens are released in relatively small amounts, with circulation ratios ranging from 30% to 50%.

According to the transaction data, there is a wide span of market capitalization between platforms. The largest market capitalization is around $43 billion of XRP, the smallest is around $200 million of ACH.

Moreover, the exchange rate normally reflects the trading enthusiasm and liquidity of the tokens. ACH has a relatively high exchange rate, with an average daily exchange rate of over 20%, while the exchange rate of other tokens are less than 8%. It is worth mentioning that the exchange rate of CRO and AMP is less than 1%, reflecting the relatively stable holding.

▸ Data of payment platforms

Source: CoinMarketCap, TokenInsight. Data: 2021.9.26

	Ripple	Stellar	crypto.com	Alchemy Pay	Flexa	Celo
Tokens	XRP	XLM	CRO	ACH	AMP	CELO
Current Price	$0.9209	$0.2712	$0.1542	$0.0639	$0.0451	$6.17
Total Supply	100.00b	50.00b	30.26b	10.00b	92.55b	1.00b
Circulating Supply	46.72b	23.75b	25.26b	3.16b	42.23b	306.82m
Circulation Rate	46.72%	47.50%	83.48%	31.6%	45.63%	30.68%
Market Capitalization	$43.02b	$6.42b	$3.89b	$201.56m	$1.91b	$6.17b
Average Daily Trading Volume	$3.07b	$391.55m	$28.61m	$44.25m	$18.44m	$187.77m
Exchange Rate	7.14%	6.10%	0.74%	21.95%	0.97%	3.04%
Mkt. Cap/ Trading Volume	14.01x	16.40x	135.97x	4.56x	103.58x	32.86x

CONCLUSION AND OUTLOOK

5.1 Conclusion

This report starts from the traditional payment industry and observes the development changes and current situation of blockchain payment solutions from the perspective of the whole industry.

The global payment market size grew at an average annual growth rate of more than 20% in recent years. In the future, the market size has a tendency to expand. The structure of the payment industry has changed, with the proportion of digital commercial payments declining year by year and the proportion of mobile device payments rising year by year. 80% of the market regional size share is concentrated in the US, Europe, and China. The emerging cryptocurrency payment market accounts for a higher penetration rate in developing countries.

In the traditional payment chain, the payment transmission process is cumbersome and the friction costs are huge. Economically developed countries charge merchants higher fees in this process. The blockchain-based peer-to-peer payment method solves the problems of high fees, inefficient cross-border transfers and high costs in traditional payments.

From the perspective of blockchain payment solution development, there is a ring extension around bitcoin payments. In addition to Bitcoin, the main focus of other payment projects is on the convenience and capital utilization of cross-border transfers, the instant confirmation of offline digital asset payments, the ease of use of the product, and the diversity and anti-volatility of the supported assets for iterative upgrades.

5.2 Outlook

From a broad perspective of the whole industry, the payment industry has gone through two major phases of bank-based dominance and internet-based dominance. It is mainly consumption that drives payment demand.

In the future, the trend of bank-based revival (digital asset payments by sovereign countries) represented by DECP and the trend of decentralized digital asset payments may come together.

The future of blockchain-based digital payment projects may focus on the technical layer rather than the expansion of payment application scenarios. Celo built a DeFi ecosystem around payments. Centralized exchanges also joined forces with payment projects to build payment ecosystems. Alchemy Pay, which focuses on integrated payments, partnered with other public chains, trading platforms and DeFi projects to build the BIA (Blockchain Infrastructure Alliance). This will strengthen the collaboration of infrastructure implementation, interconnect more valuable assets and drive the payments ecosystem to flourish.

From the perspective of payment product ecology, payment product mainly focuses on the richness of supported assets, diversity of usage scenarios, ease of use and ecological integrity of the product.

TokenInsight

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