Argentas Primer

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Introduction

We have definitely entered a new, powerful era in technology-driven global financial services, and the next generation of blockchains. The sphere of distributed ledger, or blockchain technologies "DLT") and cryptocurrencies represents financial technology at its most exciting form by combining in novel ways

(i) **"Gravitas" and substance of money** (in most blockchains the transactions relate to transfers of monetary value, thus the dimension of "money" or "money-equivalent" being omnipresent) – money is always a serious matter

(ii) **Passion and creativity** – most successful projects in the crypto sphere have been created out of their founders' passion for the subject, to find solutions to the challenges at hand, most often relating to the sphere of global payments, and

(iii) **Technology and innovation** – novel technologies and innovations have emerged starting from bitcoin, when their creators have engaged into the innovative process of solving problems such as the double-spending issue that would render cryptocurrencies otherwise useless

(iv) **Philosophy and ideology** – many projects starting from bitcoin have been created to empower individuals, protect their privacy (which is a great concern these days, as displayed by global social media data leak scandals, among other issues), and make them truly free and independent of government controls

Like never before, the combination of these four dimensions enables the creation of entirely new forms of global transactions and digital assets, or cryptocurrencies, residing in blockchains, and further applications around them.

For the first time ever, it is possible to create a truly open global financial system with an unified architecture that enables virtually free and real-time payments and other transfers of value, and digital assets or cryptocurrencies that serve for similar functions as the traditional fiat money.

The *"first generation" of cryptocurrencies such as bitcoin* contains a lot of great innovations, but as the increasingly widespread use has proven, both bitcoin and other major cryptocurrencies and their DLT networks or blockchains have all major deficiencies as well. All in all, we are still far from any "perfect solutions", and that is why the world has not adopted in any sense any particular cryptocurrency as a replacement of traditional money as a means of payment, storage of value and unit of account.

As it has been seen, the 'novelty factor' and excitement around the new technologies have caused wild gyrations in the value, prompted by bigger and smaller news and developments in the sphere, with total market capitalization having gyrated between ca. USD 800 and 200 billion during the past 3 months only. Such fluctuations of this nascent market would make it difficult for them to effectively fulfil the three traditional roles of money as listed above.

Every deficiency in an existing DLT represents a major opportunity, and thousands of entrepreneurs are chasing the "holy grail" of cryptocurrency, doing the good work of attempting to improve upon the existing solutions through innovation. This Darwinian evolution will eventually lead to better solutions. Which ones will be the winners is something nobody knows, and often it is possible that the winners do not even exist yet. Enthusiasts and critics take sides for and against, but only time will tell, which ones will be eventually adopted into the mainstream. Some will, and some people even suggest that there will in the end of the day be a single cryptocurrency.

Why Argentas? Why us?

What is our role in all this? We have been active thinkers and actors in those four dimensions listed above (i) "money" i.e. banking and financial services, (ii) creativity – building new innovative systems and beautiful and stylish modern interfaces and user experiences from scratch, (iii) technology – creating advanced Fintech / digital banking and payment platforms, and (iv) philosophy/ideology – seen how the abuse of governmental powers or similar can destroy healthy but centralized structures the way Satoshi Nakamoto feared when he created bitcoin as the response and defence to such fears, thus being strong proponents of pushing power back to the people and protecting their privacy, rights and property – and we can indeed make a difference in all these areas.

The Argentas Project has been **created out of our passion** for financial technologies to **add value by solving significant global financial and technological challenges** that have kept payments and banking slow, expensive and inefficient and have limited access to financial services worldwide, and **creating durable solutions for global financial services through innovation** that help **fulfilling our mission**.

With our **robust competence and experience in all these areas**, we are definitely in a position to create solutions that are not only innovative and **technologically smart and fast but also beautiful and easy to use with stylish appearance and convenient, simple and easy user experience. Quality in everything we do is very important to us**.

All this is in line with *our mission of to make global financial services faster, cheaper, simpler, more convenient, accessible and secure, and to offer it all with style and substance*.

The technologies we create and develop are there to serve for everyday, value-adding purpose, solving concrete problems and presenting them with better solutions – not for the sake of the technologies by themselves, even if smart, innovative technology is a form of art in itself too.

What are exactly the problems/challenges to be solved?

In brief, there are three-interrelated problems

Global payments

Despite of technological advances, global payments are often still slow, expensive and inefficient. Even if in a number of countries and regions, intra-currency payments

have reached same-day value settlements, even almost instant settlements in some cases, cross-currency and cross-border payments tend to remain slow and expensive, taking several days and costing even double-digit percentage fees. Money is moved between banks that are members of correspondent banking and various local clearing and settlement systems that often operate rather archaic, purpose-built systems that do not talk to each other but need to be settled via traditional SWIFT messages or similar that give the debit or credit instructions to transact on various correspondent banking accounts and ultimately reach the end user's account.

DLT makes it possible to reach virtually instant global money and other value transfers that can be virtually free as well, with network costs in the fractions of a cent.

Barriers set between cryptocurrencies and fiat currencies. We also see enormous friction and obstacles put between fiat money and cryptocurrencies, making transfer and exchange rather cumbersome, even if it could be technically fluid and fast.

Equally, by leveraging decentralised blockchain networks and modern interfaces linking various parties effecting currency exchange transactions and providing liquidity such as banks, money changers and traders, instant settlement of cross-currency and cross-border payments can be achieved.

Global financial access

Traditionally, financial access and financial inclusion have been related to the access to banking services. When there may be one third i.e. 2.5 billion of the world's population without such access, strongly limiting their ability to engage into economic activity, when there are no transfers and no financing, thus massively limiting their possibility to grow financial wealth, a lot of economic potential and wealth creation is needlessly lost. At the same time, in developed, industrial countries, there are other factors such as excess regulation and bureaucracy that indeed "protects" people and companies from economic activity and wealth by de facto preventing access to financing and other vital services to support economic activity and wealth creation.

Cryptocurrencies and DLT networks bring the bank into the pocket of everyone in the form of the digital currency wallet, which is also very different from the "mobile banking" services of traditional banks, which are just interfaces of the same old centralised banking, but digital currency wallets interfacing with blockchain networks provide access to a truly egalitarian finance 24/7 on a global basis.

Banks' attitude towards participants of the crypto economy

At the same time, when cryptocurrencies rose to prominence and reached general public awareness towards the end of 2017 in ways never seen before, boosted by the massive year-end bull run on bitcoin and other cryptocurrencies, new problems in terms of traditional banks' attitude towards cryptocurrency users have emerged. A number of banks have either blocked or banned entirely access to cryptocurrency services, or blocked the use of credit and even debit cards to transact in cryptocurrencies i.e. blocking the clients' lawful access and choice of how to use their own funds. Banks' duty is definitely not paternalistically 'protect' its clients on

how to use their private funds nor do they have any legal right to do so. Even if some banks and regulators behind them putting pressure to stifle all cryptocurrency activity that they do not control cite "money laundering and terrorist financing concerns", data shows that such activities potentially only represent less than a percent of the activities i.e. much less than in the case of fiat money, where 'grey economy' in certain countries may be 20-30% of total economy, making illicit use of fiat money of a totally different scale.

Given this unfair treatment of cryptocurrency enthusiasts by traditional banks, it is important to create and enable such banking services acting as a bridge between traditional and crypto economies that serve the needs of crypto users in ways that respect applicable regulations but do not unfairly limit, block or stifle the legitimate activities of those 99%+ of clients that have nothing to do with any non-lawful activity. It is important that those that are legitimately acting in the modern and innovative crypto economy have their rights to banking services respected the same way as those have that only act in the traditional economy, without any discrimination.

Vast potential to create value by removing these artificial barriers

When considering these 3 key dimensions above, by removing those unnecessary barriers that can all be liberated by advanced technology, vast amounts of new economic activity and wealth creation can be enabled, making everyone better off. It is understandable that incumbents and those in positions of power feel threatened by something new and unknown, but preventing, blocking and stifling legitimate economic activity through artificial barriers, rules and regulations designed to protect the power and position those holding them are definitely not the answer, but allowing the 'Darwinian evolution' caused by technological innovation find its ways and then develop 'smart regulation' that helps to filter out the bad actors but does not discriminate, block, prevent, intrude in or stifle the activities of those 99%+ good actors.

Considering these major challenges helps us to shape of the outline for a decentralised DLT-based platform and ecosystem evolving around it, bringing durable and value-adding solutions to those problems.

Disclaimer

Given the fast evolving market for cryptocurrencies and the emerging, nascent cryptoeconomy, new innovations, possible emergence of new regulations or changing application of existing ones, changes in market circumstances, competitive positioning, funding and other resources available and so on, the visions, plans, goals and objectives presented in this project primer, and their sequence of execution, may change accordingly as they are constantly adapted to find the best solutions possible at any given moment to fulfil the mission and vision presented. Given the early stages of the cryptoeconomy, however, the opportunities for projects like Argentas are enormous.

Network requirements

Requirements for a successful blockchain

Exchanging and transferring value should be as easy as exchanging information. It can be easily seen that new generation blockchain technology offers the ideal foundation to make this a reality. To achieve a winning solution in terms of the technology to be developed and its application, the following parameters should be achieved:

- **Speed and scalability i.e. low latency.** If e.g. Visa alone runs 50-60 thousand transactions per second, while the leading cryptocurrency networks bitcoin and ethereum only process 7 and 15 transactions per second, respectively, and may require confirmation times of 60 and 2 minutes, respectively, there is a long way to achieve capacity that is enough to run a global payments network in real time, which would need to have multiples of Visa transaction volume as the total capacity worldwide i.e. run *potentially into millions of transactions per second*. Among some other networks, ripple claims to be able to do 1,500 transactions per second and to potentially scale up to the level of Visa, but that has never been run in real-life conditions. Thus there is no current solution for any truly global payments processing volume capacity. Reaching sufficient global capacity may require smart application of a type of *lightning network* as a secondary layer containing payment channels, but research, development and practical use will lead to the best solution to this challenge.

- **Low transaction cost.** In addition to being slow, the largest current networks have high transaction costs that also relate to network congestion and under-capacity to process many enough transactions in a period of time. In many countries, clients have got used to free basic domestic payments, even if the costs are often hidden in fixed monthly service fees or similar. This means that payments should be virtually free to users, to reach widespread adoption.

- **Irreversibility (low confirmation time).** While e.g. retail card payment users have got used to payment confirmation times that can be virtually instant, bitcoin payment can take an hour to get confirmed (6 blocks of ca. 10 minutes of mining for each) and a couple of minutes for ethereum, and no user would like to keep waiting until such confirmation times lapse. This would need to be virtually instant i.e. of low latency.

- **Decentralized control, transparency and flexible trust.** No central authority must be dictating, whose approval is required for consensus, but anyone must be able to participate, guaranteeing access and inclusion to network services. Users must be able to choose any number of parties they see fit, which means that any user should be of equal importance.

- **Safety and security.** The security should not only rest on "normal" digital signatures and hash families but eventually on such ones that can be set to protect against hostile parties with even unimaginably vast computing power that may be in the future amplified by quantum computing. Eventually, the security of the blockchain must be *quantum resistant*.

- **Easy, convenient and intuitive user interfaces.** User interfaces of the services – the wallet, exchange and any network 'gateway interface' such as a bank or broker - must be simple and easy to use, intuitively facilitating buy, sell, store and transfer of value and use of any available app.

- **Vast, engaged user base and community.** The network must eventually reach a vast user base for a widespread adoption and general use by various user segments from individual to business, from corporate to institutional. A true community must be created and evolve, driven by the passion of its creators.

Looking at these requirements for a successful blockchain, Argentas is well-positioned to revolutionize global payments and other transfers of value by introducing a blockchain network and cryptocurrency that will combine these properties.

Argentas will leverage its expertise to create the Argentas Network (HydraNet) that will be a **fast, scalable, open and decentralized blockchain architecture** supported by and interfacing with external network gateways such as **wallets, exchanges, banks** and other service providers.

Given the power of such a decentralised network, HydraNet can eventually be regarded as a **decentralized supercomputer** and a **global value transfer system** (fiat and digital currencies, physical and digital assets of value).

Network value

It is easy to conceptualize, how HydraNet will capture value that will escape past structures and migrate into the new setting: By combining minimum transaction and confirmation time with maximum security, HydraNet can become a **VISA/Mastercard/Amex and SWIFT alternative, replacing them** for the new decentralized economy in ways that will also provide financial system access to vast numbers of under or non-banked people. In April 2018, the market capitalization of Visa, MasterCard and Amex combined was in excess of USD 500 billion, which was approximately twice the market capitalization of all cryptocurrencies and tokens at the same time. Such magnitudes indicate that when the business starts moving from traditional card schemes and SWIFT network (that turns over at least USD 5 trillion worth of payments a day), the network that receives the business volume will capture vast amounts of value. When such business moves from old to new, the market values of incumbents are good indicators of the value of the new blockchain players that may be even higher, given their much higher growth rates. These examples make it very clear, how value is created, when it business migrates from old to new and grows much faster in the new, open and inclusive setting. Thus such growth of use of the network will reflect in the value of its digital assets or tokens, based on the growth of their use and general usability, when the network is widely adopted.

Argentas Ecosystem

The Argentas Ecosystem ("AE") will have three principal dimensions:

1. **HydraNet** – the Argentas Network (including its all is components)
2. **HydraNet interfaces / gateways** such as wallets, exchanges, banks and other actors interfacing with HydraNet
3. **HydraNet dApps** – further decentralized applications (dapps) that leverage the power of HydraNet for economic activity

Given the fast-evolving nature of the cryptocurrency sphere and the underlying technologies, the structure and components of the AE are likely to evolve accordingly.

The AE has been conceived so that every dimension will support and the strengthen the network and the ecosystem itself, so the growth of any dimension – the number of network nodes, the volume of transactions (in its native assets or otherwise), the number and type of network gateways and interfaces, and the number and type of other dapps (e.g. wallets are also dapps) – will boost the position and value of the network, **all components being mutually synergistic to benefit the ecosystem as a whole**.

The development of the ecosystem could be divided in two key phases:

Phase 1: Development and implementation of (i) HydraNet and (ii) key interfaces i.e. wallet (native), exchange (native) and banks (non-native) or similar, because the network use, when interfaced with the "rest of the world" will significantly increase through the interfaces / gateways compared to the singular use of its native digital asset for transactions, when not interfaced.

Phase 2: Development of further dapps – the further dapps, which may also interface with the other network key user interfaces such as wallets, exchanges and banks, will focus on activities that boost general economic activity and provide value-adding services that could be ones like decentralized lending that will be inherently supported by HydraNet structure.

Dapp development and interfacing will be open to all, and it will be the intention of Argentas to support the development and integration of interfaces, gateways and dapps in the AE through venture funding or similar initiatives, depending on the funding available to Argentas itself.

The following section will briefly describe the HydraNet and its key interfaces.

HydraNet

HydraNet will be implemented to meet the key requirements stated above i.e. (i) low latency, (ii) low or no transaction cost, (iii) virtually instant confirmation times, decentralised control, transparency and flexible trust, (iv) asymptotic security (including research to ensure quantum resistance at a later stage), and (v) intuitive, easy-to-use user interfaces and experience.

To determine the key requirements and design the specification and basis for HydraNet, a number of other blockchains and DLTs have been studied and analysed in depth, to understand, what works and what does not, and what will best serve the objectives set for HydraNet. In addition to the "original" bitcoin, blockchain protocols such as ethereum, eos, ripple, stellar, cardano, monero and so on have been reviewed in terms of their specific features, and it is clear that some of the have characteristics that suit much better than those of certain others to solve the problem of global payments and issues around them, and we have inspired by a number of features already developed in projects, where great work has been done, with the intention of taking things further by leveraging our own ideas, visions and concepts, as nobody so far has succeeded to create something that de facto enables real-time, instant global payments for free in large volumes, being truly global.

HydraNet in brief:

- Like bitcoin, HydraNet will be a **decentralized and distributed ledger** (DL)

- Bitcoin is the native currency of the bitcoin network, and HydraNet will equally have its comparable **native digital asset** enabling network transactions

- To make HydraNet better facilitate **large scale, low latency and low cost transactions**, there will be **no "mining"** or equivalent in the HydraNet – one will be able to run an HydraNet Core validator node, but since there will be no mining, transaction validation will not reward node operators with any newly "minted" HydraNet digital assets

- This removal of the mining component that is required for the "proof-of-work" (PoW) or "proof-of-stake" (PoS) approach in confirming transactions will **require much less computational power** and thus make HydraNet much more **energy-efficient and environmentally friendly** than any mining-intensive cryptocurrency

- Thus, instead of the PoW approach of bitcoin, HydraNet will use a **consensus model** called **Hydra Protocol (HP)** for transaction confirmations; HP will leverage a variation of an approach commonly known as the **Byzantine Generals' Agreement**, with the objective of minimising and optimising the percentage of network nodes out of the total required for transaction confirmation, for which research is underway but requires further work – there have been attempts in certain projects to find solutions such as 'quorum slices' or similar to lower the relative number of nodes required for validation, and while there are functional solutions to improve this in ways that it cannot cause network blockages in the event of lack of quorum or in cases of

disagreements and risks of malignant forks, and while secure solutions have been created, no 'perfect' solution has yet been conceived by any party

- While the network transactions will remain anonymous, with **only the transaction hash and the public account key visible on the network i.e. are the same way pseudonymous as those of bitcoin**, we will have to further study for **measures augmenting user privacy** while developing tools to minimize any network use for illicit use that may damage network reputation, if not prevented or contained – it is always a balancing act, and especially in today's world given the scandals of abusing private user data, **network user privacy is paramount** – however, there has to be balance between the two – a complete privacy and anonymity of projects like Monero, and at the other end unencrypted traditional bank transfers of the centralized closed-loop system, because, in particular, concerning transactions that relate to e.g. fiat money and interface with regulated institutions, transactions will not be completed, if there are no sufficient means to identify such network users that interact in assets requiring interfacing and asset conversions

- Further study will be required, whether it will be possible to achieve intrinsically so low network latency that eventually millions of transactions will be processed per second, or a variation of "**lighting network**" as a secondary layer will be implemented to provide the core network with **additional payment channels** further speeding up global transaction processing

- It is estimated that given the planned structure of the protocol and some existing non-PoW/PoS blockchain projects (with no mining), the intrinsic transaction confirmation speed will be at least 2-5 seconds with a processing output of at least in tens of thousands of transactions per second, but it will require further research to be able to conclude, whether quasi-instant confirmation speeds can be reached, or whether, as suggested above, application of a specific variation of the further "lightning" layer with additional payment channels will be required to achieve that objective – it will be achievable either or anyway, but it cannot be concluded as of yet, and since there is no live "commercial" application of lightning anywhere to date, no parallel information in another project can be used to quasi-validate the assumptions or not, but further proprietary study will be required

- The "base case" of the network is that all nodes will replicate the "transaction database" of the network with the full account ledger containing the network transactions i.e. the distributed / decentralised ledger mentioned above, but further research will be required to determine, whether a variation of "**smart sharding**" will be required to be implemented for further speed and efficiency, meaning a the ledger / database portioning so that not all transactions are held by all network nodes but the load is spread around the network, as otherwise each node would, especially with a global transaction volume, become massive in size, making the load on individual servers very heavy and possibly clogging the network performance

- The **native digital asset** of HydraNet will be designed such that it can both facilitate intra-asset transactions in the native asset on the HydraNet and transactions **including transfer of value of any other asset** (cryptocurrency, fiat

currency, physical asset or other types of digital assets – anything of value) – **only the ability to effect transactions of any asset, of any value, will enable a true global payment / value transfer network** that is our objective

- To facilitate transfers of any item of value, **any user will be able to "issue" any asset on the network**; here, the HydraNet interfaces / gateways will play a key role, as any **non-native network assets are held at specific gateways** such as banks and currency traders operating in certain fiat currencies or e.g. holding gold reserves that can be digitally issued on the HydraNet, and such assets can then digitally be transferred from any sender holding them to any recipient – thus the network interfaces / gateways will support / back various types of non-native assets

- Given that the network account structure will facilitate an issuance of any asset on the network, at the same time, it will intrinsically facilitate a "**decentralized exchange**", where transactions between any asset of value can automatically take place, matching the best bid and offer available. The network transactions include such exchange transactions as the structure is the same, leveraging the HydraNet network account structure enabling issuance of any asset, and transactions between them.

- It is easy to understand, how HydraNet integrates with the "real economy", when one imagines the network interfaces / gateways such as wallets, exchanges (in addition to the native decentralized exchange, from which the order book can also be fed through the network interfaces to any other exchange, complementing its other order book in other digital and/or traditional (non-crypto) assets) and **banks, to which any network user can deposit non-native assets, which can then be issued digitally on the network, transacted, and any recipient of a transfer can then "redeem" or "cash" a fiat money or any other "physical" asset received at a gateway entity**

- We consider it **very important to develop the interfaces / gateways in parallel with the network itself, even create "model" gateways and run them in a non-preferential manner**, as the network cannot operate in a "vacuum" but needs to be bridged with the traditional economy, as only functioning network bridges (gateways) will bring in more assets and transaction volume into the network, and, gradually, more and more economic activity will migrate into the network, making it more and more self-contained with an increasing dapp ecosystem

- The Argentas Project **differs from any other blockchain project** also in the sense that we recognise not only the importance of the network itself but the gateways and the development thereof, because our objective is a transformational global payments system and we do not consider it realistic to grow and develop it detached from the rest of the world, but the quality and number of interfaces and gateway entities must be maximised, to maximise the migration of transactional business into the network – it could be characterized that the Argentas Project is a "**hybrid**" project, when the gateways are considered, and there are "crypto idealists" that may claim that the involvement of gateways is not "pureplay crypto", but we believe that the "**pureplay crypto**" of the project i.e. HydraNet with its native digital asset will

be eventually much more powerful and widespread, when we at the same time support the development of the network interfaces, gateway entities (both in terms of **greenfield projects** and recruiting existing ones to join the network) as well as the wider HydraNet dApp ecosystem development.

Technical Hydra Protocol white paper

In terms of detailed technical descriptions of the Hydra Protocol and its consensus-based transaction validation mechanism as well as key components such as its distributed ledger of network accounts and transactions, a technical white paper will be released at a later stage for interested parties, while for the normal reader, the above chapter gives a clearer understanding of the big picture with a description of the key components and approach used in the structure HydraNet and HP.

Given the need to research further dimensions such as the application of (i) lightning network technologies, (ii) smart sharding, and (iii) user and transaction privacy enhancing elements, no conclusion is available for those dimensions, which, however, do not affect the development of the "base case" scenario but will enhance it.

Further, as stated above, dimensions such as "quantum resistance" will be subject to further research, but they will not be essential for the first release of the expanded technical white paper.

Given the constant development of the underlying technologies both in general and in specific to this project, new discoveries, innovations and features to enhance the planned design may emerge from time to time, which will then be included accordingly, when relevant to the structures being applied.

HydraNet Interfaces / Bridges

To act as "bridges" or interfaces / gateways between the "real economy" and "crypto economy" on the HydraNet, there will be a selection of applications for direct native network connections and gateway entities holding other, non-native assets that can be transferred as items of value on the network.

Some of the key interfaces and network bridges are wallets, exchanges and banks. While all of them are designed to operate independently of each other, they can equally be combined into one service, with e.g. the network wallet providing access to all services of such entities for smooth end-user experience, enhancing volume of use and general usability of such services.

Through the network interfaces / bridges, it is very easy to understand the **clear use cases** for the network end-users, when the **power and value-added of the network enabling virtually instant, virtually free global transfers of any asset of value and thus efficient economic activity** with **full access to a global financial transaction system** is **brought to their fingertips through these interfaces**, being accessible to individuals, merchants, companies, institutions and governments alike. As described in a previous chapter, the migration of economic activity into the network in terms of transaction volume and size in different assets will cause a value displacement from archaic structures such as payment card schemes and the SWIFT network for global payment messaging.

Wallet

Argentas will introduce its own native network model wallet, featuring a simple, stylish and user-friendly interface, which will enable any network user to interact directly on the network with its digital asset.

The wallet functionality will be expanded with other key cryptocurrencies and anything that will be traded on the network decentralized exchange, as that by definition is part of the network, to which the wallet will be a native interface.

The wallet will gradually involve into one that could in principle contain balances in any asset that is traded in the network, given the intrinsic feature in the network.

In this sense, the wallet will be developed to enable access to network gateways and possibly some of their proprietary services too, which will incentivize network gateways to leverage the use of the network wallet to the maximum, as an expansion of their own products and services.

When the dapp ecosystem grows, the wallet will also function as a "dapp store", through which such dapps can be acquired and used.

Exchange

There are two dimensions to this concept of exchange: (i) there will be the **decentralized network exchange**, through which any asset can be introduced and traded through its order book and automated bid/offer matching system that has a

pathway mechanism to optimize exchanges between any assets in the system, and (ii) **any other exchanges, crypto exchanges or "traditional" exchanges** that interface with the network and act as network bridges, with any of them being free to connect to the network and leverage its power in their operations.

The decentralized exchange will feature both a (i) direct network interface, and it will be also usable through the (ii) native network wallet dapp, through which transactions will can be posted on the order book and managed in parallel to any other transfers of value.

Argentas will support both the creation of new exchange entities bridging to the network, and the development of its native decentralized exchange in ways that are mutually synergistic: any asset conversion and exchange boosts the network traffic volume and usage.

Bank

When bitcoin rose into prominence and reached the awareness of the general public in late 2017, causing multiplication in bitcoin, and other cryptocurrency transaction volumes, this attracted the attention of various parties such as banks, which effected the user transactions to move fiat money to and from crypto exchanges. Banks were pressurized by the regulators and governments to "protect" the users of cryptocurrencies "from themselves" by limiting or even blocking access to services such as payment transfers and credit and debit cards when transacting in relation to cryptocurrencies. Obviously, other motivations than "protection" of adult people from a free choice they are legally entitled to (which is a breach of their lawful rights) were behind this, which more relate to the fear of the incumbents losing power and wealth to something they cannot control or even understand, but the end result is that there is a great need for banking services to the crypto community, to facilitate the bridge between the crypto and "real" economies in ways that understands and serves the needs of crypto users, not adversely block them from using any products and services.

The HydraNet is "gateway / bridge neutral", so any party can join the network, but given both the recent hostile treatment of crypto users by banks and an important role of banks and other entities in acting as network bridges by holding balances of non-native network assets, we consider that it is important to go beyond offering the interfaces to existing entities and, instead, to create model entities that will be fully operational and show, how to ideally bridge between the traditional and crypto economy, and interface with the network, leverage its capabilities and dapps within the wider ecosystem.

A model Argentas ecosystem bank entity can also act as a "**laboratory**" of decentralized crypto banking, where network services and dapps are smoothly bridged with "closed ledger" services, with many dapps replacing such services – thus the model bank, or model banks, will be able to act as examples of the banks of the future, how 'traditional' banks can morph into participants of the crypto economy, with certain part of their existing services disintegrating and being replaced by dapps of the network, and all this can happen in ways that is not visible for the end user using the service through the wallet dapp or similar, when the interface does not

distinguish between a "bank service" and a "network service". While it can be stated that the native network wallet is already a "bank in the network user's pocket", interfacing with separate bank entities will expedite the transition and migration of economic activity from the "real" to crypto economy.

In brief, some of the key points for a bank acting as a network bridge can be summarized as follows:

- **Network user need to deal with/convert into fiat money**. HydraNet network users will normally need to deal with and convert to/from fiat money, and a network bridge bank can hold such balances that are issued as network credit, thus enabling transactions both way

- **Clearing and settlement needs of the exchange**. The same way, assets converted to/from other assets or currencies need to be settled, and if the transactions are not purely between crypto assets but require cash settlement in one end of the transaction, bank services are required for an exchange operation for its clearing and settlement activities

- **Need for a 'crypto friendly bank'**. As described above, there is a massive need for banks that understand the needs of crypto users and really provide all the required products and services and do not block them. While bank entities may be subject to regulation, it is not appropriate to adopt hostile 'total blockage' attitude to everything and use anti-money laundering as an excuse to everything, as it is also proven that the portion of illicit activities in cryptocurrencies is in the region of one percent, whereas the grey economies transacting in fiat money can attain in some countries dozens of percent of the economic product

- **Ability to issue payment cards**. Even if the increasing penetration of the cryptocurrencies will eventually render traditional means of payment such as payment cards useless, before that phase of development, it will enhance both the traditional and crypto economy, when balances in crypto assets can be leveraged through use of payment cards, enabling the crypto assets further feed any economic activity. Banks are able to issue such cards, and if the decentralized exchange of HydraNet is leveraged in this case too, automated exchange of crypto assets in any fiat money can conveniently take place in real time, when a card payment happens, creating further synergies in the ecosystem

- **Digital operating model matching the digital world of cryptocurrencies.** It may be difficult to smoothly interface traditional banks, many of which still have central operating systems dating from the 1970's, with the sleek and modern world of blockchain networks. Therefore, a new bank model needs to be constructed, with is as modern as the blockchain itself, running on a fully automated platform that seamlessly integrated with the network services and dapps without cumbersome multi-layered interfacing between systems that have often been developed for wholly different eras and environments. A new platform will leverage **advanced technologies such as machine learning / artificial intelligence**, rendering the need for physical staff to the minimum in

operations and client communications, and creating superior performance and efficiency

Such bank entities as network bridges will globally enhance the use of the network itself and the growth of the crypto economy, when modern, streamlined bank entities smoothly and seamlessly integrate with the network so that the end user does not even distinguish, what is a bank service and what is directly a native network service or another dapp, while the access to traditional economy and assets enables individuals, merchants, companies, institutions and governments to bring in their assets and transactional activity into such entities and further transact in the network through the conversion of any asset as network credit / balance that is then settled at a network gateway when required.

This indeed will create the "**bank of the future**", where advanced, digital, online-only automated platform runs as a bridge between traditional and cryptoeconomies, gradually fully morphing into the crypto economy, when the traditional financial closed-loop financial system migrates into an open global DLT based financial system of the new era. **What the definition of the word "bank" contains will eventually be quite different from today, as the cryptocurrencies are already in the process of rendering traditional bank accounts useless, as also the example of HydraNet account holding any asset in a digitized network-compatible form shows**. Creation of such "model entities" will make such transition as smooth as possible, and create templates for others to follow.

Such deliberate effort to not only promote the network but its gateways, and help create them, will **significantly enhance the ecosystem and its value, when all users experience its massive value-added, when assets can be digitized, converted, transacted and held within the same ecosystem, and pooled for economies of scale – all virtually in real time and for free**. Gateway / **bridge entities can offer further value-adding services and charge for them, but the competition between gateways will ensure that the end users will get the best pricing** for such non-native value-adding services.

While **both the network and various bridge entities can operate independently of each other**, the best **synergies and value are created, when they all act as parts of the same ecosystem bridging traditional and crypto economies**.

Dapps

The full power of the network can be eventually achieved not only through the direct interfacing to its core transfer of value and payment transaction services, but through the development of a wider dapp ecosystem leveraging the blockchain-based network's capabilities.

While the network's ledger structure has been designed so that it perfectly fits the need to hold, account for and transact in any asset, technically so that any non-native asset is issued as credit on the network, ideally suiting payment, exchange, asset management, holding and servicing operations and banking services, its capabilities can be leveraged in a multitude of financial and other services that benefit from the immutability and authenticity of its transaction record and record-keeping capability.

While it is likely that yet unforeseen applications will be conceived and developed, some of the dapp examples, given the nature of the network, closely relate to the most 'natural' services of the network, given its designed capabilities, such as:

- **Merchant processing**: point-of-sale (POS), internet payment order processing etc. Naturally, the use of the network as payment dapps is one of the most natural extensions of the network's inherent capabilities, enabling instant clearing and settlement of transactions in any currencies, crypto or fiat, both eliminating any credit risk or delay from merchants in receiving their proceeds from sales, and thus decreasing any working capital financing need, when funds are instantly cleared and received

- **Decentalized lending**: loans, mortgages, small business lending, micro lending etc. Given the network's intrinsic capability to issue any asset as a credit on the network, a loan, by definition a credit, can very easily issued on the network – this will significantly boost access to financing, and through micro lending facilitate access to financing even in under-developed regions, where most people have not before had any access to financing (or any financial service), preventing practice and growth of economic activity, and, further, creation of wealth – this will all make it accessible to wider segments than ever before

- **Investing**: stocks, bonds, funds, savings instruments etc. Equally, the network's capability to digitize and hold and transfer any asset of value will attract developers of investment dapps and entities that offer them (which may be linked to network bridge entities or not, if connections are indirect through other interfaces), when transactions, clearing and settlement in any asset can virtually take place instantly, with an immutable record of ownership. Asset values are automatically updated through user interfaces as a part of the seamless user experience.

- **Venture capital**: seed, traditional, venture debt etc. Dapps providing access to venture finance will benefit both the dapp ecosystem developing around the network and any network user seeking funding, providing vast synergies to all parties involved.

- **Identity & reputation management**: IDs, authentication, credit scoring etc. The immutable blockchain infrastructure of the network including facility to store supplementary information will facilitate tools to prove identity, authenticate transactions and other acts, and help manage activities like credit scoring, when a certain identity is linked to certain transactions, assets and their performance. The ability to confirm user identity and authenticate them providers synergies to all gateway / bridge entity operations, among others, that often need to know the real identity of the end user and authenticate them.

The network and its gradually evolving ecosystem will enable eventually vast numbers of users globally to use **wallets, exchanges, crypto banking** and other **financial services** that will allow them to get on board with cryptocurrencies and crypto-enabled everyday services in an intuitive way, all growing the network use.

Through these Phases 1 (network and its interfaces and bridge entities) and 2 (dapps) Argentas will help create a new **ecosystem** of individuals, communities, developers, payment providers, banks, institutions, companies and merchants to drive demand and value for HydraNet and its native digital asset. This all will boost and grow the crypto economy eventually saturated with goods and services sold for cryptocurrencies. All this will emerge around the network that is not confined to any traditional centralized closed-loop system, but offering equal access, freedom and choice to its users worldwide.

Team

What makes us different from many other blockchain and cryptocurrency technology projects is that we do not have only understanding of the technology part, but we have wide and deep expertise and experience in banking, payments and other financial services, while always maintaining the pioneering spirit and not clinging to any convention, which means that we truly know what we are transforming and how we transform it. On top of that, we possess not only technological but aesthetic creativity, enabling the creation of high quality technology that is not only good but looks and feels good and is stylish. That all intertwines with our mission of "*to make global financial services faster, cheaper, simpler, more convenient, accessible and secure, and to offer it all with style and substance*".

Argentas is, when the project advances, undertaking the process of expanding its resources and putting together a world-class team of experts, some of which have been previously working together in creating advanced Fintech platforms. Core team members have at least 5-10 years of experience in building scalable projects for back and front end. The backend team specializes in networking, cryptographic, and distributed ledger / database software.

The core team will be announced soon, when necessary arrangements have been concluded. At the early phases of the project, some individuals have continued their "daytime jobs" elsewhere while working on the project, and transitions into fulltime positions will concluded accordingly.

The project will continuously recruit in both in the software development team and the business development team, which will work to attract bridge entities to join the network, promote dapp development possibilities for the ecosystem, and the network and ecosystem in general.

Token distribution structure

To grow the community of future users of HydraNet, and, later on, to obtain the resources required to make the Project, HydraNet and its ancillary interfaces, model bridge entities and dapps a reality, Argentas is launching a token distribution process starting from the end of 2018 by invitation. A total of up to 700,000,000,000 tokens will be reserved (distribution of the native digital asset later on, against which the AXU tokens will be exchanged), with majority of them to be allocated to those who sign up and perform given tasks in building up the community.

AXU Token

Ticker: AXU

Token name: Argentas Exchange Unit (AXU)

Technology: Stellar (XLM)

This Stellar network based AXU token is not the native asset of the HydraNet, which will only be issued, when the HydraNet itself is launched, as by definition, the native digital asset cannot exist before HydraNet is launched.

Token supply

Total supply: 922,000,000,000 AXU tokens

Initial rate

The tokens are reserved for free in the distribution campaign by invitation.

A limited quantity may be made available for sale to enable build-up of reserve and resource base as per the project plan. Price per token at an such limited initial sale, if made available, will be 100 AXU tokens for 1 XLM, indicating a value of ca. USD 0.001 per AXU at the current USD exchange rate of XLM, available against XLM, BTC, ETH, LTC, BCH, or fiat via PayPal/Credit & Debit cards.

It is important that the Argentas Project is robustly funded, in order to be able to deliver on and compete with any strongly funded project that may propose solutions within similar area such as offering disruptive innovations and solutions for global payments and finance through the blockchain. Given a number of blockchain projects with very strong funding levels, there is no possibility to have too much funding, in order to achieve a very robust, well-resourced platform that will be widely adopted, used and leveraged for global value-adding purposes.

Pre-distribution schedule

Start time: late December 2018

End date: latest when the distribution goals have been achieved

Token distribution

During the token distribution period, a total of 922 billion tokens have been created:

Public

- Distribution (ICO) [76% of AXU issued]

  The bulk of the AXU will be allocated upon reserving up to 700 billion AXU for members signing up upon invitation and performing tasks to grow the community. A limited quantity may be offered for sale to build up currency reserve and resource bases.

Team & project reserve

- AXU team & project reserve [24% of AXU issued]

  To cover future costs and uses as part of the future development and execution of the project as per its plan, and reserved for team members and key contributors who worked to develop the ideas, supporting structures, and actual implementations of the Project.

Use of funds

The proceeds shall be used to realise the Argentas Project i.e. 1) to support the development of the Hydra Protocol and the HydraNet with its native digital asset, wallet and exchange, the build-up of systems and APIs for gateway operations, human resources (recruitment), 2) to cover for marketing, communications, legal, compliance and general office and operational costs, 3) to support and expand the network and platform offering by setting up 'gateway/bridge' operating entities offering products and services supporting HydraNet, cryptoeconomy and other exchange, payment and cryptobanking services for which licenses may need to be acquired, 4) to effect partnership development and strategic acquisitions of business assets and companies in support of this strategy and objectives to expand the Argentas ecosystem, when and if suitable opportunities emerge; as well as to facilitate for 5) general corporate purposes and continued research and 6) development of further blockchain technologies, all in support of the stated objectives of the Project.

On the more detailed operational level, we plan to use the proceeds as follows:

- Software development for the next generation Hydra platform inclusive of the HydraNet and is components, as illustrated in this paper, the development of the exchange and wallet, cryptobanking platforms, HPIs and application development platforms for the Hydra ecosystem, as well as additional research and development in the foregoing areas and other blockchain technologies

- Marketing, advertisement and public relations campaigns that will focus primarily on social media and media followed by the crypto communities

- Implement active partner and participant acquisition strategies for the user-facing operations, including acquisitions and/or cryptocurrency incentives to new users

- Any necessary corporate entity setup and securing necessary operating licenses domestically and internationally for operating entities, when and if required, relating to any exchange, payments or gateway banking operations (optional)

- Operational, legal & compliance, and client/user service staff and support

- General office expenses consisting of rent, office supplies, computer hardware and other equipment

- Research and development and other application development related to blockchain technology and cryptocurrency

- Participation in the software development and application ecosystem around the HydraNet by buying, building, or investing in various companies and/or assets that support the achievement of our goals

- Working capital and other general corporate purposes