

In this quarterly newsletter, KPMG China provides our clients with up-to-date analysis of key trends and developments impacting the crypto/digital asset sector across Asia and globally.

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## El Salvador's adoption of Bitcoin: enabler for Asian markets?

El Salvador citizens can now use bitcoin to purchase goods and services, pay wages and pay taxes under the country's Bitcoin Law enacted in 2021. The move has prompted global speculation as to whether other economies, including those in Asia, may enact similar policies.

The Salvadorian government estimates that in the first three months following enactment of the law, over five million Salvadorans had opened a bitcoin wallet, while the number of people with a bank account was 1.7 million.<sup>1</sup> Based on these figures, Bitcoin has achieved financial inclusion for nearly three times more people compared to the country's banking sector. Yet current gaps in internet connectivity in rural areas as well as slow adoption by local merchants call to question whether acceptance of the digital currency in the country will truly be widespread.

Depending on how the initiative fares in overcoming these challenges, the precedent set by El Salvador could inspire other states to give legal tender to cryptocurrencies, potentially in addition to rather than as a substitute for their national currency. In Asia, several countries including Vietnam, Philippines and Sri Lanka have been identified as markets that could widely adopt cryptocurrencies, based on KPMG analysis of economic indicators including remittances, inflation rates and bank penetration rates.<sup>2</sup>

While these countries maintain independent currencies and monetary policies in contrast to El Salvador's adoption of the US Dollar, a large percentage of unbanked customers coupled with a high proportion of remittances to GDP and high inflation rate are potential indicators that bitcoin or other cryptocurrencies could be adopted as an alternative means of payment to the local currency. Another encouraging factor is the high rate of cryptocurrency acceptance already in these markets: Vietnam currently ranks number one globally on the Chainalysis Crypto Adoption Index, with roughly 6 million users, or 6.1% of the country's population.<sup>3</sup> The Philippines has 4.4 million crypto users overall (3.9% of the population), including the highest number of crypto gamers in Asia at around 3 million.<sup>4</sup>

<sup>1</sup> Based on official El Salvador government statistics cited in KPMG France, *Crypto Outlook 2022*, January 2022: <https://link.kpmg.fr/700423/2022-01-26/27pg6s>

<sup>2</sup> KPMG analysis of World Bank data on remittances/GDP (2020), inflation rates (2020), bank penetration rates (2017) and trade balance/GDP percentages (2019), cited in KPMG France, *Crypto Outlook 2022*, January 2022: <https://link.kpmg.fr/700423/2022-01-26/27pg6s>

<sup>3</sup> Chainalysis, *The 2021 Global Crypto Adoption Index*, October 2021, <https://blog.chainalysis.com/reports/2021-global-crypto-adoption-index/>

<sup>4</sup> Binance, *NFT Games in the Philippines: Exploring Play-To-Earn Opportunities*, November 2021, <https://www.binance.com/ph/blog/nft/nft-games-in-the-philippines-exploring-playtoearn-opportunities-421499624684903062>

Although these factors make government acceptance of cryptocurrencies more likely, their adoption as legal tender will ultimately depend on political conditions existing in each market, including the level of sovereign debt, current balance of trade, economic sanctions, and the structures of country-level decision-making bodies.

## Crypto metaverses, the rise of Web3 and the content economy

The inherent composability of the crypto ecosystem has led to the rise of metaverses: new, virtual worlds that combine Decentralised Finance (DeFi), digital art, digital fashion, advertising, gaming, and social interactions. The staggering popularity of non-fungible tokens (NFTs) has stemmed from a desire by internet users to regain ownership of the products of their online activity. In this respect, NFTs are the gateway to Web3 and the virtual content economy: a new dimension that is on the verge of eruption.

Web3, the internet owned by builders and users and orchestrated by tokens, represents a fundamental change in business models that will bring changes in tax rates, go-to-market strategies and ownership rights. As more and more companies operate in the metaverse, it will drive more social interaction and business online. Likewise, if people start spending more physically-conscious time in the metaverse as compared to the real world, the financial value of the metaverse may start to challenge the financial value of physical-world assets.

Metaverses to watch this year are Decentraland and The Sandbox, the latter developed by Hong Kong-based Animoca Brands. Both players are attracting investment: for example, in November 2021, Adidas launched on The Sandbox<sup>5</sup> and Nike acquired the digital shoe studio RTFKT (combining NFT and 3D models for metaverse)<sup>6</sup> while the first official metaverse embassy was created on Decentraland by the State of Barbados.<sup>7</sup> In addition, Sotheby's has been auctioning works of art at its headquarters on Decentraland since June 2021.<sup>8</sup> Meanwhile, plot prices have risen dramatically and millions of dollars are being invested to get hold of the best land for constructing virtual buildings.

## Technical solutions to scale crypto products: "layer 1" vs "layer 2" infrastructures

Ethereum is currently the leading smart contract platform. Due to its blockbuster success, the Ethereum blockchain has seen an acceleration in demand for blockspace, which has led to an increase in the fees paid by users to ensure a quick processing of transactions. This network congestion poses an obstacle for products looking to scale to billions of users. As transaction costs have risen, it is becoming more difficult to operate decentralised such as DeFi protocols, NFT platforms, decentralised games, or social networks on Ethereum.

As a result, other blockchains have emerged as alternatives to the Ethereum network — including independent first-layer (L1) infrastructures, sidechains (that use the Ethereum programming language) and plasma chains (anchored sidechains). Some are compatible with the Ethereum Virtual Machine (EVM), meaning they share the same structure and computer language as Ethereum (Polygon PoS, BSC, Avalanche), while others are not (Terra, Solana). These alternative blockchains promise a higher level of scalability, and therefore lower costs.

<sup>5</sup> International Business Times, Adidas Originals Launches NFTs After Buying Land in The Sandbox, December 2021, [tps://www.ibtimes.com/adidas-originals-launches-nfts-after-buying-land-sandbox-3398728](https://www.ibtimes.com/adidas-originals-launches-nfts-after-buying-land-sandbox-3398728)

<sup>6</sup> Nike, NIKE, Inc. Acquires RTFKT, December 2021, <https://news.nike.com/news/nike-acquires-rtfkt>

<sup>7</sup> Bloomberg, Barbados Is Opening a Diplomatic Embassy in the Metaverse, December 2021, <https://www.bloomberg.com/news/articles/2021-12-14/barbados-tries-digital-diplomacy-with-planned-metaverse-embassy>

<sup>8</sup> Sotheby's Magazine, Next Stop: The Metaverse, 2021, <https://www.sothebys.com/en/articles/next-stop-the-metaverse>

Taking Polygon as an example, we are seeing that sidechains are starting to experience the same scalability issues as Ethereum – the company’s costs have risen due to spam on the network caused by low transaction fees. As such, our view is that it will be difficult for L1 blockchains to be capable of absorbing a high number of transactions while also offering sufficient network security and decentralisation.

To date, Ethereum is “monolithic”, meaning that consensus, execution and data storage functions must be integrated in L1, which causes the network to congest. In contrast, second-layer (L2) solutions move execution and data storage outside the chain, making Ethereum modular. An emerging solution known as L2 “rollups” execute transactions outside the main Ethereum chain (off-chain) and compress the results of these transactions, recording them on the Ethereum L1 for verification. This significantly reduces the number of data stored on L1, therefore reducing transaction fees.

Of the two L2 rollup types currently available in the market, optimistic rollups are currently more widespread due to their maturity as a solution. The leading optimistic rollup platform is Arbitrum, developed by Off Chain Labs, with over 2.5 billion in total value locked (TVL) and deployed on 60 applications.<sup>9</sup> On the other hand, zero-knowledge rollups are emerging as an even more promising solution from a scalability perspective, but are technically more difficult to implement. Starkware, with its StarkEx solution is currently the leading player in this space with 1.1 billion TVL.<sup>10</sup> The technology is primarily being used for minting and trading NFTs.

Given the high costs of operating on Ethereum, we will continue to see these alternative platforms gain traction. While it is too early to tell which solution type will ultimately lead the market, we will likely see two to three major players emerge in the coming year. The solutions that ultimately gain the market advantage will be those that can maintain sufficient decentralisation while reducing transaction costs, improving scalability and safeguarding network security.

## Facing disruption: implications for traditional financial institutions

In the past year, market trends have confirmed that – even for traditional financial institutions who have been hostile to cryptoassets – it is now riskier not to be part of the crypto universe than to join it. Service areas currently being disrupted extend from payments to credit, wealth/asset management and insurance.

On the payments front, it is increasingly easy for individuals around the world to pay for their purchases in cryptocurrency. As mentioned, scalability solutions such as Lightning Network for Bitcoin and zero-knowledge rollups for Ethereum enable blockchain networks to process a very large number of transactions at minimal cost. With large-scale implementation of these solutions expected in the coming year, the payments sector is set to be permanently affected. The first segment likely to be targeted is international remittances and money transfers, in which crypto offers both lower costs and lower processing times.

Concurrently, DeFi is disrupting the credit market, providing access to loans using cryptocurrencies or NFTs as collateral. DeFi protocols such as Aave or Compound are in the process of creating liquidity pools for players who have passed through Know Your Customer/Know Your Borrower (KYC/KYB) controls, allowing secure borrowing of either crypto or traditional fiat currency. As DeFi protocols carry significant cybersecurity risks, the rise of DeFi offers a historic opportunity for insurance players who can insure assets against hackers and other cyber threats.

Meanwhile, asset management and wealth management businesses continue to be impacted by the rise of digital assets. Firstly, more and more individuals are buying Bitcoin, Ether and other cryptocurrencies to diversify their portfolios and capitalise on rising crypto prices. Secondly, DeFi is offering an alternative to traditional wealth management by offering attractive investment opportunities, high interest rates and lower transaction costs.

<sup>9</sup> CoinCulture, Ethereum Layer 2 Arbitrum Surpasses \$2.5 billion in TVL, January 2021, <https://coinculture.com/au/currencies/arbitrum-surpasses-1-5-billion-in-tvl/>

<sup>10</sup> Starkware, StarkEx Overview, updated March 2022, <https://starkware.co/starkex/>

Lastly, tokenisation is allowing real estate assets to be represented on blockchain. In the form of tokens, real estate assets acquire the characteristics of cryptocurrencies, with major advantages in terms of liquidity, transferability (including via automatic exchanges using smart contracts), fractionability and traceability, all on a secure, stable and global infrastructure. In Asian markets, regulation will largely drive how these sectors evolve over time. In anticipation of a boom in the real estate tokenisation sector, many of the exchanges awaiting licences in Hong Kong are including a platform for tokenised real estate as a core part of their business models.

Although the disintermediation of financial transactions is one of the core features of the bitcoin and cryptocurrency philosophy, traditional financial players stand to benefit from understanding the objectives of this decentralised economy so that they can position themselves in the value chain. Questions institutions should be asking include the following:

-  **How will my business potentially be disrupted?**
-  **Can my business potentially utilise new blockchain technologies being developed in the market?**
-  **What can my business learn from crypto/blockchain platforms, and how can we provide our customers access/exposure to crypto investments?**

KPMG offers a range of services related to the crypto sector, including how to incorporate crypto-specific opportunities and services into your business's growth strategy (both through organic growth and/or M&A) and audit and tax advisory services for organisations serving and supporting the crypto sector. For more information on how we can serve your organisation's specific needs, please contact us.

#### For more Crypto sector insights:

- Download KPMG's full [Crypto Outlook 2022](#) report on emerging global trends
- Read KPMG China's insights on [Decentralised Finance \(DeFi\) and Decentralised Exchanges & Automated Market Makers](#)

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