

The Future of Digital Assets: Trends, Challenges, and Opportunities

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Introduction

Every year in the Netherlands, on April 27th, the Dutch celebrate King's day. On this day the country turns orange, and the Dutch government allows both adults and children to make a small profit by street sales or playing games. This year, my nine year old daughter and I practised a game that, when played perfectly, would let her always win. On April 27th she was ready to take on anyone willing to buy-in with only one coin (50 euro cents) per game. She set up the game board, together with a small box in which she would pile the coins. However, I did not anticipate our neighbour joining for a game who then asked if he could transfer 50 euro cents with the ING app, claiming that "everything in this world is becoming digital, even King's day payments". I guess there's improvement to be made on my side for his customer experience.

But my neighbour did raise a valid point. There is a global attention on digital assets. But what are digital assets exactly? And what are its current challenges? And if there are challenges, what are the benefits of digital assets? To answer these questions I interviewed ten experts individually over the past few weeks. These experts are employed in various domains including strategy, financial markets, risk, compliance, and innovation, and deal with digital assets on a daily basis. Interestingly, there are common threads in the answers provided by these experts, which I would like to share with you.

Trends

There is a significant, global interest in digital assets. To name a few, Germany (Bundesbank), France (Banque de France), the Netherlands (De Nederlandsche Bank), Sweden (Riksbanken), the US (US Treasury), and China (People's Bank of China), all have shown interest in, or have already deployed digital assets.

Furthermore, Google trends shows a large increase of interest in the term digital assets since mid-2019. But it is not only governments, central institutions, and search engine users that are interested in digital assets. Research reports by commercial parties have mushroomed, and almost 30.000 white papers on digital assets can be found through Google. A recent report by Fidelity Digital Assets, for example, states "... European investors have a more progressive view of digital

assets.” [1].According to the same report, US investors have an increased positive perception on digital assets, whereas their concerns about digital assets declined. Also, a recent report by Deloitte states that there is a global interest in digital assets, as these assets provide many benefits [2]. These reports, however, do not provide an exact definition of what a digital asset is. This raises the question, what is a digital asset?

Digital assets

All experts that I interviewed agreed that, currently, there is not a common definition of the term digital assets. Indeed, a Google search provides a wide range of definitions, inclusions and exclusions of the term digital assets, and synonyms. A broad definition of a digital asset is provided by Wikipedia: “A digital asset is anything that exists in a binary, electronic format, and comes with the right to use” [3].

Without trying to provide the definitive definition of digital assets, digital assets is an umbrella term that can be divided into two main categories according to the majority of the experts that I interviewed.

1. Backed digital assets. The value of this digital asset is defined by the value of the underlying real world physical asset. For example, real estate, a piece of art, or a fiat currency can be represented as a digital asset. This digital asset has the same value as the value of the real world asset.
2. Native digital assets. These assets have no real world representation. Its value is determined by the market in which the asset is held. A possible further distinction of native digital assets can be made by centralised or decentralised issuance of the assets.
 - (a) Centralised digital assets. Users need to rely on a central party issuing the asset. Examples are gaming tokens (Linden dollars, World of Warcraft gold), and proposals by Facebook (Libra) and JP Morgan (JPM Coin).
 - (b) Decentralised native digital assets. Users do not rely on a central party issuing the digital assets. Examples are bitcoin and ether, both cryptocurrencies stored on a blockchain.

As you can see from the above categories digital assets are an umbrella term. There is, however, much room for improvement to be made on the above definition. One of the experts mentioned that the Association for Financial Markets in Europe (AFME) is also working on an extensive definition of digital assets. Defining and agreeing on the term digital assets is important, as I will discuss in the next section.

Challenges

In this section the challenges are described that corporate institutions, governments, and policy makers face when dealing with digital assets. The following five challenges were mentioned during the interviews:

1. The definition of digital assets is currently unclear.
2. Creating legal and regulatory requirements for digital assets.
3. Addressing the risks related to digital assets.
4. Measuring the costs of centralised and decentralised native digital assets.
5. Achieving interoperability with new and legacy systems.

In what follows I will elaborate on these challenges.

Defining digital assets. In all ten interviews, each expert argued that defining the term digital assets is of paramount importance. A taxonomy of digital assets allows everyone that deals with digital assets to be on the same page when defining new products, services, and regulation. One expert remarked “A universal definition should be applied, preferably at a global level. When every country starts to define the term (digital assets) themselves, we still have no common ground.”

However, defining the term digital assets is but the first step. Several experts argued that those that work with digital assets as well as decision makers should be educated, not only on its definition, but also on the opportunities of digital assets. Understanding the opportunities of digital assets allows for creating new, and adapting existing business, allowing a company to stay relevant. In the section Opportunities I will discuss the opportunities of digital assets, as mentioned by the ten experts. Defining the term digital assets is, for example, the starting point to address another challenge of digital assets: creating legal and regulatory requirements.

Creating legal and regulatory requirements. Currently the rules and regulations on digital assets are not clear. This is mainly caused by a lack of definition of the term digital assets. If we, for example, take backed digital assets, there already are rules and regulations in place. However, there is little regulation on centralised digital assets (according to our definition in the section Introduction). Another example is central bank digital currencies (CBDCs). You could argue that there’s nothing new here, as online banking has already existed for decades and regulation is already in place for online banking. However, when CBDCs introduce new ways of doing business, the question arises to what extent current rules and regulation still apply regarding to, for example, due diligence, liability, handover of responsibility, anti-money laundering, ownership, accountability, and know-your-customer. Potentially, such rules and regulations need to be extended, or new ones should be created. But when rules and regulations are in place for new types of business, also new risks may appear. Furthermore, digital assets generate most benefits in a global context. Besides a global definition, see the previous challenge, a global legal framework as well as creating global standards would benefit digital assets, too.

Risks of digital assets. In the interviews, overall, four main risks were mentioned in relation to digital assets.

1. Introducing new products, services, infrastructure, and processes may create new channels for criminals to exploit. To address this challenge companies should already start charting what such channels could be, and how to prevent exploiting these channels.

2. Another potential risk is that there is a stronger focus on digitally managing your assets. You must keep your password safe, i.e. not share it with others, and remember your password, otherwise you may lose access to your digital asset. This is, however, not a new risk to financial institutions. If I lose my pin-code, I simply can obtain a new one through my ING mobile banking app. However, the risk increases when you store your assets at a non-regulated party, who may not offer such a service. Bitcoin is a good example here, because when you lose your password (i.e. private key) you lose access to your assets. Users must be urged to only store their assets at trusted parties, or at least consider the consequences when they lose their password forever.

3. A third risk is that of market adoption of digital assets. As one of the experts stated “A digital asset requires collaboration between, and acceptance by other parties. This is not something we can do only by ourselves”. Indeed, although several digital asset initiatives are ongoing, market adoption, including other companies as well as customers, is important for these initiatives to succeed. Another expert argued that “adoption of digital assets will receive a boost once legal and regulatory requirements are in place. This is why we should focus on those requirements first.”

4. Strong volatility of decentralised native digital assets, such as bitcoin, was mentioned as a risk. “Customers have become more cautious with their money, especially during the corona-crisis”, one expert said and followed up with “... which is why it does not seem the right idea, currently, to invest in such assets (referring to bitcoins) as there is too much volatility”. The expert then continued: “The corona-virus is increasing the public interest in digital assets, as governments’ quantitative easing measures and bail-outs are back in vogue, devaluing traditional currencies”.

Measuring cost: Centralised versus decentralised native assets. One expert questioned if there is a cost benefit of decentralised native assets over centralised native assets. Several experts argued that distributed ledger technology (DLT) enables companies to work together, share costs, and create new businesses, in particular in combination with digital assets. Following on this, another expert argued that “To stay relevant as a company we have to adapt. Digital assets, together with DLT, offer a huge opportunity to stay relevant.”

Although it is hard to measure exactly what the cost are of a decentralised versus a centralised approach, the experts consider that a decentralised approach of digital assets allows a company to stay relevant, as it offers new business and new types of collaboration.

Achieving interoperability. A final challenge mentioned by the experts is how systems that use digital assets can interoperate with either new systems or legacy systems. In particular, decentralised systems currently allow for interoperability with other decentralised systems. However, some of these interoperability solutions are in their early stages of development, and may not always address the specific needs of a particular use case. Even more, how interoperability can be achieved between new digital asset systems and legacy systems is a topic that has not received much attention. However, as one expert stated: “There

currently are some technological issues, such as interoperability. These issues are important but will and can be addressed. First we need to focus on legal and regulatory requirements”.

Opportunities

In this section the opportunities of digital assets for customers, corporate institutions and their employees, and policy makers are described.

Digital assets may offer new products and services. It may shift the position of a financial institution and the services it offers. One expert commented on the opportunities of digital assets: “Yes, there are many opportunities. And it is also the logical next step of digitisation.”

But what are those opportunities? The following ten opportunities were mentioned by the experts:

1. Improve accessibility to current markets by new customers.
2. Reduce complexity.
3. Reduce current (high) cost.
4. Improve efficiency of existing processes.
5. Cover multiple jurisdictions, any time, any where.
6. Create new business models
7. Improve interoperability.
8. Improve transparency
9. Reduction of intermediaries, saving costs and less error prone.
10. Being able to participate in shaping the future of digital assets.

In what follows I will elaborate further on the opportunities of digital assets.

Improve accessibility. An important benefit of digital assets, as mentioned by several experts, is improving accessibility to products and services. Currently there are high entry barriers for some assets, for example, loans in large renewable energy, infrastructure projects, and commercial real estate projects. The process of trading these assets is complex and inefficient, and large ticket sizes makes it difficult for investors to participate. When such real life assets are digitised, the digital assets allow for other investors to participate as well. In short, digital assets may lower the entry barrier for companies to participate. Where first only a few large players could participate, now medium sized companies can participate, too.

Reduce complexity of existing processes. Following the previous example, one expert said that complexity of existing processes can also be reduced with digital assets. The primary reason for this is that all parties agree and stick to an up-front agreed protocol.

Reduce cost. Current processes within companies can be improved. In particular, there is a lot of effort ongoing in checks, regulatory and operational control of these processes. Such controls and checks can be automated and improved by, for example, digitising assets and combining digital assets with distributed

ledger technology, Such a process improvement will reduce costs, according to several experts.

Increase efficiency of existing processes. Again, some processes in organisations can be improved. For example, issuing a bond is a complex process with many steps and multiple parties involved. Digital assets allow for an improvement of such processes by better aligning parties, reducing the number of steps that have to be performed, automation of protocols, and instant settlement and valuation. In the end, this will result in a more seamless process, significantly improving its efficiency.

Also, digital assets allow for digitising current paper trails. Such trails are typically slow, costly, and error prone. By digitising assets such trails can significantly be improved. One expert called this “... the further digitisation and updating of our market infrastructure”.

Cover multiple jurisdictions. Digital assets allow companies to span multiple jurisdictions, making products and services to become available 24/7, any time, any where. For example, currently a payment from abroad may span multiple days before reaching its final destination due to opening hours of foreign offices. By digitising the asset and improving the payment process, such payments can improve from several days to several seconds. This suggests that these jurisdictions work together towards a common set of regulations and standards.

Create new business models. The majority of experts mentioned that new business models can be created with digital assets.

This ties in with the first benefit, improve accessibility. For example, because of fractional ownership loans can be distributed more readily and in smaller amounts, making that a larger number of investors can participate. One expert said, as an example “With digital assets I now can become a co-owner of that holiday home in Portugal. Right now it is hard to obtain a second mortgage, but that is not what I need. Only a few days per year I would like to stay in that house. Also, managing the assets becomes more easy, as the responsibility of who manages the house (such as an external party) can now be made very clear.” With the advent of digital assets, managing access to those digital assets becomes more important, as discussed in the section Challenges. A new business model can be thought of, for example, managing that access to your digital asset. More specifically, safekeeping the password to your asset becomes even more important. Other examples of new business models are creating and owning digital assets operating platforms, provide wallet-keeping, provide e-vaults, and validating services on a platform.

Note that digital assets are not a panacea. Digital assets *could* create new business models, but this should be placed in a broader context. For example, the challenges should be taken into account, too. As an example, creating new business models of which the products are not adopted by customers is not desired.

Improve interoperability. Although interoperability between new systems and legacy systems is considered a challenge, some experts also consider that digital assets, in combination with distributed ledger technology (DLT), is a benefit

as it can improve interoperability. The main benefit of interoperability between systems is that it addresses settlement and counter-party risk. Currently, several interoperability solutions exist [4] which allow for DLT-DLT interoperability and also for DLT-Legacy systems interoperability. As such interoperability solutions exist, the need to replace the legacy systems becomes less, which will save considerable resources.

Improve transparency. Digital assets in combination with distributed ledger technology will also improve transparency, according to several experts. Customers and investors access to asset documentation will become more readily available, thus increasing transparency. This allows both customers and investors to familiarise themselves with an asset before investing in the asset.

Improved transparency will also lead to more insight in the provenance of an asset. For example, investing in sustainable energy, such as wind energy parks, solar panel parks, can potentially be done by first verifying the origins of the materials used in those parks.

Furthermore, increased transparency could also improve lending capacity as a financial institution can provide more competitive loans on the basis of a solid provenance of the asset used as a (temporary) pledge.

Note that transparency may not always be required in every use case. The need for transparency should be determined for each individual use case, and achieving transparency in a use case should not become a goal on its own.

Reduction of intermediaries. Digital assets, again in combination with distributed ledger technology, can reduce the number of intermediaries. One example provided by several experts is the removal of existing clearing agents, as their role can be embedded on DLT which can potentially save time and cost. Note that removing intermediaries is not by default an easy task. Many intermediaries see the danger of being disrupted and are safeguarding their position.

Participate in shaping the future of digital assets. The final benefit in this white paper is related to digital assets and in particular to the current state of attention on digital assets. As discussed in the section Digital Assets, the concept of digital assets is not clear at this moment to everyone. Regulators and legislative bodies are gathering information to determine if new, or existing rules and regulations apply to digital assets, and companies are exploring the challenges and benefits of digital assets.

What may be the largest benefit of the current status of and attention on digital assets is that we can participate in shaping the future of digital assets. Several experts consider this as a huge opportunity, as we can inform regulators, but also further discover the challenges and benefits of digital assets. By doing so, we provide our expertise to the digital asset community, but will also learn more about digital assets ourselves during this process. Finally, we will be ready to offer new or improved products and services to customers and investors. This will allow us to stay relevant in the future of digital assets.

Next steps

As one expert summarised: “ Digital assets work best in a context of cooperation between and harmonisation of participating businesses and policymakers; at the highest level possible - ideally at global level”. From this and the sections above four actions can be formulated.

1. Global organisations should provide a universal definition of digital assets. This will trigger the further development of law and regulatory requirements on digital assets.
2. Councils such as the European Commission and global regulators should provide legal and regulatory requirements on digital assets. This will boost the acceptance of products and services that stem from digital assets.
3. Companies and governments should continue providing input on digital assets to global organisations, councils, and global regulators. By sharing knowledge a broader support on definitions, law, and regulations is created.
4. Companies should further explore opportunities and further define the risks that are related to digital assets. This allows companies to work in parallel with global councils and regulators. Also, it allows companies to explore new opportunities to stay relevant.

Conclusions

To better understand the concept of digital assets I interviewed ten experts that work on a daily basis with digital assets. From the interviews three conclusions can be made.

1. There is a global interest in digital assets by governments, regulators, and corporate institutions. This interest seems to be driven by both the challenges and opportunities of digital assets.

2. Five main challenges of digital assets have been identified. Most important is a universal definition of a digital asset, which would improve the process of creating relevant legal and regulatory requirements. Such requirements, in turn, will significantly boost the acceptance of digital assets.

3. The opportunities offered by digital assets appear to significantly outweigh the challenges. Digital assets could offer new opportunities by enhancing existing processes, thus saving costs, improving customer experience, and offer 24/7 services. Digital assets also allow for creating new services to customers. In fact, according to some experts, digital assets may provide an opportunity to shape the future of digital assets and stay relevant as a company towards customers and society.

Following the section Introduction, my personal strategy on digital assets is to improve the customer experience for anyone participating in our King’s day game next year. What will be your strategy?

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