

A POLICY
FRAMEWORK FOR
BLOCKCHAIN &
DIGITAL ASSETS IN
KOREA



ABOUT GBC KOREA

GBCKorea is a blockchain company that developed GMAP, the world's first-ever Mergers & Acquisitions platform that allows everyone including small-cap retail investors to participate in M&A and other large-scale investments through the utilisation of its proprietary cryptocurrency, UCX. By providing equitable opportunities, GBCKorea is endeavouring to help usher in the era of global distributed economy.

ABOUT RIPPLE

Ripple enables payments everywhere, every way, for everyone using the power of crypto and blockchain. By joining Ripple's growing, global network (RippleNet), financial institutions can process their customers' payments anywhere in the world instantly, reliably and cost-effectively. Banks and payment providers can use the digital asset XRP to further reduce their costs and access new markets. With offices in San Francisco, Washington D.C., New York, London, Mumbai, Singapore, São Paulo, Reykjavik and Dubai, Ripple has hundreds of customers around the world.

ABOUT OXFORD METRICA

Oxford Metrica is a strategic advisory firm, offering informed counsel to boards. Their advisory services are anchored on evidence-based research in risk and financial performance. Their work includes statistical analysis and index construction for banks and insurers, risk and performance analytics for asset managers, due diligence support in mergers & acquisitions, and highly customised services for corporate boards.



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ABSTRACT - THE EMERGING BLOCKCHAIN ECOSYSTEM

Dr Rory Knight is Chairman of Oxford Metrica and chairman of the investment committee at the John Templeton Foundation. He was formerly Dean of Templeton College, Oxford University's business college. Prior to that he was Vizedirektor at the Schweizerische Nationalbank (SNB), the Swiss central bank.

The emergence of blockchain technology and digital assets will inevitably transform the global financial system into a more accessible, more transparent, fairer and efficient ecosystem. Value will be transmitted securely, person to person, as data across the internet. The new order will obviate the need to navigate the currently opaque and expensive global financial system. Individuals will have access to financial products currently beyond their reach. New products, services and industries will emerge which will stimulate the real economy and improve people's lives particularly in emerging economies.

The development across jurisdictions is not uniform and regulators appear to be taking idiosyncratic approaches on an atomistic rather than a holistic basis. Different regulators have addressed different elements of the system. Our message is that the current systems are fragile and require clear, transparent and smart regulation that aims to allow innovation to flourish for society's benefit. There is a real risk that the unintended consequences of well-intentioned regulation may result in the stifling of innovation.

The paper opens with a description of the elements that make up the emerging ecosystem with a brief primer on blockchain and a hierarchy of these elements is presented. An overview of the architecture of the ecosystem is described, followed by a practical example and a use case. In addition, a digital asset taxonomy is proposed, with a brief description of Central Bank Digital Currencies (CBDCs). The whitepaper also presents the findings of a survey of the senior management of the major financial institutions in Korea to gauge their appetite for embracing the new technology.

The whitepaper concludes with a set of policy recommendations in which we propose to strike a balance between regulatory certainty and consumer safeguards to ensure the flourishing of the new ecosystem whilst avoiding the pitfalls of smothering innovation.

The whitepaper brings together, in partnership, the considerable skills and experience of Ripple and GBCKorea; Ripple has innovated by enabling cross-border payments using the power of crypto and blockchain. GBCKorea has developed a DeFi platform providing access to sophisticated financial products for retail investors. Oxford Metrica is delighted to be able to assemble such a high-quality group to provide thought leadership in this field. I express my gratitude to my colleagues at Ripple and GBCKorea for their support of the project and I am very grateful to the many senior executives that participated in our survey.

Finally, I hope that you the reader finds the paper illuminating and that it stimulates your interest in this important discourse.



Dr Rory Knight
Chairman
Oxford Metrica

INTRODUCTORY REMARKS BY DR OKYU KWON

I had the privilege of serving as the Chief of Staff of Policy at the Blue House and the Deputy Prime Minister of Finance and Economy under the late president ROH Moo Hyun. In particular, relentlessly safeguarding the Korean economy during the Asian financial crisis in late 1990s starting with crash of Thai Baht followed by Malaysia Ringgit, Indonesia Rupiah, HK Dollar and finally leading to the Korean financial market crash in 1997 that triggered global financial instability instilled in me an evermore endearing concern for the nation's financial wellbeing. Preparing the Korean financial safety net during this period later helped enormously in insulating Korea from the 2008 global financial crisis.

In this era of breakneck speed changes and innovations, it is often difficult to discern what is truly good for the people, ordinary people of Korea and as well as those around the world. However, I am very excited to see a globally renowned major player in the blockchain world - Ripple, the uniquely innovative platform developer - GBCKorea and global thought leader - Oxford Metrica working together to present a path that offers guidance on how regulators around the world could approach blockchain and cryptocurrency related policy development as well as an unprecedented investment opportunity to everyday people.

I am certain that Ripple's leadership amalgamated with GBCKorea's unique M&A platform under Oxford Metrica's guidance will bring about never-before seen innovations. So I am pleased to congratulate them for jointly embarking on this exciting journey that will surely benefit ordinary people all around the world.



Dr Okyu Kwon
Chairman
The Hyundai Motor Chung Mong-Koo Foundation

Dr Okyu Kwon is Chairman of the Hyundai Motor Chung Mong-Koo Foundation. He is a former Deputy Prime Minister of the Republic of Korea and he served as Minister of Finance and Economy.

FOREWORD FROM RIPPLE

Brooks Entwistle is the VP and Managing Director for APAC and MENA at Ripple. Prior to joining Ripple, he served as Chief Business Officer International for Uber, responsible for Asia Pacific, EMEA and Latin America. Previously, he was the CEO of Everstone Capital, a premier India and Southeast Asia focused private equity and real estate investment firm. Before joining Everstone in 2014, Brooks was a Partner at Goldman Sachs where he spent 22 years, including 15 years in Asia. Most recently, he was Chairman of Goldman Sachs South East Asia as well as CEO of Goldman Sachs Singapore. Prior to this, he spent 5 years as CEO and Founder of Goldman Sachs India where he was responsible for leading and building the firm. He also served as the Founder & Co-Head of Goldman Sachs Asia's High Technology Group. Earlier in his career, Brooks served as a District Electoral Supervisor with the United Nations Transitional Authority in Cambodia (UNTAC). Brooks holds a bachelor's degree from Dartmouth College and a master's degree in Business Administration from Harvard Business School. He is a Board member of the Aspen Institute, EmancipAction, The John Sloan Dickey Center for International Understanding at Dartmouth College and Young Life.

Rahul Advani is the Policy Director for APAC at Ripple. Based in Singapore he is responsible for leading Ripple's engagement & advocacy with regulators and policymakers in the Asia Pacific region to support regulation that promotes responsible innovation in digital assets & blockchain technology. Prior to joining Ripple, Mr. Advani spent over 12 years in financial services, most recently as the Head of Public Policy Asia Pacific, at the International Swaps & Derivatives Association. Previously, Mr. Advani worked with Bloomberg in Mumbai, Singapore, & Hong Kong in multiple roles across valuations, business development & sales for both exchange-traded & OTC derivative products. Mr. Advani holds a Master in Public Policy from Lee Kuan Yew School of Public Policy, Singapore.

Through the power of blockchain technology and digital assets, enterprises such as Ripple are enabling seamless and instant cross-border payments. This transformation has resulted in the development of new use cases and the opening up of new markets, providing innovative pathways for individuals and businesses to access and build a more inclusive global financial system and enabling the world to move value like it moves information today. Solutions such as RippleNet, which utilises blockchain technology and the digital asset XRP, enable real-time settlement and complete end-to-end transparency into the payment process, transforming the complex and often inefficient global payments process and ultimately benefiting the consumer and real economy.

However, as is often the case with emerging technologies, the full scale and scope of the policy impact is difficult to understand and future trends are even more difficult to predict. This emerging ecosystem encompasses new types of organizations providing new services and products which provide significant benefits to the economy, but could also entail new forms of risk. Hence, the technological and economic characteristics of blockchain and digital assets require smart regulation and regulators and policymakers have the challenge of striking a delicate balance between fostering innovation while ensuring sufficient safeguards in order to reap the full benefits of this technology.

Ripple is delighted to partner with Oxford Metrica and GBCKorea in presenting this whitepaper in which we strive to provide a high-level framework for understanding the evolving blockchain and digital assets ecosystem and emerging use cases and recommend a policy framework for blockchain and digital assets in Korea.

We believe the proposals in this whitepaper strike the right balance between providing regulatory certainty and safeguards, while also having a framework that's forward-looking and flexible. We hope this whitepaper serves as a useful platform for discourse on this very important subject and can help provide a strong foundation for the blockchain ecosystem to flourish in Korea.



Brooks Entwistle
VP & Managing Director APAC & MENA
Ripple



Rahul Advani
Policy Director APAC
Ripple

PREFACE

STEVE LEE'S VISION

One of the key paradigm shifts the fourth industrial revolution triggered is the replacement of fiat money with digitalised value. On the other hand, the continuing investment information asymmetry and structural issues of the traditional financial markets have largely precluded retail investors from gaining equitable access to large-scale investment opportunities with high returns.

Utilising the blockchain technology and cryptocurrency mechanics, GBCKorea has developed GMAP (Global Mergers & Acquisitions Platform), an M&A platform that ensures security and allows anyone anywhere in the world to participate in major investment opportunities such as M&A transactions. The platform is designed to share new value created through this process with all GMAP investors.

Furthermore, GAMP (Global Asset Management Platform) is being developed by GBCKorea, which will also facilitate transactions between the assets securitised through the GMAP M&A projects by way of incorporating the DeFi environment and NFT transactions.

The ultimate goal of our platforms is to realise the distributed economy as well as the separation of management and ownership of corporations which are key evolutionary factors for equitable coexistence. By applying the technology embedded in GMAP, it will be possible to maximize the benefit with minimal cost. This in turn will pave a new path for mankind's giant leap towards a digitalised ecosystem.

GBCKorea is delighted and honoured to partner with Ripple and Oxford Metrica in the presentation of this whitepaper which we hope will contribute to the development of an efficient policy framework for regulating blockchain and digital assets in Korea. We believe that Korea is poised to take a leadership role in this new field.

As we will continue our march in building an exciting future through GMAP and GAMP, we hope you will join us on this exciting journey toward an unprecedented era of opportunity.



Steve (Jong Sung) Lee
Chairman & Founder
GBCKorea Co., Ltd.

Steve Lee is the Founder and Chairman of GBCKorea. Over a three-decade career in the financial markets, he completed numerous M&A transactions with a cumulative value of more than USD 1billion. He also served as the Chairman of the Board of several investment advisory firms based on his unique business acumen and expertise. Recognizing the weakening sustainability of the Korean M&A market following the retirement of the founder generation of Korean conglomerates, he embarked on a mission to find solutions that would revitalise the M&A market for the younger generation and has developed GMAP.

THE ELEMENTS OF A FLOURISHING BLOCKCHAIN SECTOR

The development of the blockchain sector requires that a complex interdependent ecosystem is allowed to flourish. There are many precursors necessary to support a thriving new decentralised ecosystem, which is now almost inevitable. The growth of tokenisation has allowed the evolution of new innovative digital solutions which are providing more efficient financial services to a wider group of consumers. The role of financial intermediaries is about to be redefined, but at the same time this fast-moving technological progress and the array of new firms, products and markets in this decentralised ecosystem raises considerable challenges for regulators.

The challenge for regulators lies in seeking the right balance between providing regulatory certainty and safeguards, while also having a framework that's forward-looking and flexible. This is a difficult task as even well-intentioned regulation may result in the unintentional consequence of stifling innovation. An overly cautious regulatory framework can hamper innovation, while the absence of clear regulations could breed uncertainty and chaos.

It therefore seems sensible to begin the process of policy setting with the definition of the key features of the ecosystem that will ensure its success. Understanding these elements and the interdependencies among them is essential. Paradoxically, smart regulation is itself one of the key ingredients, as regulatory certainty is necessary to encourage participation by investors and consumers without whom the new industry could migrate to other more conducive jurisdictions. We suggest that there are five crucial elements that form a hierarchy represented as a pyramid in FIGURE 1. These are:

WHAT IS BLOCKCHAIN TECHNOLOGY?

- There is a substantial literature on the topic of blockchain technology (also referred to as distributed ledger technology), which we will not review here. However, it is considered useful to provide a basic explanation of blockchain technology in order to prepare an overview of the concepts explored in this paper.
- At the elementary level, blockchain technology may be defined as a decentralized, distributed ledger that records the provenance of a digital asset using cryptography. These encrypted blocks of data are then chained together (hence the term “blockchain”) to form a chronological, single-source-of-truth for the data.
- Decentralising data on a ledger in this way ensures that the data cannot be owned, controlled, or manipulated by a central actor. Therefore, by inherent design, the data on a blockchain is immutable.
- There are two main types of blockchain networks. These are; - public blockchain networks and private blockchain networks:
- A public blockchain is accessible for anyone to join and participate in. The major drawbacks of a public blockchain might include the substantial computational power required, little or no privacy for transactions, and weak security.
- Private blockchains, on the other hand, are networks created by one organization (or a consortium of organisations) which governs the network, controlling who is allowed to join and participate in the network. A private blockchain may significantly boost trust and confidence among participants.
- In both types of blockchains, the ledger is distributed across all participants in the network and is simultaneously updated across all participants.

1. Deep markets for digital assets
2. Autonomous distributed ledger technology (DLT) (Blockchain)
3. Infrastructure platforms
4. DeFi products
5. Smart regulation

DEEP MARKETS FOR DIGITAL ASSETS

The building blocks of the blockchain ecosystem are digital assets such as bitcoin, ethereum, and XRP which are based on their own native blockchain. These digital assets include digital currencies, various tokens such as stablecoins, non-fungible tokens and central bank digital currencies (CBDCs). This layer of the ecosystem is attended by infrastructure agents that provide the mining, security and verification services to allow the coins to function. An important feature of such digital assets is crypto-diversity, to allow a rich set of use cases to evolve based on the requirements of end-users. It is precisely this organic development that nourishes further high-form financial services and a proposed taxonomy for digital assets is provided in a later section of this paper.

Digital asset exchanges provide the liquidity for the exchange of digital assets, both between tokens and with fiat currencies. The efficient working of the exchanges is crucial for the proper functioning of the ecosystem. There are now approximately 491¹ organised digital asset exchanges and platforms globally, worth trillions of dollars and providing an essential liquidity function for the market. Naturally, investor protection and ensuring compliance with Anti-Money Laundering and Counter Financing of Terrorism (AML/CFT) measures is of paramount importance, and the appropriate safeguards and warnings should be required.

In March 2020, the amendment to the Act on Reporting and Using Specified Financial Transaction Information (“Specified Financial Information Act”) was ratified by the Korean National Assembly.² The amendment to the Specified Financial Information Act defines cryptocurrency as a “virtual asset”, and creates an obligation for “virtual asset service providers” (VASPs) to register with the Korean Financial Intelligence Unit (KoFIU) and also requires AML/CFT reporting of obligations with regard to virtual assets services.

The policy intent behind the amendments to the Specified Financial Information Act are sound, which is to manage AML/CFT risks for virtual assets and intermediaries. However, the implementation of the amendments has had unforeseen consequences.

Firstly, registration with KoFIU mandates the use of real-name verified bank accounts by VASPs for financial transactions with their customers. Additionally, VASPs are required to obtain a certificate of Information Security Management System (ISMS) from the Korea Internet & Security Agency (KISA).

These requirements have proven to be extremely stringent and the majority of exchanges onshore have not been able to meet both requirements. To date, this has effectively culled the number of exchanges that can offer fiat-token services from over 200 to 4, while

1. See footnotes on page 23

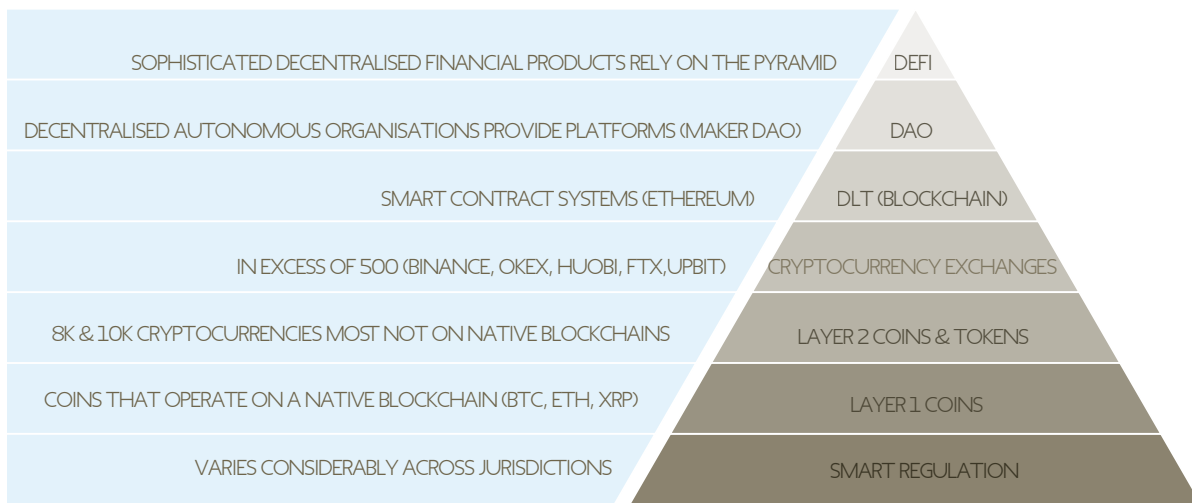


FIGURE 1. Blockchain ecosystem hierarchy

39 entities have managed to receive only ISMS certification and hence can operate token-token services only.³ This illustrates that a well-intentioned intervention to protect investors and improve transparency can dramatically affect the development of the ecosystem in Korea in unpredictable ways.

Another unforeseen consequence from the implementation of the Specified Financial Information Act is the stifling of innovation in the blockchain and digital assets ecosystem. This is because the definition of “virtual asset” is rather broad, covering “a digital token with economic value that is digitally tradable and transferable”. The definition of “virtual asset service provider” is also similarly broad, encompassing “virtual asset trading service providers, virtual asset safekeeping and administration service providers and virtual asset digital wallet service providers engaged in the purchase and sale, exchange and transfer, safekeeping and administration, or intermediation and brokerage of virtual assets and virtual asset transactions”.³ This lack of a risk-sensitive regulatory framework means that any entity that uses digital assets in their solutions could be liable to register and report to KoFIU which acts as a disincentive to innovation in the sector.

It also needs to be highlighted that the participation by financial institutions in these markets is necessary to support liquidity and allow digital assets to enter the mainstream. Therefore, regulatory clarity is essential in order to encourage financial institution participation in the blockchain ecosystem. Financial institutions need clarity on where digital assets and related activities lie on the risk spectrum in order to mitigate the potential of developing and investing in technology that is unregulated.

AUTONOMOUS DISTRIBUTED LEDGER TECHNOLOGY (BLOCKCHAIN)

The development of private and public blockchains is the next level of necessary infrastructure and the distributed ledger technology is itself the DNA for each individual digital asset. In addition, the various blockchains act as a higher-level organism in providing a working platform for other services. This layer provides the necessary infrastructure for cross-border payment systems and many neo-banking services. RippleNet is one such blockchain-based payment system which in turn provides a critical base for upstream products and services to financial institutions and end-users.

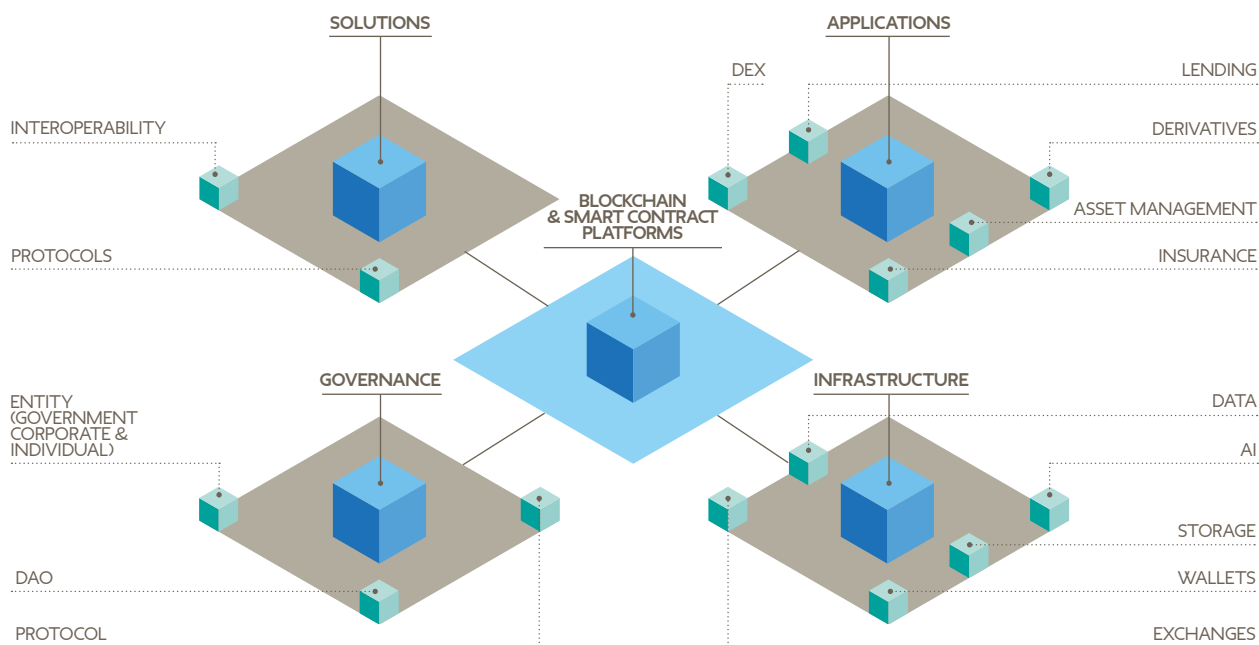


FIGURE 2: Blockchain ecosystem architecture

INFRASTRUCTURE PLATFORMS

The emergence of a new level of Decentralised Autonomous Organisations (DAO) which provide platforms on which others are able to develop DeFi applications is crucial. An example is MakerDao which provides a stablecoin and lending platform. These platforms which tend to specialise in specific use cases, are an essential component for further DeFi development and they themselves rely on layers of technology and service upstream.

DEFI PRODUCTS

The more sophisticated DeFi products are now emerging adding a further layer to the pyramid. These higher-life forms such as GBCKorea's GMAP allow retail investors to have access to large M&A transactions usually reserved for institutions. This product requires the use of its own (UCX) and other digital assets (bitcoin, ethereum and XRP), a native series of tokens and a cross-border payment system to function. Such products are only possible because of the well-functioning layers further upstream.

SMART REGULATION

In a later section of the paper, we review the approaches taken by a number of jurisdictions on regulating the sector. Here we wish to identify the general features of smart regulation and in the penultimate section to this paper we provide specific policy recommendations. We suggest that regulators should adopt a holistic approach to regulating the sector, rather than an atomistic approach which currently prevails. As is often the case with any disruptive technology, under-regulation can be equally as risky as over-regulation. Left unregulated, the industry is vulnerable to fraud and therefore regulators and policymakers have the monumental challenge of striking a delicate balance between fostering innovation while ensuring sufficient safeguards. The challenge, therefore, lies in seeking the right balance between providing regulatory certainty and safeguards, while also having a framework that's forward-looking and flexible. An overly cautious regulatory framework can hamper innovation, while the absence of clear regulations could breed uncertainty and chaos. A successful and vibrant digital assets ecosystem is dependent on a clear, agile regulatory framework. Smart regulation should also be technology-agnostic and should not explicitly or otherwise endorse any particular technology. This means that financial services using digital assets as a solution should not be treated differently from financial services embedding legacy architectures and there should be parity in the treatment of all technology. Another development is the intention of many Central Banks to issue Central Bank Digital Currencies. A key challenge for the adoption of CBDCs is in ensuring interoperability and partnership with the private sector to support interoperability is essential. CBDCs are explained further below.

CENTRAL BANK DIGITAL CURRENCIES (CBDCS)

A CBDC is a central bank-issued digital currency that represents a liability of the central bank. CBDCs can be either retail (the digital equivalent of cash for use by households and businesses), or wholesale (accessed only by financial institutions; similar to existing central bank settlement accounts).

As part of their remit of continuing to evolve money and payments, Central Banks around the world are beginning to explore, test and implement some form of CBDC.

There are a number of reasons for the growing momentum behind offering sovereign-backed versions of private cryptocurrencies.

KEY FINDINGS OF RECENT RIPPLE SURVEY:

Trend for declining cash use has been accelerated by COVID-19 as more people shop online and opt for contact-free payment options.

14 of US consumers used cash less often since the pandemic began.

Facebook's announcement of plans to create its own digital coin prompted fears that it could undermine the traditional global financial system.

2.4 billion users is the potential global reach of Facebook-backed currency.

China's testing of a digital yuan payment system potentially threatens the U.S. Dollar's position as the dominant global reserve currency.

Feb 2022. Proposed launch date for China's CBDC.

There is a growing need for a more effective way for governments to pay benefits or stimulus money directly to citizens, especially the unbanked.

1.7 billion. Number of unbanked adults across the world.

THE RISE OF CBDCS

Through the power of blockchain technology, financial institutions are enabling seamless, instant global payments. Each Central Bank will also have its own motivations for pursuing a digital currency that will be driven by specific market challenges and opportunities.

The nature of that primary goal - whether it's overcoming limitations of existing payments infrastructure, promoting financial inclusion, boosting competition or fostering innovation - will determine the approach and technology of each CBDC.

It is likely that we will end up with a world of diverse CBDCs, which makes interoperability critical. Though most Central Banks are focused on solving domestic problems, the global nature of trade and finance means cross-border coordination must be baked into the original recipe of each CBDC.

The internet became a global tool for the exchange of information because the world agreed to build it using common standards. Likewise, CBDCs can adopt open payments protocols and use neutral bridge assets to facilitate a frictionless exchange of value across borders.

Without this crucial interoperability, Central Banks will be putting limits on their CBDC's success while compromising the future of their financial system - instead of developing a more effective and inclusive evolution of money.

THE MAJOR BENEFITS OF CBDCS INCLUDE:

- Increase speed, efficiency & security of payments
- Increase access to services for the unbanked
- Reduce frictions in global financial markets
- Innovation will be fostered to improve services
- Retains Central Bank control over fiat money

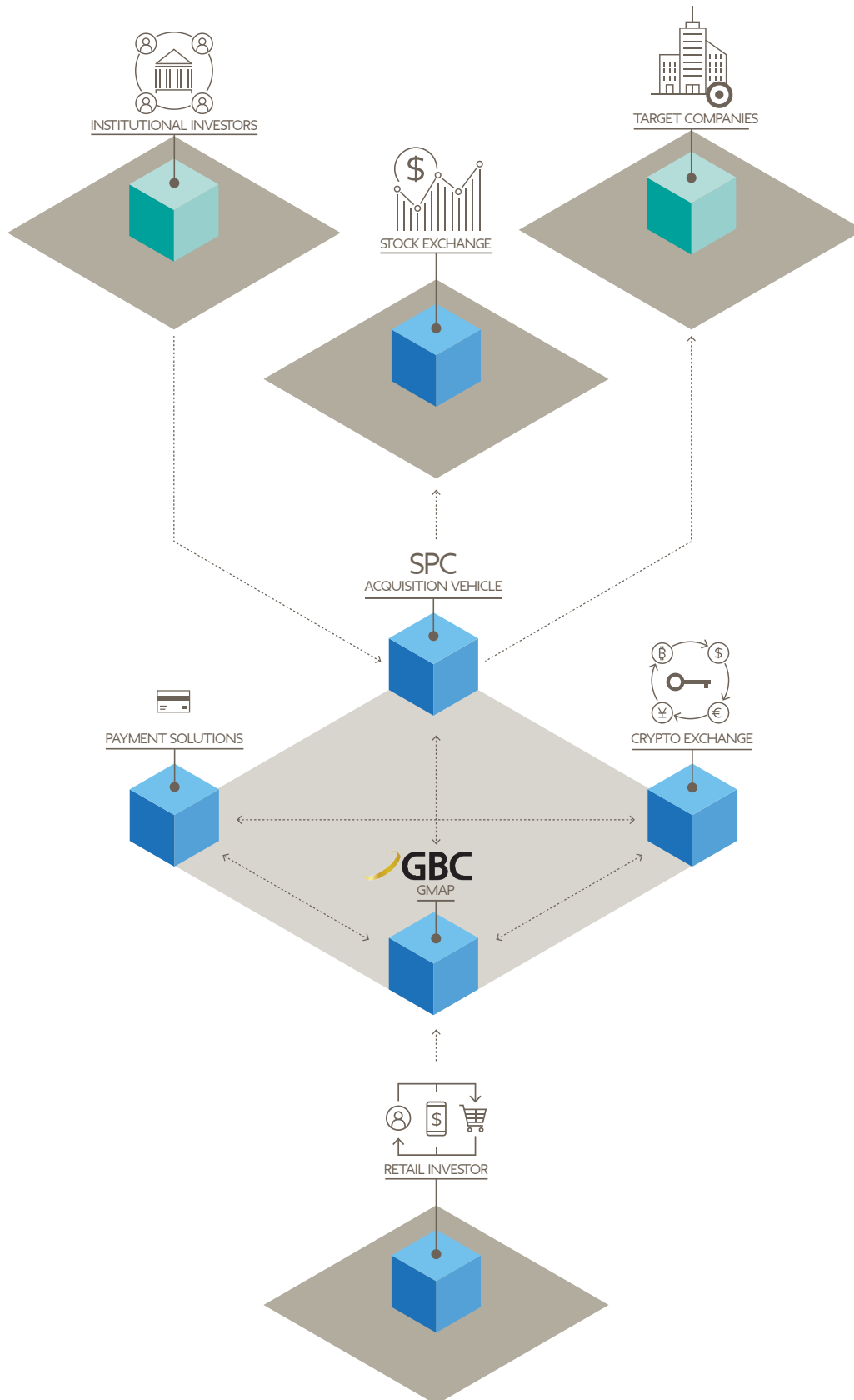
THE MAJOR CHALLENGES ARE:

- International payments
- Verifying identification
- Including non-bank channels

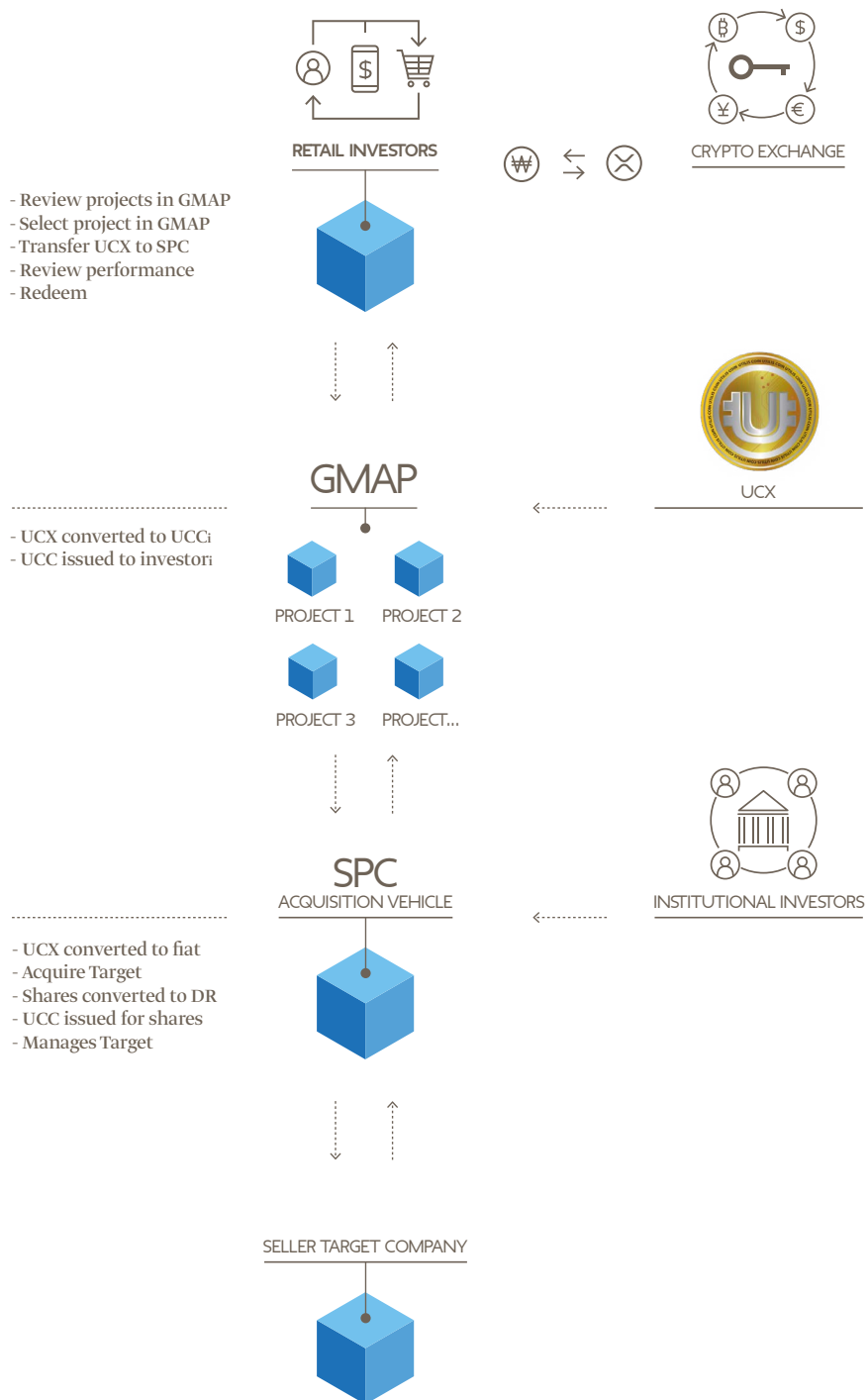
KEY RESPONSES ARE:

- Ensure interoperability
- Promote public private partnerships
- Integrate neutral bridge currencies

BLOCKCHAIN, DIGITAL ASSETS, CAPITAL MARKETS ECOSYSTEM ARCHITECTURE



GBC KOREA'S GMAP ARCHITECTURE



USE CASE: CROSS-BORDER PAYMENTS USING RIPPLENET

REVOLUTIONISING CROSS-BORDER PAYMENTS

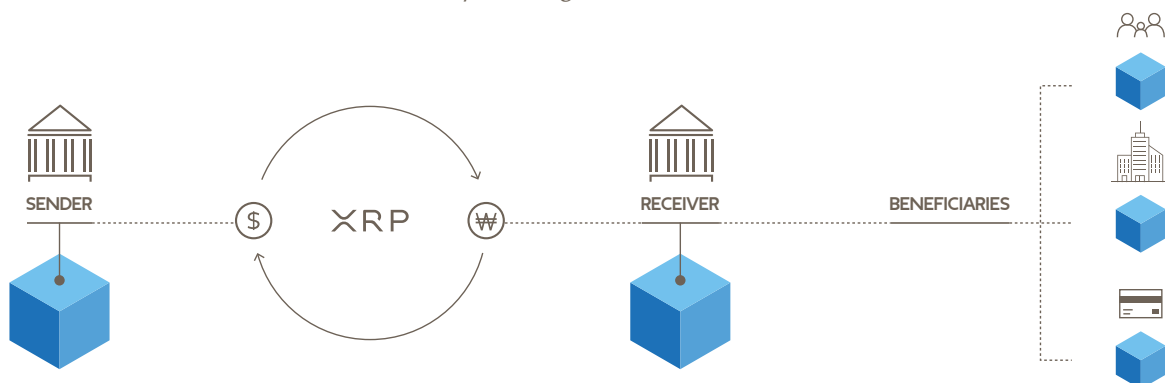
As outlined in the earlier sections of this paper, blockchain technology has been a promising breakthrough, demonstrating the potential to transform many sectors of the Korean economy. However, for any technology, success is based on its use cases and ability to solve real-world problems and to provide benefits to consumers and end-users. A variety of use cases have emerged as blockchain and digital assets technologies have matured. We highlighted a Korean M&A use case in page 14. Here we provide another.

Cross-border payments are costly, full of friction and slow. Much of this friction is the result of processes followed in cross-border payments, heretofore the domain of incumbent banks (referred to as correspondent banks). A definition cited by the Bank for International Settlements defines correspondent banking as “the provision of current or other liability account and related services to other financial institutions (including affiliates), used for the execution of third-party payments and trade finance as well as its own cash clearing, liquidity management, short-term borrowing and investment needs in a particular currency”.

As this definition highlights, banks use correspondent relationships - a network of bilateral accounts-based relationships - spread across the world to process payments originating from their corporate and retail clients. Although widely proliferated, the market structure of correspondent-banking injects significant friction, delay and costs in processing payments for the respondent banks, primarily due to the need to prefund accounts. This materially affects small businesses and retail consumers relying on these banking networks in consequential ways.

Digital assets issued on blockchains that serve the same end-use as the incumbent correspondent banking model can offer a compelling alternative for end-users while still being compliant with AML/CFT requirements. Global multilateral bodies have also recognized the potential digital assets and blockchain technology have in faster cross-border payments.

RippleNet, the cross-border payments solution offered by Ripple, connects hundreds of financial institutions around the world via a single API which makes transferring money faster, cheaper and more reliable. It also helps to reduce, and even eliminate, the need to pre-fund accounts with On-Demand Liquidity (ODL)—a service that uses the digital asset XRP to source liquidity during cross-border transactions as an alternative to traditional funding mechanisms. RippleNet customers can use XRP to bridge two currencies in a matter of minutes, ensuring payments are quickly sent and received in local currency on either side of a transaction. The digital asset XRP is ideally suited for global payments because it is quicker, less costly, more scalable and sustainable than any other digital asset.



THE DIGITAL ASSET TAXONOMY

COMPARING DIFFERENT APPROACHES

In order to reduce regulatory uncertainty and provide clarity to the legal character of digital assets, it's important for regulators to develop a taxonomy for digital assets. It is essential to note that there is no single or generally recognised definition of digital assets at present and we suggest that such assets should not be solely defined relative to a specific technology (e.g., cryptography), but, for the purposes of regulation, should instead fall under a broader heading such as digital assets and subsequently classified depending on the particular economic function and purpose they serve.

There is a burgeoning literature on the taxonomy of digital assets. However the equivalent of a Linnaean system has not emerged.⁴ Many classifications are entirely based on technological considerations which deal with how the assets are operated and managed rather than their economic purpose and function. Therefore, we would encourage regulators to develop a taxonomy based on the functionality and economic purpose of the digital asset as the basis of a taxonomy.⁵ TABLE 1 sets out the various primary use cases for different digital assets, acknowledging that digital assets may have multiple use cases.

The OECD has proposed a three-way classification similar to the FCA which groups digital assets into payment tokens (this includes cryptocurrencies), security tokens and utility tokens. TABLE 2 reports the OECD classification scheme with some examples

Looking at individual jurisdictions, under the Payment Services Act 2009, the Japanese Financial Services Agency (FSA) defines cryptoassets as a means of payment for purchase of goods, lease of goods or as consideration for services rendered, electronically recorded and not denominated in fiat currency. Japanese law defines cryptoassets exclusive of Electronically Recorded Transferable Rights (ERTR), which are defined as digital assets that are issued with the expectation of profits in the form of dividends which are equivalent to security tokens.⁶ Finally, utility tokens are defined as digital assets that are used solely to access an online platform or as a means of payment for goods and services on the platforms.

The Financial Conduct Authority (FCA) in the United Kingdom (UK) has provided a degree of clarity by categorising digital assets based on their intrinsic structure as well as their designed use which is outlined in the FCA Guidance on Cryptoassets (FCA Guidance) issued in July 2019.⁷

Under the FCA Guidance, security tokens, which are described as “tokens with specific characteristics that mean they provide rights and obligations akin to specified investments”, fall within the FCA's regulatory perimeter as well as that of the Prudential Regulatory Authority, as the case may be.⁸

This stands in contrast to exchange tokens which “can be used to facilitate regulated payment services”⁹ and utility tokens, which “provide[s] consumers with access to a current or prospective product or service and often grant[s] rights similar to pre-payment vouchers”¹⁰, which are both considered to be “unregulated tokens” (i.e., tokens that do not provide rights or obligations akin to specified investments) that fall outside the FCA's regulatory perimeter.¹¹

Finally, the Monetary Authority of Singapore (MAS) has taken a similar approach, where digital assets are regulated either as digital payment tokens (DPT) under the Payments Services Act (PS Act),¹² or as digital tokens which constitute capital markets products and are regulated under the Securities and Futures Act (SFA).¹³











PAYMENTS	STORE OF VALUE	STABLECOINS	UTILITY TOKENS	SMART CONTRACTS
PAYMENTS TOKENS THAT ENABLE FASTER AND MORE EFFICIENT TRANSFERS THAN TRADITIONAL PAYMENTS SYSTEM	A DIGITAL STORE OF VALUE	PEGGED TO STABLE RESERVE ASSETS SUCH AS FIAT CURRENCIES	PROVIDE USERS WITH EXCLUSIVE ACCESS TO A PRODUCT OR SERVICE	SELF-EXECUTING CUSTOMIZABLE CONTRACTS
				
XRP	BITCOIN	USD COIN	FILECOIN	ETHEREUM
				
BITCOINCASH	LITECOIN	TETHER	UCX	SOLANA

TABLE 1. Sample use cases of digital assets

PAYMENT TOKENS (VIRTUAL CURRENCIES)	SECURITY TOKENS (ASSET & FINANCIAL)	UTILITY TOKENS (CONSUMERS)
INTENDED TO OPERATE MOST SIMILARLY TO TRADITIONAL, FIAT CURRENCIES (LEGAL TENDER BACKED BY THE ISSUING GOVERNMENT).	DESIGNED AS TRADEABLE ASSETS THAT ARE HELD FOR INVESTMENT PURPOSES AND CLASSIFIED AS A SECURITY OR EQUIVALENT BY REGULATION.	THEIR PRIMARY USE IS TO FACILITATE THE EXCHANGE OF OR PROVIDE ACCESS TO SPECIFIC GOODS OR SERVICES.
PAYMENT TOKENS ARE USABLE AS A MEANS OF EXCHANGE FOR GOODS OR SERVICES, AND POSSIBLY AS A STORE OF VALUE AND AS A NUMERAIRE (UNIT OF MEASUREMENT). THESE INCLUDE STABLECOINS AND CENTRAL BANK DIGITAL CURRENCIES (CBDCS)		THEY MAY ACT AS A LICENCE TO ALLOW THE HOLDER ACCESS TO A PARTICULAR SERVICE, AS A PRE-PAYMENT OR VOUCHER FOR A GOOD OR SERVICE, EVEN IF THESE ARE NOT YET AVAILABLE.
EXAMPLES INCLUDE: BITCOIN, XRP, ETHER & UCX.	EXAMPLES INCLUDE: SPICE, TZERO & BCAP.	EXAMPLES INCLUDE: STORJ - A TOKEN THAT PROVIDES ACCESS TO A PEER TO PEER NETWORK CLOUD STORAGE SERVICE, OR THE BASIC ATTENTION TOKEN USED BY THE BRAVE SEARCH-ENGINE TO REWARD USERS FOR THEIR SEARCH DATA & UCC BY GMAP (GBC).

TABLE 2. OECD Classification of cryptoassets

NURTURING BLOCKCHAIN IN KOREA

SURVEY OF KOREAN FINANCIAL INSTITUTIONS

Korea is renowned for its innovation and technological prowess and therefore the essential ingredients are in place for Korea to take a lead in developing a blockchain ecosystem - a deep pool of talent capable of supporting a vibrant Financial Technology industry and broad and deep markets for digital assets. Korea consistently ranks amongst the top in global volumes for digital assets traded. However, although many of the key ingredients presented earlier in this paper are present, two key elements need to be carefully cultivated: the participation of financial institutions and a smart regulatory framework.

In order to gauge the appetite among the leading Korean financial institutions for the development of blockchain technology, Oxford Metrica conducted a survey of the CEOs or Chairmen of the largest financial institutions in Korea. A focused survey instrument was developed and circulated and the survey results were collected and follow up interviews were conducted where necessary for any clarification.

The results were extremely encouraging and revealed a considerable interest in the development of the blockchain ecosystem. Firstly, all of the respondents indicated that they had an interest in and were actively pursuing the idea of adopting the technology as a part of their mainstream operations. Furthermore, in terms of how far they had progressed towards implementation, again all respondents had progressed beyond the preliminary research phase, while 40% had developed a proof of concept and 60% were in the pilot stage. Interestingly though, none of the respondents had progressed to full production with the launch of a solution.

The diagram below illustrates the spectrum of progression from research through proof of concept and pilot launch to full production. It will be noted that the financial industry in Korea collectively appears to be poised on the threshold of production. It is noteworthy that regulatory clarification was indicated as causing some hesitation in these firms to move into production.

In terms of the lines of business that were being pursued by these institutions, there was a noticeable concentration towards payments (80%) and to a lesser extent capital markets (20%). In most cases, only one line of business is being pursued in a pilot project, while in all cases respondents indicated they would consider using digital assets for payments. When further probed as to which particular digital asset would be adopted, 20% indicated XRP, while the rest indicated unspecified digital assets other than ether and bitcoin. The feature of digital assets that was identified as being most beneficial is reliability and rated second was competitive foreign exchange rates. Finally, on the subject of the preferred type of digital asset CBDCs were the most popular (90%) followed by non-bank stablecoins (10%).



In summary, it appears that there is a strong appetite among the leading financial institutions to participate in the blockchain economy as a mainstream activity. However none has yet ventured into full production mode. Payments would appear to be the first line of business of interest, while a CBDC was the most popular potential digital asset. Regulatory clarity will go a long way to giving financial institutions the comfort needed to progress with adopting blockchain solutions.

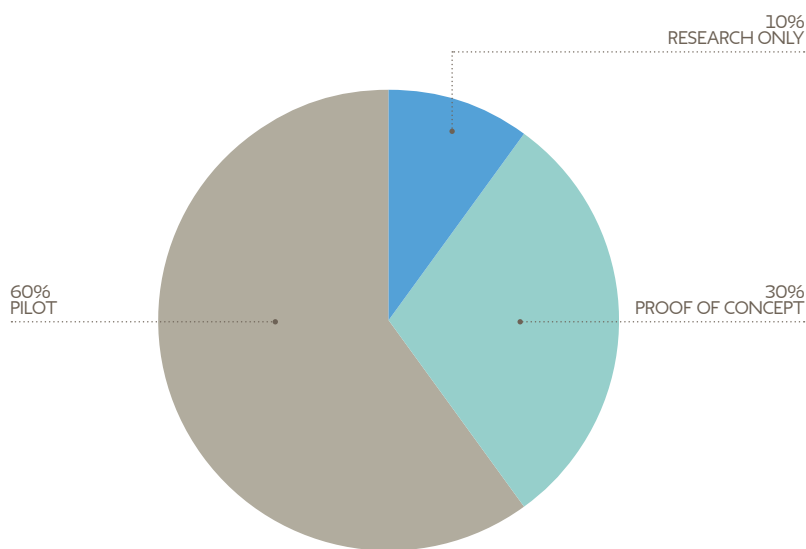


FIGURE 3: Stage of progress in blockchain adoption by Korean Financial Institutions

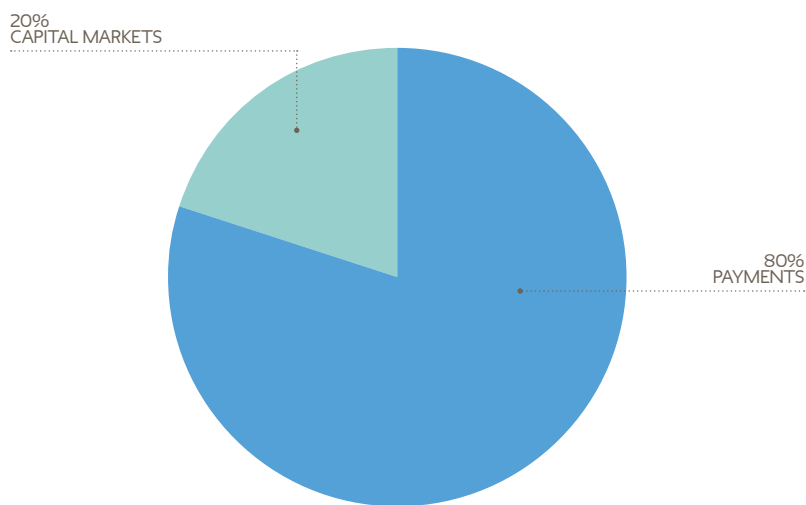


FIGURE 4: Initial business lines in blockchain adoption by Korean Financial Institutions

POLICY RECOMMENDATIONS

As highlighted in this paper, smart regulation that unlocks value from financial innovation while at the same time is risk-based is eminently achievable. An agile and risk-sensitive regulatory framework for digital assets and a clear set of ‘rules of the road’ that enable innovation to flourish will lay a strong foundation for a vibrant digital asset ecosystem to take root. With that in mind, we propose the following recommendations for developing the digital asset ecosystem in Korea which will also help provide clarity to the legal character of digital assets in Korea.

ADOPT A DIGITAL ASSET TAXONOMY ALIGNED WITH GLOBAL BEST PRACTICES

The definition of “virtual asset” under the Specified Financial Information Act is rather broad as it covers “a digital token with economic value that is digitally tradable and transferable”. In line with global practices, we recommend that there be a clear distinction between payment tokens, utility tokens, and security tokens, as outlined below:

- Payments or Exchange tokens: to describe non-fiat native digital assets that are used as means of exchange and have no rights that may be enforced against any issuer;
- Utility tokens: to describe those digital assets that create access rights for availing service or a network, usually offered through a blockchain platform; and
- Security tokens: to describe tokens that create rights mirroring those associated with traditional securities like shares, debentures, security-based derivatives, and collective investment schemes.

Such a taxonomy will make it very clear where digital assets and related activities lie on the risk spectrum which mitigates the potential for developing and investing in technology that is unregulated.

IMPLEMENT A RISK-SENSITIVE DIGITAL ASSET REGULATORY FRAMEWORK

The definition of “virtual asset service provider” under the Specified Financial Information Act is also similarly broad, encompassing “virtual asset trading service providers, virtual asset safekeeping and administration service providers and virtual asset digital wallet service providers engaged in the purchase and sale, exchange and transfer, safekeeping and administration, or intermediation and brokerage of virtual assets and virtual asset transactions”. In practical terms, this means that any solution incorporating digital assets could be considered a virtual asset service provider and therefore be liable to register and report to KoFIU even if the solution poses minimal risk. The lack of a risk-sensitive regulatory framework may act as a disincentive to innovation in the sector. In addition to the recommended taxonomy for digital assets, policymakers and regulators in Korea should also consider an appropriate regulatory framework for digital assets in order to provide certainty and encourage innovation in the sector. We recommend that the regulatory framework should align with the following broad principles outlined below:

- The regulatory framework should be technology-agnostic and should not explicitly or otherwise endorse any particular technology. This means that financial services using digital assets as a solution should not be treated differently from financial services embedding legacy architectures and there should be parity in the treatment of all technology;

COUNTRY	AML/CFT REQUIREMENTS	LICENSING REQUIREMENTS
AUSTRALIA	YES, UNDER AUSTRAC REGISTRATION REQUIREMENTS	CURRENTLY REGISTRATION WITH AUSTRAC. REGULATORY FRAMEWORK FOR LICENSING OF INTERMEDIARIES EXPECTED
ABU DHABI GLOBAL MARKETS (ADGM)	YES	YES
EUROPEAN UNION	PROPOSED UNDER MICA	PROPOSED UNDER MICA
JAPAN	YES	YES
NEW ZEALAND	YES	LICENSING REQUIREMENTS BEING CONSULTED UPON
SINGAPORE	YES	YES
UK	YES	YES

- Given the dynamic nature of digital assets, prescriptive regulation risks obsolescence. Prescriptive regulation could also have the unintended consequence of hindering innovation. Therefore, we recommend considering a principles-based regulatory framework which will guide market participants to regulatory and policy goals without imposing an overly prescriptive and onerous process in doing so; and

- The regulatory framework should use a risk-based approach to identify digital asset services that pose sufficient risk to warrant regulation and where such risks are crucial to address. This is in order to build a simple, secure and accessible digital assets ecosystem that will encourage investment into digital assets in Korea, while mitigating any potential risks.

The recommended regulatory framework should be forward-looking and flexible while providing regulatory certainty and consumer safeguards.

DIGITAL ASSET INNOVATION SANDBOXES SHOULD BE FOSTERED

An innovation sandbox is a formal regulatory programme for market participants to test new and innovative products, services and business models with end-users in a controlled environment while being subject to regulatory oversight. However, the Korean regulators currently do not offer any opportunity for digital assets in a sandbox environment. In order to incentivise innovation and inform the development of a clear and consistent regulatory framework for digital assets, we believe innovation sandboxes should be encouraged, at the very least for specific use cases such as cross-border payments and capital markets, as highlighted in this paper.

PUBLIC-PRIVATE COLLABORATION IS ESSENTIAL

Finally, any policy framework intended to regulate digital assets should promote an active dialogue between regulators and market participants. Such public-private collaboration will lead to more appropriate and effective policy outcomes for the industry and consumers alike. A collaborative forum that brings regulators and industry stakeholders together to build a rational and holistic framework for blockchain and digital assets would represent a substantial step forward toward achieving regulatory clarity.

CONCLUSION

The proposed policy recommendations discussed in this paper seek to provide legal clarity to industry, markets, and consumers on the nature of blockchain and digital assets in Korea. We believe that each of the above policy proposals - whether implemented separately or together - can succeed in achieving the policy goal of fostering innovation while ensuring sufficient safeguards.

TABLE 3. Comparative regulation

FIGURE SOURCES

FIGURE 1: Oxford Metrica

FIGURE 2: Oxford Metrica & Ripple

FIGURE 3: Oxford Metrica

FIGURE 4: Oxford Metrica

TABLE SOURCES

TABLE 1: Ripple

TABLE 2: OECD, Taxing Virtual Currencies: An overview of Tax Treatments and Emerging Policy Issues, October 2020, p.12.

TABLE 3: **Australia:** <https://www.legislation.gov.au/Details/C2021C00243>
Abu Dhabi: <https://www.adgm.com/documents/legal-framework/-guidance-and-policyfsra/guidance-on-regulation-of-virtual-asset-activities-inadgm.pdf>
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Singapore: <https://sso.agc.gov.sg/Acts-Supp/2-2019/Published/20190220?DocDate=20190220>
UK: <https://www.fca.org.uk/publication/policy/ps19-22.pdf>

FOOTNOTES

1: [Coinmarketcap.com](https://www.coinmarketcap.com)

2: All references in this paper to Korea refer to the Republic of Korea.

3: <https://www.fsc.go.kr/eng/pr010101/22325>

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5: https://ww2.deloitte.com/content/dam/Deloitte/xs/Documents/finance/me_Digital-Custodian.Whitepaper.pdf

6: For the purposes of this paper, we are relying on the following translation:
<http://www.japaneselawtranslation.go.jp/law/detail/?id=3707&vm=04&re=02>

7: <https://www.fca.org.uk/publication/policy/ps19-22.pdf>, Guidance on Cryptoassets: Feedback and Final Guidance to CP 19/3.

8: FCA Guidance, Paragraph 1.9, page 4.

9: FCA Guidance, paragraph 2.15, page 11.

10: FCA Guidance, paragraph 2.21, page 13.

11: FCA Guidance, Appendix 1, paragraph 43, page 35 and paragraph 50, page 36.

12: <https://sso.agc.gov.sg/Acts-Supp/2-2019/Published/20190220?DocDate=20190220>, Republic of Singapore Payment Services Act 2019

13: <https://sso.agc.gov.sg/Act/SFA2001>, Republic of Singapore Securities and Futures Act (chapter 289)

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BANKING

BNY Mellon
Credit Suisse
Deutsche Bank
Invesco
Schroders
Templeton & Phillips
UBS

ENERGY & MINING

BP
De Beers
Exxon Mobil
Gazprom
Gold Fields
Royal Dutch Shell

FOOD

DongA One
General Mills
Nestlé

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Merck Serono
Natura
Novartis
Novo Nordisk
Solvay

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Aker Solutions
BAA
BAE Systems
General Electric
INI
Jardine Matheson
Kone

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