DEBITUM
NETWORK

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Borderless small business financing

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White paper

V1.1, 01-11-2017

This is the White Paper on the issue of potential benefits for the alternative finance industry to be decentralized with the blockchain technology. We offer a particular solution and provide detailed description and reasoning.

The minimum viable product is available at **https://demo.debitum.network**

The goal of this document is to demonstrate that our undertaking is worthy as well as to receive Your feedback. Please join our community via **https://debitum.network** to ask questions and make suggestions.

Debitum Network

https://debitum.network

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Preface

Very soon, Susan, who runs a small dry cleaning shop in Bangkok, will find herself engaged in a small conversation with a client, hoping to distract herself from the boredom of her day.

"It was, like, the whitest and softest shirt of my life, the one I cleaned here" the client tells her happily.

"I will recommend your place to our administrative director."

Soon enough, Susan is looking at a copy of the massive outstanding invoice of hers, the order behind it being from the entire corps diplomatique, ten times beyond her current capacity. The money is hers but not quite yet — she must wait for up to 120 days. She neither has the working capital needed at the moment nor a lack of willpower to keep the client by all means.

Perhaps she could use some traditional extended overdraft, but to get financing, businesses often have to struggle through an inadequate 'presumption of guilt' with 'judges' [salaried non-entrepreneurs] unwilling to listen. Good borrowers are in a position to prove that two plus two isn't five and remain unfinanced, albeit the whole point for institutional financiers to exist in this fundamentally inflationary economy is to ensure the maximum circulation of capital. While alternative financing channels have emerged as a necessary measure, effective international marketplaces and transparent pledge security registries have not been developed.

> “When I work hard, when my clients respect me and I receive large orders from them, the idea that my business has problems with accountability sends me into angry fits,” Susan told a friend of hers, Mario.

He shared an idea with Susan: large businesses spend a lot of money trying to predict the eventual cost of capital and the cash flow, but you should use the power of an open market—Debitum. In a matter of minutes, Susan turns her invoice in and receives her funding while associated interest and charges start travelling as a cryptocurrency that is liquidly trading in pairs to major fiat and cryptocurrencies. Thus, the market tariffs her on the prediction of when the client will pay and provides the money immediately. The open-source, distributed network of hundreds of local debt validators and millions of global loan providers quickly makes up a customized offer for Susan.

Mario was the right guy to ask because back in his days of glory, having him on vacation seemed too stressful for the entire domestic financial community. When he was on leave from his office at the Anti-Fraud Dept., financiers could expect bizarre and disturbing developmentsto occur at any moment. Picture this: a local exporter issues a large invoice to a foreign buyer and offers it to several invoice financing firms, receiving funds from at least three and cashing in 0.8x3=2.4 of the invoice sum. While one financier later receives the payment from the buyer, others don’t. As the exporter goes bankrupt, the question arises: who has secured the buyer’s payment in the first place? The financier who’s got the money is in trouble too, because the other firm has secured the receivable with tax authorities and has the real

case to claim. What makes it even worse is that the buyer makes a mistake and double-pays upon the same invoice to the seller. Not to mention the buyer never gets his goodsdelivered.

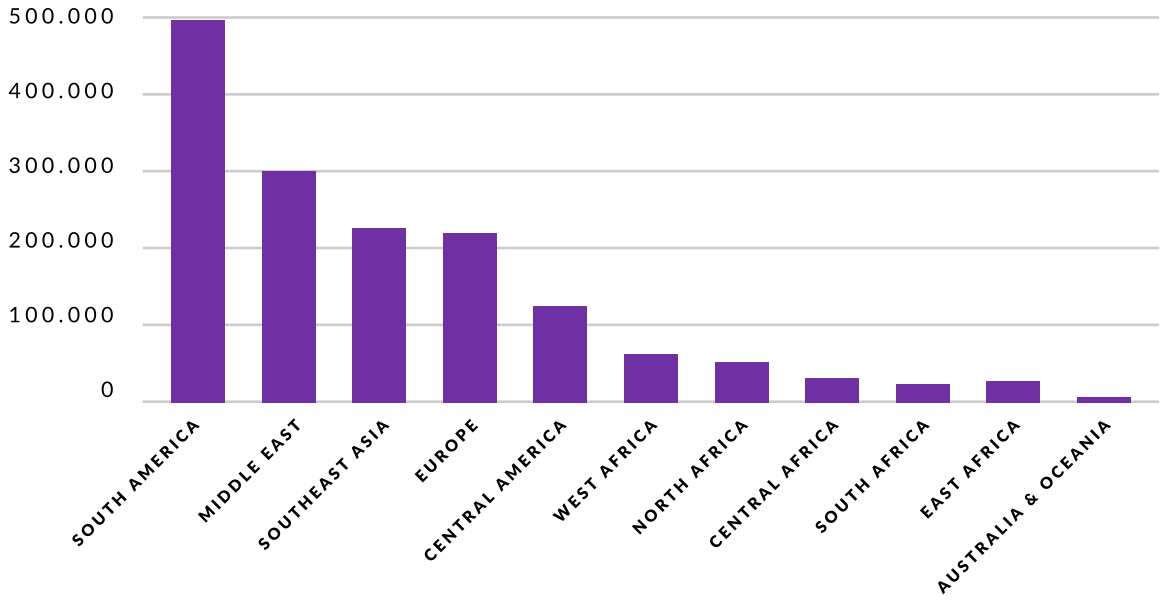
The gallows humor of this story is that a person like Mario has never existed to prevent frauds, nor is he around to advise a yet inexistent but highly demanded service like Debitum.

Challenge and market opportunity

Global credit gap

In accordance with the World Bank's review, approximately 70% of all micro, small and medium-sized enterprises in emerging markets lack access to credit. At the same time, the small and medium-sized businesses stratum is the most promising target audience for financiers. Among industry experts, small business finance is considered today as a globalissue worth addressing — formally registered small businesses account for more than half of the GDP in developedcountries.

SMEs growth globally is capped by inflexible local financing, creating $2 trillion credit gap worldwide as accounted by IFC, the World Bank organization:



Region	Credit Gap, $M	SMEs, number	Credit Gap / SMEs, $	Unserved & Underserved, % of SMEs
South America	495 686	34 640 661	21 392,93	51,12%
Middle East	297 327	7 365 431	41 444,13	42,73%
Southeast Asia	218 284	71 430 759	22 719,15	46,27%
Europe	210 120	9 400 815	20 403,62	51,50%
Central America	124 145	17 828 851	12 540,08	48,77%
West Africa	60 808	16 737 793	6 032,83	53,82%
North Africa	56 483	13 103 327	7 583,91	49,67%
Central Africa	29 657	5 696 801	13 871,42	54,50%
South Africa	22 130	9 280 826	4 304,56	47,22%
East Africa	21 216	7 940 609	3 707,39	50,80%
Australia & Oceania	2 605	781 180	4 369,25	49,33%

Source: https://www.smefinanceforum.org/data-sites/ifc-enterprise-finance-gap

The data accounts only for formal SMEs; however, the World Bank estimated that informal companies worldwide have additional credit gap of around $1 trillion. Moreover, one must understand that potential of offering new finance instruments also exists in developed countries not officially accounted for having a credit gap.

Hence the total market opportunity may well be larger than the $1.538 trillion noted as unserved or underserved by the World Bank.

Alternative finance industry

Why the traditional banking industry established more than 600 years ago is not able to solve the outstanding credit gap? Both banks and small businesses are responsible.

The banks are responsible for cherry picking and mostly working with less risky and larger businesses due to low risk tolerance of traditional finance industry. As there are so many legacy solutions in banking industry, mostly inflexible and standardized terms are used, it is very costly for banks to serve each individual customer. Thus banks are trying to maximize their income (interest and fees) from each individual business case by working on larger business cases.

Also the abundance of local banks — where a fellow banker would be familiar with a local business — is a thing of the past. For example, 30 years ago, in 1984 there were 14 400 commercial banks in USA; however, today there are only 4 982 banks left. Such decline of individual banks can be explained by centralization that brings more internal regulations and centralized processes, making it harder for banks to serve small, local companies.

On the other hand, in a small company, finances are normally taken care of by owners, not by dedicated professionals. Good financial management is rarely a core strength of a small business. Actually, accessing external finance is often named as the poorest area of expertise.

The industry that has taken the challenge to solve the problem up is often referred to as 'alternative finance'. As the name itself suggests, alternative finance is when someone borrows money or sells equity, choosing an option to go a non-traditional, non-institutional route.

Alternative finance is an umbrella term for various financing options such as peer-to-peer lending (P2P), crowdfunding, balance-sheet lending, , invoice trading (loans backed by account receivables), supply chain finance, reverse factoring, merchant loans, VAT financing, and others. No single institution, company, or regulator covers all business spheres in alternative finance. Some of largest alternative finance companies are Zopa in UK (market size of xxx USD), LendingClub in USA (market size of xxx USD) or CreditEase in China (market size ofxxx USD).

Such alternative finance services usually ensure initial initial access to financing for SMEs by providing services and financing when traditional banks would not. In long term financing received via alternative finance services allows SMEs to grow and to become "bankable", hence being able to access traditional finance instruments. Hence the alternative finance industry is operating as a bridge financing that allows business to grow and reach the riskless requirements of clumbersome traditional finance industry. In essence filling the gap between what strongly constrained and strictly regulated traditional institutions such as banks can offer and what individuals or some smaller businesses can possibly comply with.

Flexibility is key, but a great deal of the business essence also comes from the effectiveness of online operations and the idea of crowdsourcing. Another reason why alternative finance is booming might be that investors have grown educated enough to not be happy with allowing banks to earn on their money and pay out only marginal interest rates. Many people feel it is worthwhile to get connected with borrowers directly. Last but not the least, unlike traditional institutions, who do much of the work manually and do not share data concerning the risk assessment, alternative financiers are highly automated and interconnected which gives them an additional competitive advantage.

Besides easier access to funding, an important benefit of alternative financing is its higher speed of operations and convenience. Of course, most of the business is done online, paperwork is minimum, and funds are usually made available in a matter of hours or days, which in all cases is significantly quicker as compared to banks.

The World Bank recently estimated that the world's alternative finance market could grow to $90 billion of investment by 2020 from $34 billion at present. As banks see increasingly stricter regulatory burdens, both investors and SMEs will seek other financial solutions.

Globalization of available capital

As the enormous credit gap is still there and growing, we should admit the incumbent solution is not likely to cope with the problem, so a different approach is required. The decentralization of lending, and the continued disruption to financial services, therefore, looks set to continue narrowing of the credit gap for SMEs.

There is a lot of capital available to be invested in various finance instruments or lent for interest throughout the developed world. Available capital for lending; however, is limited in less developed parts of the world – the same parts that experience the credit gap indicated by the World Bank. There is a mismatch between geographical availability of capital and local businesses.

Partly the geographical mismatch is being solved by many alternative finance companies, especially marketplaces and P2P platforms (KPMG global survey in 2015 shows 1086 alternative finance platforms). However, many of them operate in a single or limited markets (most often up to 10 countries), many of them in the developed world like USA, UK, France, Germany, or the only noteworthy exception - China.

Based on our professional experience it is well understood – different steps of the financing process are often very specific to local environment. For example, debt collection procedure in most parts of Eastern Europe is based on German law and precision of procedures; however, in many countries throughout Southeast Asia debt collection is based on a notion of shame and public disgrace. Hence to efficiently move available global capital from the developed part of the world to the less developed, one must connect it to the local and regional counterparties.

Necessity to decentralize using blockchain

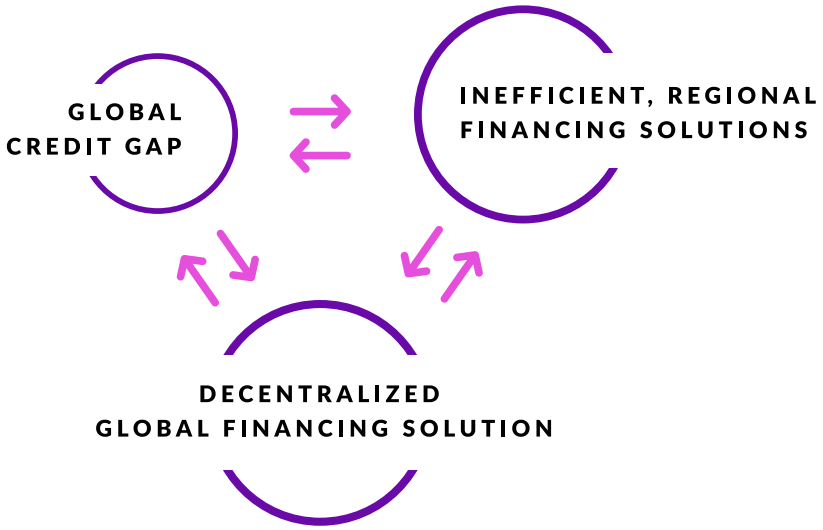
Any solution to meaningfully decrease the existing credit gap requires three main characteristics: trust, full end-to-end financing process and structure supporting exponential growth. KPMG in their report on global alternative finance industry supports this by stating that from 2017 and onward for alternative finance market to grow and truly become global phenomenon, it needs:

- ✔ a transparent and supportive framework
- ✔ to deal with investment failures, to ensure confidence of global investors incredit assessment and debt collection processes
- ✔ to gain distribution via efficient sales channel

Internet and online marketplace or P2P solutions are trying to allow that; however, when dealing with different parts of the world trust between counterparties is more important than technical capability of interconnecting. Traditional non-crypto market place solutions can't ensure successful global integration of all local, regional

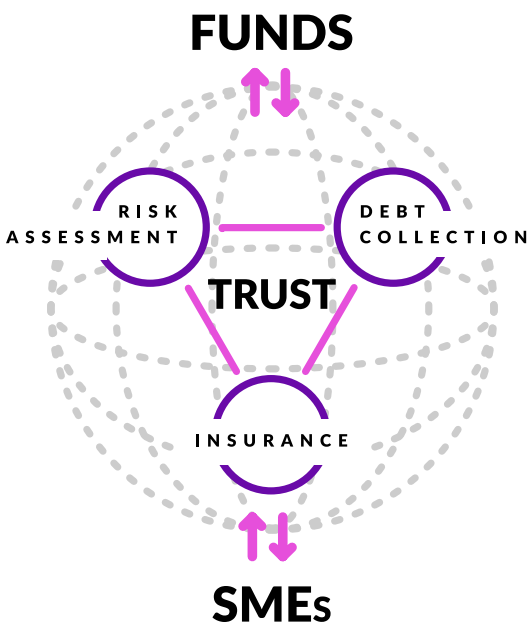
and global counterparties. Why? Because existing centralized solutions force various global counterparties with different cultural and experience backgrounds to trust a single party running the marketplace. If the central party goes out of business, most likely investors will not be able to get their investments back directly from the borrowers. Global problem requires global solution only allowed by the blockchain technology.

Blockchain by design allows to ensure ultimate transparency and trust, allows to automate processes by using smart contracts and its decentralized nature allows for exponential growth of the number of members within any blockchain based solution.



Solution - Debitum Network

Lending money is all about trust and its mechanical gears such as collateral, quantified reputation, and fear of punishment. Born in already well-established societies, we take the existing business trust culture for granted; we rarely doubt its basics and address the quantitative measurements of business friction costs. However, to solve global credit gap – we should mostly operate in younger countries where business trust is not granted. Using trust based blockchain solution Debitum Network ensures needed trust for all counterparties, especially investors, to operate within the ecosystem.

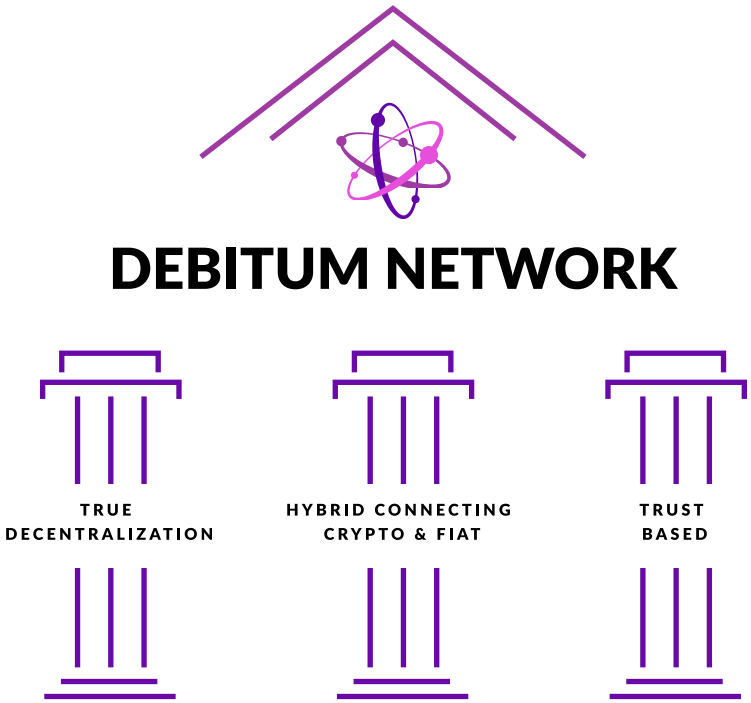


To consider comparatively complex lender-borrower relations, let's take a step back and see how Bitcoin and other cryptocurrencies may change and simplify retailer-consumer interactions. To be able to conveniently pay in all stores, consumers go to the market of payment instruments where they have a narrow choice of VISA or Mastercard which are essentially the same.

Retailers have more options — Ingenico, Verifone, and a few others—but, since the interchange fee is still there down the line, that seeming variety does not allow them to circumvent high costs. Putting its currency and monetary dimensions aside for now, when Bitcoin, a decentralized payment tool, steps in, it theoretically allows consumers and retailers to interact with no intermediary, using the free open source tool. In practice, however, there are 'Bitcoin operators' such as a wallet software or side-chain providers who make life a lot easier without charging monopoly-like fees.

Three main pillars of the ecosystem

Debitum Network is based on three important pillars that ensure its uniqueness, disruptiveness as well as will ensure positive results on smalling the credit gap:

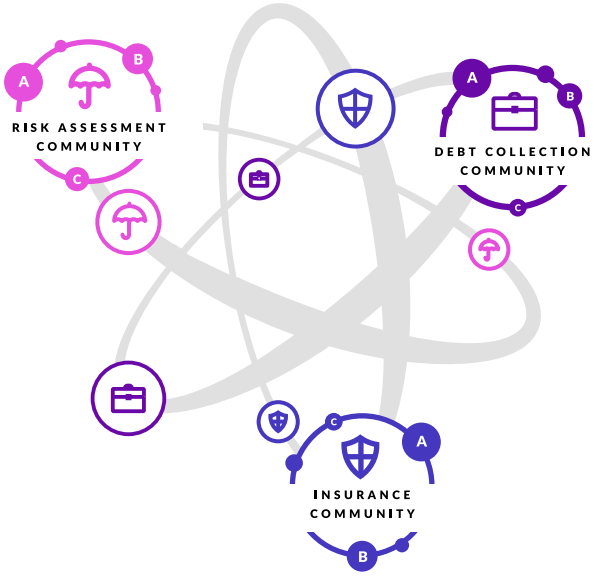


True decentralization

There are 154 countries indicated by the World Bank where SMEs experience credit gap and where a solution like Debitum Network could help closing that gap by providing ecosystem of counterparties and connecting it with global investors. However, saying that Debitum Network team will just set up in 154 countries and bring the ecosystem to market on their own would be a fallacy.

As Debitum Network is initial market maker and facilitator for solving worldwide credit gap by connecting SMEs with global investors who can rely on service provided by local or regional counterparties, i.e., verification, risk assessment, insurance, debt collection. It is possible to attract global investors to distribute their available capital as well as attract SMEs to borrow and finance their growth; however, to make the whole ecosystem truly decentralized, global and self sustainable service providers will be organized in 'communities'.

Communities are decentralized and truly global, consisting of various service providers and 'institutional borrowers' - alternative finance companies already serving SMEs that could attract more global investment and restructure their portfolio by using Debitum Network.



A community consists of one or many local or regional service providers that work together to ensure service provision. Members of the community can be both crypto or non-crypto (having a crypto agent) based. Communities will offer a unique motivation for each individual as well as whole group to become more trusted as when any service is performed both the individual counterparty and their community will earn or lose trust rating.

A community leader will get a fee via community's trust arbitrage smart contract from each of community's members activity, hence the leader would be motivated to develop business and grow the community - thus leading to self sustainable Debitum Network ecosystem in thelong run.

Borrowers and investors should be excited to have communities within Debitum Network as they can trust their service to community and whoever is there can deliver it. On the other hand, it is better for individual counterparty to be a part of a community as it provides more business opportunities and faster growth via trust (as community's trust grows, each counterparty's trust de facto grows).

Communities are also the ones that take care of resolving issues, marketing their members, growing the community and other tasks relevant to the community (on and off the blockchain). Each community will have a community leader who has additional functions available for community trust arbitrage smart contract.

We believe that using communities is the only way to ensure that needed level of control is decentralized and closer to the final customers of service providing counterparties – borrowers and investors. At the same time, such organizational design provides a lot of freedom to local and regional communities and service providers. We believe that this is the only way to ensure fast, efficient and stable global growth of Debitum Network.

Setting up a community

Anyone (single or several companies, single or more individuals) who wants to start a community for service provision within Debitum Network, must implement *Debitum Network Community* smart contract interface / API. Additionally, in this smart contract, the community leader must provide rating calculation algorithm for community members and provide it for an audit by Debitum Network Trust Arbitrage to ensure the rating calculation fits local specifics and are objective and in line with all other rating calculations.

As an alternative Debitum Network provides an implementation of *Community trust arbitrage* smart contract. Community leader may order implementation of *Community trust arbitrage* smart contract from Debitum Network Trust Arbitrage smart contract factory. Community is listed on Debitum Network portal if and only if *Community's trust arbitrage* smart contract passes audit.

If community will choose to construct their own implementation of *Community trust arbitrage* smart contract they have to consider implementation of *community trust arbitrage* smart contract standard (protocol).

Feedback management

All audited trusted communities will be listed on Debitum Network. If service requestor (borrower or investor) will have feedback about provided services from community member, community must ensure possibility to register feedback (both positive and negative) and communicate with member, especially to solve negative feedback.

Community and community leader must take responsibility for ensuring that provided service from their members is appropriate and performed on decent level of quality. Otherwise they must ensure the underperforming counterparty improves or is removed from the community.

If service requestor (borrower or investor) won't get any follow up actions from particular community, it will be possible to register feedback with Debitum Network Trust Arbitrage. It will investigate if community actions were sufficient. If not, Debitum Network Trust Arbitrage may take a pre-designed action, i.e., use counterparty's frozen Debitum tokens to compensate feedback provider, manually drop rating for the counterparty or its community, or even ban the counterparty or its entire community from Debitum Network.

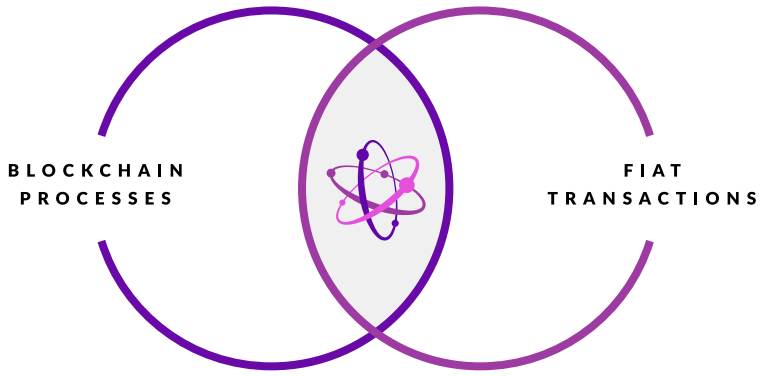
HYBRID connecting crypto and fiat

Importantly, as crypto is not recognized as a traditional currency in most countries (except for Japan) and as most cryptocurrencies are too volatile, most business borrowers and investors in short and medium term would prefer to deal with loan principal and interest payments in its usual legacy way – using fiat payments.

Incorporating loan-related capital transfers might serve as a fancy façade for any project, but the interest in such a system will remain chiefly an academic one for years to come. By a premature move of onboarding loan-related capital today, we would spook many potential users. Hence Debitum Network will use crypto currency only for other financing cycle related fees and guarantee-like token freezes.

As for the loan-related capital, we look at it as "physical goods" that can be dealt with off-the-blockchain with reference to it on the blockchain. The ecosystem has a

designated role – fiat facilitator – to take care of all fiat transactions, make necessary records on the blockchain using smart contracts and ensure that the ecosystem can be used from day one.



Hybrid approach allows us to combine current state of business practices and blockchain infrastructure to have an operational ecosystem from day one. At the same time it does not forbid to have a long term vision of crypto only transactions. As time goes by and crypto currencies become more mainstream, Debitum Network will be able to develop and evolve and transfer loan-related capital on blockchain. Meanwhile, we will work hard to promote blockchain solutions to SMEs worldwide at the same time addressing the credit gap issue small businesses are having.

Market making within Hybrid platform

As Debitum Network operates on the three-sided market. The problem of reaching a critical mass of users on all sides (borrowers, investors and service providers) is essential.

It will be possible for Debitum Network to use Debitum tokens from Reserve to solve 'empty room' problem by lending Debitum tokens to various parties and

motivating them to try Debitum Network. Later, as they receive loans, interests or payments - lent Debitum tokens will be returned to Reserve.

Debitum Network also aims to use 'at the time not needed funds' to conservatively lend them to borrowers to stipulate more and more borrowers to join Debitum Network. As there will be more investors in the ecosystem, these funds will be returned to Debitum Network budget.

Lastly, we need to ensure compatibility and interoperability with other existing finance or FinTech solutions. That way we would allow existing incumbent companies to integrate to Debitum Network and become part of its ecosystem. Debitum Network does not aim to 'replace' everything that has been built - we must disturb the current way of doing business but at the same time allow existing companies and businesses in the alternative finance sector to connect and move from their existing solutions to Debitum Network.

TRUST based

By combining fiat operations and highly trustable and efficient blockchain based financing process Debitum Network will ensure high interest from SMEs and investors. As lending is primarily driven by trust in the borrower's ability to repay, Debitum Network will ensure that all transactions will interconnect with trust arbitrage smart contract that will provide objective trust rating for each single counterparty as well as communities of counterparties (i.e., risk assessors community in a single country).

To ensure the objectivity Debitum Network's trust arbitrage smart contract will be based on hard blockchain-based facts like services' smart contracts engaged in, loan principal amount worked with and other. Each 'positive' experience (like successful execution of a service smart contract) will add some trust rating points, while each

'negative' experience (like failure to provide service in prior agreed period of time) will deduct some trust rating points. This will allow investors to clearly see the trust level of involved counterparties in every single financing deal as well as will motivate borrowers, service provider communities and individual counterparties to act responsibly.

Such approach measuring each counterparty's trust level will allow for informed decision making by:

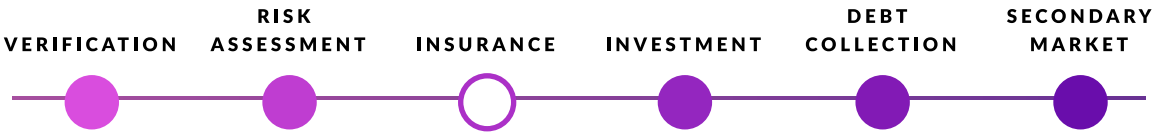
- ✔ Investors will clearly see the trust level of the potential borrower and will be able to make trust vs. interest rate decision.
- ✔ Anyone will clearly see the trust level of any other counterparty that offers services and will be able to make trust vs. price of a service decision.
- ✔ Communities to see how their individual members behave, allowing to make organizational decisions based on trust points earned or lost ability to have such objective and trust based information for deciding on distribution of available capital for financing SMEs and lending is a currently non-existing opportunity for global investors. Hence Debitum Network creates a new market, a new asset class that will satisfy global investors demand, attract their available capital and solve worldwide credit gap challenge for SMEs.

Business cycle of the financing process

It is important to notice that Debitum Network recognizes the need for more than two main parties (borrower and lender) to exist to make a successful investment transaction. The team behind Debitum Network does not bluntly believe in 'theoretical' twofold peer-to-peer approach connecting just investors with borrowers. All other stages of the financing process must be done by someone – in the case of many of the current alternative marketplaces or P2P networks, usually those stages are done by loan brokers / operators or by P2P operator itself.

To allow greater exposure and better access to financing for SMEs, the complete financing process must be decentralized. To do that one must understand that a financing process is based on a set of specific stages, i.e., potential customer must indicate the need for finance, financial asset used as a collateral for the loan must be verified to ensure authenticity, risk of the potential loan must be evaluated, funds must be provided, later on (debt) collection process should be activated.

Additional services like insurance of the loan provided or secondary market for sale/purchase of existing investments (loans already provided) may be provided around the core business process.



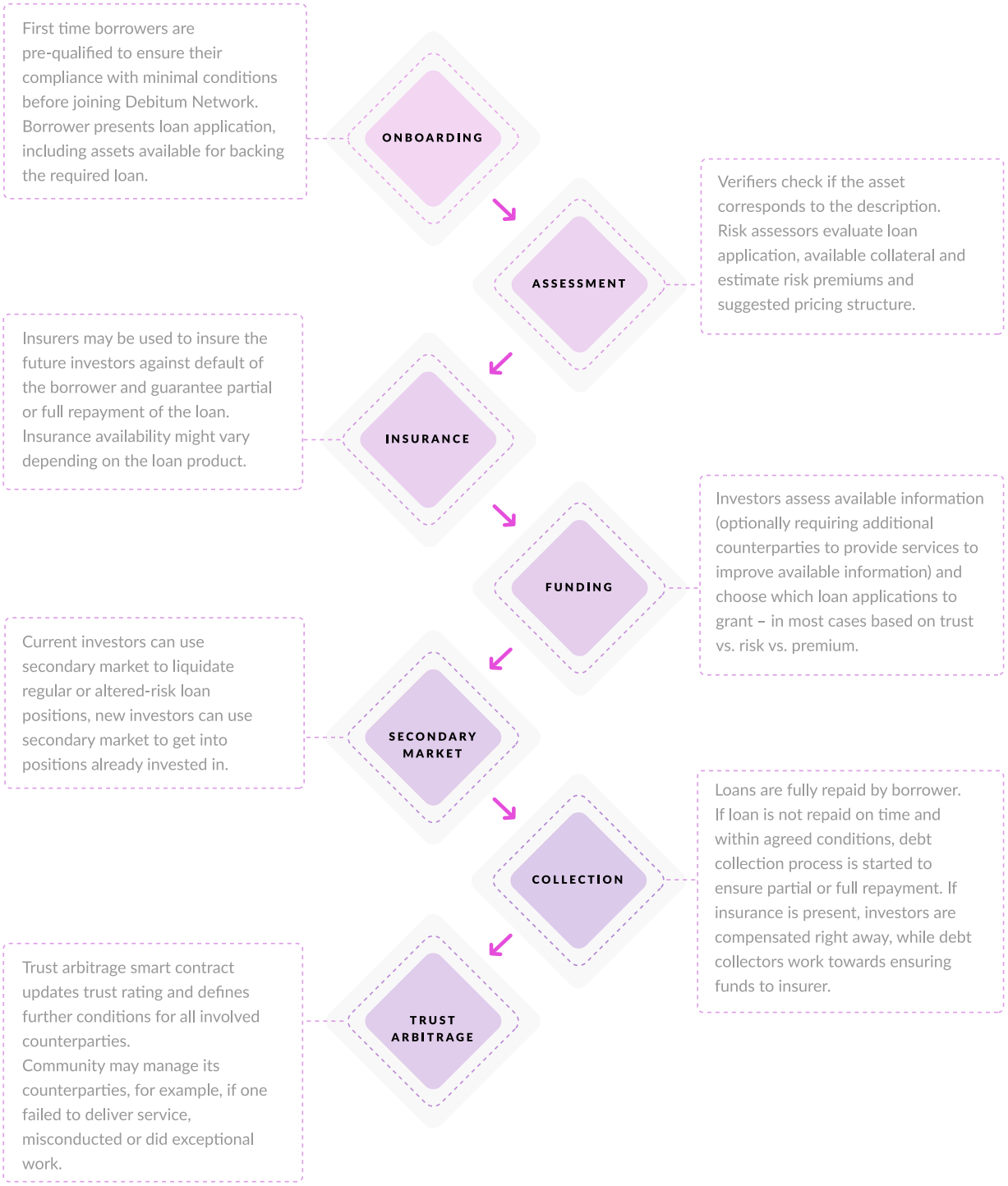
Only if all steps are available, it is possible to ensure full end-to-end SMEs financing process. Currently, this end-to-end process is locked by traditional finance institutions or by alternative financing companies. Unfortunately, it means that investors must put all their trust and funds in single interconnected hands of a particular company and its employees from various departments.

Debitum Network allows potential investors to transparently weight investment opportunities and directly invest in SMEs (opportunity traditionally locked by centralized finance sector). Such ecosystem works as an incentive layer on top of smart contract framework, which can provide the logical infrastructure for the data and payment exchange. Transparency and additional trust it builds allows currently localized or regionalized alternative finance industry to become truly global, in addition, eliminating two levels of 'centralization':

- ✔ A middleman in a form of traditional financial institutions or centralized alternative finance companies or platformsю
- ✔ Opening and decentralizing individual stages of traditionally locked financing process.

Stages of the financing process

A financing process for a specific asset can take various forms, but the stages of any full end-to-end financing process are the same:



More detailed descriptions of the stages with more details in regards of how the stage is carried on within Debitum Network:

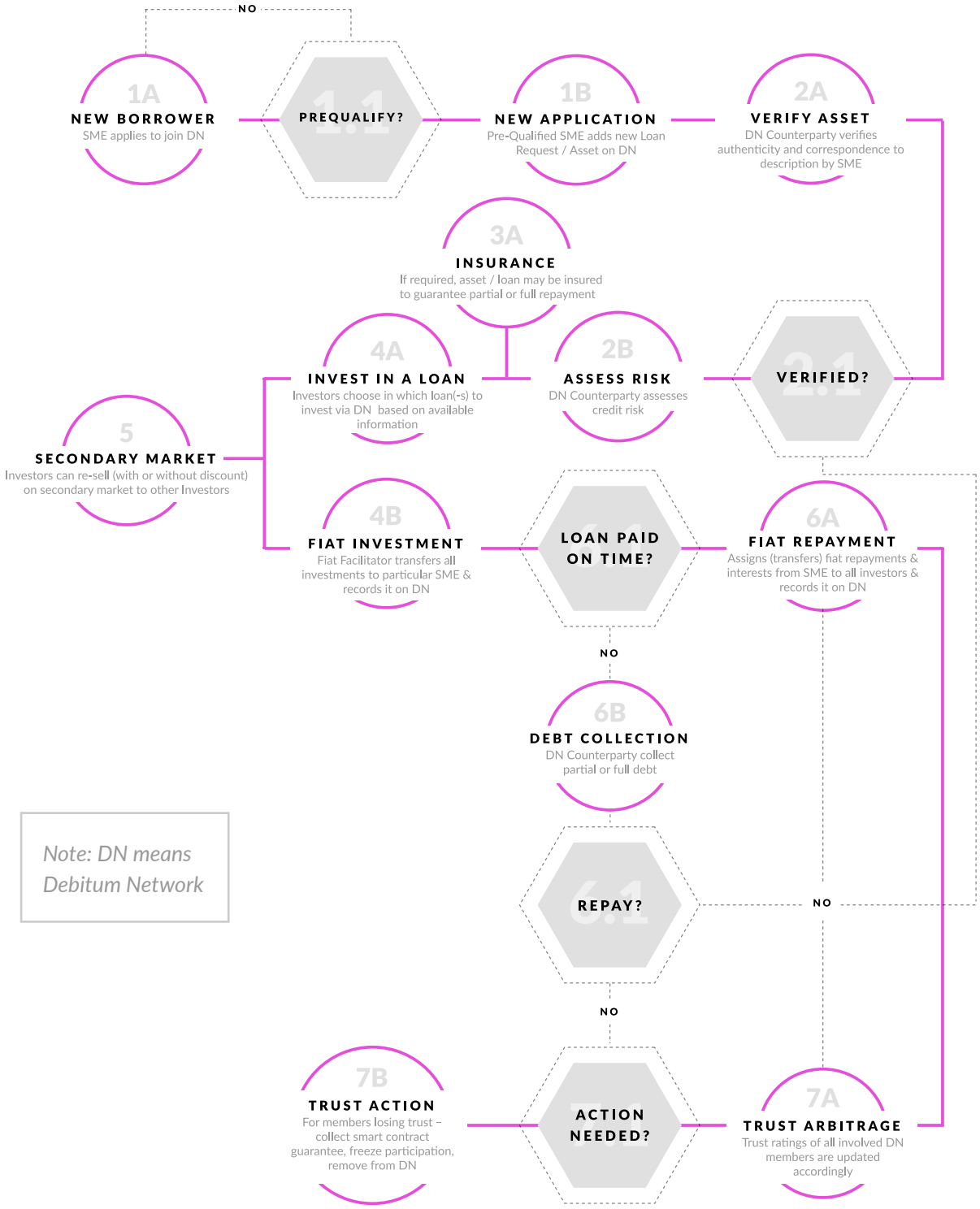
Stage	Process	Description	Actor	Crypto vs. Non-crypto
On-boarding	Pre qualification and Application	First time borrowers are pre-qualified to ensure their compliance with minimal conditions before joining Debitum Network. Borrower presents loan application, including assets available for backing the required loan.	Borrower	Crypto
Assessment	Asset verification and Risk assessment	Verifiers check if the asset corresponds to the description. Risk assessors evaluate loan application, available collateral and estimate risk premiums and suggested pricing structure.	Verification and Risk assessment Counterparty	Crypto

Insurance	Insuring loan to be provided	Insurers may be used to insure the future investors against default of the borrower and guarantee partial or full repayment of the loan. Insurance availability might vary depending on the loan product.	Insurance Counterparty	Crypto
Funding	Investment in a single or multiple loans	Investors assess available information (optionally requiring additional counterparties to provide services to improve available information) and choose which loan applications to grant – in most cases based on trust vs. risk vs. premium.	Investor	Crypto (if additional services required) Non-crypto (fiat transfer of principal amount)
Secondary market	Sell / Purchase existing investment in a loan on a secondary market	Current investors can use secondary market to liquidate regular or altered-risk loan positions, new investors can use secondary market to get into positions already invested in.	Investor	Non-crypto (trade existing investments in fiat) Crypto (trade of a new tokenized asset class)

Collection	Repayment of loan or Debt collection if unpaid	Loans are fully repaid by borrower. If loan is not repaid on time and within agreed conditions, debt collection process is started to ensure partial or full repayment. If insurance is present, investors are compensated right away, while debt collectors work towards ensuring funds to insurer	Borrower or Debt collection Counterparty	Non-crypto (fiat transfer of principal amount + interest, legal debt collection actions) Crypto (records of debt collection process)
Trust arbitrage	Automatic updates of trust ratings and Community manages own counterparties	Trust arbitrage smart contract updates trust rating and defines further conditions for all involved counterparties. Community may manage its counterparties, for example, if one failed to deliver service, misconducted or did exceptional work.	Debitum Network smart contracts, Communit	Crypto (automatic smart contract transactions, management of community smart contracts) Non-crypto (management of community

Detailed steps of financing process

Detailed financing process indicating actions of various members of the ecosystem as well as automatic Debitum Network actions based on smart contracts:



Note: DN means Debitum Network

Description of Debitum Network financing process:

- **1A New Borrower:** New SME applies using their business credentials to join Debitum Network and must undergo initial pre-qualification process, i.e., prove that it is a legal company, provide some generic company data. SME is automatically check against Trust arbitrage smart contract to make sure that if SME was 'removed' earlier from Debitum Network, it would not be able to return before the reconciliation period ends.

  SMEs can join Debitum Network directly or via a broker / agent who deals with SME non-crypto way while moving the needed loan onto Debitum Network. Moreover, to further stipulate self sustainability of the ecosystem, referral system compensating anyone attracting a new borrower with Debitum tokens will be in place.

  Borrower is registered on Debitum Network, a new account for crypto currency is created (unless an existing one is used during the onboarding process).

- **1.1 Prequalify:** If Borrower passes automatic prequalification (i.e., amount of revenue, time from registration), the financing process advances; otherwise Borrower can't join Debitum Network and can try doing it later.

- **1B New application:** Borrower can apply for a new loan (indicating needed amount, acceptable interest rate, advanced interest rate in case of minimal late payment, repayment date and other critical data) and provide information on assets to be used as a collateral for the loan, if any. Initial validation of application will be taken care - to automatically refuse applications that would not make any business sense for the ecosystem thus not wasting members' time as well as not to fill the ecosystem with 'garbage' applications.

All data is recorded on the blockchain. New smart contract for particular asset is automatically created. Borrower shall have Debitum tokens before applying for the loan as Borrower pays Debitum tokens for asset creation within the ecosystem.

- **2A Verify asset:** Borrower (or Investor) requests verification counterparty to verify the asset and authenticate it to description provided using traditional measures, i.e., phone call to company, checking signed copies of documents, or automatic process, i.e., automated process linked to local databases or other blockchain solutions.

  New smart contract for verification of the asset is automatically created. Borrower (or Investor) may request more than one verifier to perform this step, then all individual verifications as well as aggregated verification is presented. Results of verification are recorded to blockchain. The initiator of this step (Borrower or Investor) shall compensate counterparty for performing this step in Debitum tokens - considering trust rating vs. price of verification. Amount of 10% from all received fees by the verification counterparty is frozen to guarantee quality of future services delivered.

- **2.1 Verified:** If asset is verified, the financing process advances; otherwise the fact about 'unverified asset' is passed to trust arbitrage smart contract and the financing process is terminated, the loan request (based on the asset) is removed from Debitum Network.

- **2B Assess Risk:** Borrower (or Investor) requests risk assessor counterparty to assess the risk of the asset (loan). Risk assessment is a complicated process that is influenced by data available for different geographic locations and involves various facets of potential risk like SME, its financial data, its customers, liquidity of assets provided, market they operate, location they operate etc.

Counterparty can do risk assessment manually by analyzing data or by using automated risk scoring algorithms.

New smart contract for risk assessment is automatically created. Borrower (or Investor) may request more than one risk assessor to perform this step, then all individual assessments as well as aggregated assessment is presented. Results of risk assessment are recorded to blockchain. The initiator of this step (Borrower or Investor) shall compensate counterparty for performing this step in Debitum tokens - considering trust rating vs. price of risk assessment. Amount of 10% from all received fees by the risk assessment counterparty is frozen to guarantee quality of future services delivered.

- ✔ **3A Insurance:** The loan may be insured to decrease risk for Investors against default of borrower and guarantee partial or full repayment of the loan. Hence ensuring better traction of financing. It is a step performed by insurer counterparty on the request of Borrower or Investor.

New smart contract for insurer is automatically created. Borrower (or Investor) may request more than one insurer to perform this step. Fact of insurance is recorded to blockchain. The initiator of this step (Borrower or Investor) shall compensate counterparty for performing this step in Debitum tokens - considering trust rating vs. price of insurance and proposed terms of insurance. Amount of 10% from all received fees by the insurance counterparty is frozen to guarantee quality of future services delivered.

- ✔ **4A Invest in a loan:** Investors use list of available loans / dashboard of available loans on Debitum Network to check, pick and invest in one or many loans at the same time. Investors will be able to request more services to have better information about the asset or based on the available information make an informed decision in which loan to invest. Manual and automatic investment options will be available – automatic option allocates designated investor's

funds based on predefined criteria, for example, risk rating, amount of loan, geographic location, market operated in etc.

Investors will use existing borrower's asset smart contract to record investment. To have an automatic investment Debitum Network will scan and analyze existing borrowers asset smart contracts and automatically invest in the loans corresponding to automatic investment options set by particular investor. Fact of investment is recorded to blockchain. Investor needs to have Debitum tokens before investing in a loan as Investor should pay Debitum tokens for investment creation within the ecosystem.

- **4B Fiat investment:** As Debitum Network is a hybrid solution, all loan-related payments (principal and interest) will be dealt in fiat currencies and treated as "physical financial goods". There will be a specific counterparty to ensure fiat transactions – a fiat facilitator. Investors will make fiat transfers to fiat facilitators who will make needed transfers to Borrowers based on investor's investment indications on Debitum Network. As Borrowers need to receive a single fiat wire for the deal, many investors' payments in fiat need to be aggregated beforehand by fiat facilitator.

  Fiat facilitators will use existing borrower's asset smart contract to record fiat payments sent. Fact of fiat transfer is recorded to blockchain. Fiat facilitators keep a small percentage of fiat payments made as a compensation for their services of distributing fiat from investors to borrowers and vice versa.

- **5 Secondary market:** As soon as investors have invested in a loan, a new tokenized asset class, a sub-investment instrument, is created. Such crypto assets can be sold to other investors directly on Debitum Network's secondary market. Secondary market ensures that other investors will be able to purchase "late assets with discount" or current investors will be able to liquidate their existing investment with or without discount. Investor may list investments

in loans that investor wants to resell and indicate discount offered to new investors. Other investors may choose to buy the existing investment.

If one investor buys an existing investment from another investor on Debitum Network secondary market, investment smart contract is changed that ensures the repaid principal and interest is transferred to the new investor. Results of secondary market transactions are recorded to blockchain. Current investor needs to have Debitum tokens before publishing an existing investment on a secondary market as current investor should pay Debitum tokens for creation of a secondary market item within the ecosystem.

- **6.1 Loan paid on time:** If Borrower repays loan with interest on time by making a fiat payment to fiat facilitator, process is continued by fiat facilitator.

If Borrower does not repay loan with interest on time (including advanced interest period, if such was anticipated), debt collection process is started.

- **6A Fiat repayment:** When Borrower repays principal and interest, fiat facilitator assigns received fiat to investors as well as exchange agreed part of interest received to Debitum tokens and transfer to investors' accounts on Debitum Network. This allows investors to keep continuously using services on the ecosystem. Fiat facilitators repay fiat to investors only if requested by an investor. Fiat is not repaid every time as holding it allows fiat facilitator to optimize for fiat transfer costs, to distribute operated fiat over various regions and countries. It is important as SMEs joining Debitum Network should use local (the cheapest) fiat transfers available.

Fiat facilitators will use existing borrower's asset smart contract to record fiat payments received. Fact of fiat transfer is recorded to blockchain.

- **6B Debt collection:** If Borrower does not repay loan with interest on time (including advanced interest period if such was anticipated) a new smart contract for debt collection is automatically created and debt collection counterparties may make proposals. Investors should vote on which proposal to take as they may be extremely different, i.e., anything from regain small amount fast to regain most of the amount very slowly. The period for votes closes either if more than 50% of Investors picked a single debt collection option or time dedicated for voting ends. The option most supported by Investors is picked and that particular debt collector starts work for all existing Investors (not only the ones that voted). When (part of) debt is collected, information is passed to fiat facilitator to understand how fiat payment received should be distributed.

  Fact of debt collection is recorded to blockchain. All debt collection costs are taken from the borrower.

- **7A Trust arbitrage:** When the process for particular loan ends (either by successful repayment of loan or buy debt collection process), automatic trust arbitrage process is triggered for all members involved in the particular loan.

  Each smart contract used throughout financing of a particular loan will automatically trigger trust arbitrage smart contract for both parties involved. Trust arbitrage smart contracts will be linked to main asset smart contract to follow 'the outcome' of the loan. Based on specific objective criteria trust rating will be updated (increased or decreased by certain amount of trust points) for each party involved.

  Service counterparties will not trigger Debitum Network trust arbitrage directly but via community trust arbitrage smart contract to ensure that the whole community represented by a particular counterparty gets their trust rating updated.

Trust rating can define availability, price, or priority for further actions within Debitum Network bringing financing process to a new level by optimizing financing process to promote the best performing members of the ecosystem.

Available trust ratings will be displayed on Debitum Network to allow other members to consider trust before engaging into mutual business operation. Data displayed may also include particular parts of trust rating, for example, number of successful transactions, number of 'thumbs up/down', number of disputes, and total transaction volume. With every successful transaction and good final ranking, the increase in the system reputation will result in additional Debitum token transfers across all involved members.

- ✔ **7.1 Action needed:** Specific business rules will be developed within trust arbitrage smart contract for automatic operations with Debitum Network members based on changing trust ratings. To do that Debitum Network will scan and analyze existing trust arbitrage smart contracts and performed designated actions if trust arbitrage smart contract corresponds to automatic actions designed.

- ✔ **7B Trust action:** Based on changing trust ratings, specific business rules will trigger trust arbitrage smart contract to perform certain actions. For example, if trust rating of a counterparty drops by 50% its community shall decide of what to do with particular counterparty, if no 'positive' or 'negative' action is taken – the counterparty involved is automatically frozen for certain period or removed altogether. Any automatic rule will be transparent and publicly available to anyone. They are needed to ensure that only trustworthy counterparties are participating within the ecosystem and to minimize fraudulence and potential trust damage to the whole global ecosystem.

To recap, financing process within Debitum Network is designed in a way that it can be used by direct counterparties for each financing stage, i.e., SME, investor, risk

assessor etc., but it also allows proxy counterparties to use Debitum Network and perform actual steps in non-crypto environment. For example, a loan originator can register instead of a single SME and resell existing SME loans to investors, a sales broker can register instead of investor and reinvest investors' funds, any broker may register instead of designated counterparty and resell needed services. Such approach ensures better Debitum Network growth opportunities, ensures more services to be traded for Debitum tokens on Debitum Network as well as allow new businesses to be created and formed around Debitum Network.

Made for present, ready for the future

On the global level, most of the financing stages currently are carried out manually – meaning that they require human interaction that is usually supported by technology or some sort of an IT solution. Currently there are fewer counterparties that have fully automated the processes.

However, as time passes, it is believed that stages of financing process will become fully automated, for example using artificial intelligence solutions, machine learning algorithms and similar. To be ready for such development Debitum Network will provide public APIs (protocols) for all smart contract types in the ecosystem. Hence Debitum Network will be built to support current way of working as well as will future automation – artificial intelligence solution will be able to use smart contract API and integrate its actions with Debitum Network.

Such API based approach allows Debitum Network to grow in the long run:

- ✔ it allows counterparties to integrate AI, machine learning, or traditional information systems to perform their services automatically, faster, more efficient and with less errors.

- it allows to integrate Debitum Network with other blockchain solutions, for example, supply chain blockchain solutions that could automatically provide Debitum Network ecosystem with trustworthy assets.

Technical mechanics

Debitum Network requires strong architectural design and bullet proof technical implementation to ensure successful launch and usability of Debitum Network.

The primary design goal of Debitum Network is to deliver the open system, which could not only communicate with ecosystem powered by blockchain but also that would be robust, easy to scale, and suitable for implementation for protocols needed for Debitum Network ecosystem. Users must have possibility to communicate with ecosystem not only through blockchain, but also by different system adapters using them through computer desktop or browser.

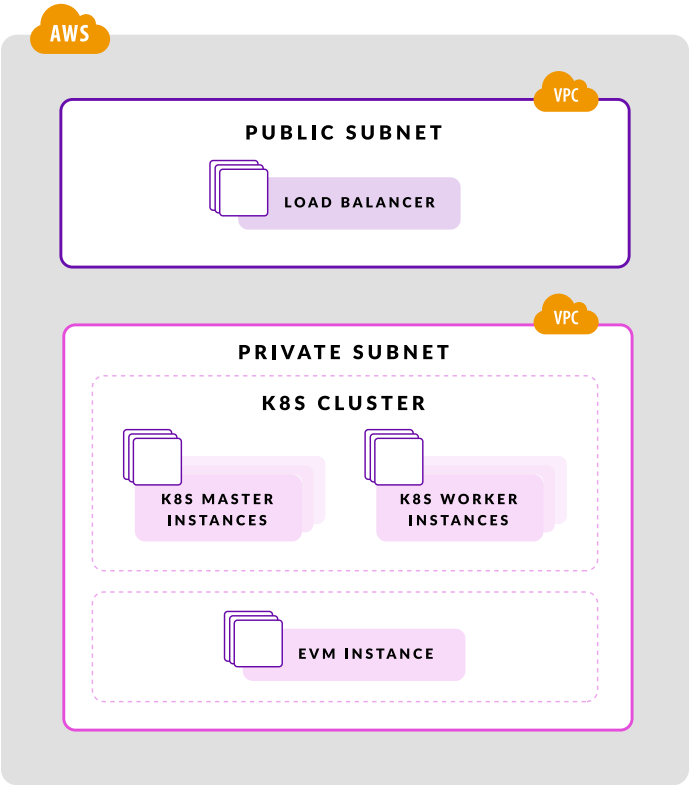
Infrastructure

Debitum Network is a comprehensive middleware with its core running on Ethereum blockchain and a number of gateways ready to incorporate counterparties who run other standards of distributed applications. Since Debitum Network does not incorporate its own consensus mechanism, its attack to sensitive data resistance and fault tolerance are equal to those of Ethereum's. For the same reason, Debitum has no internal common mode failure problem. A fundamental limitation of blockchain applications of being expensive is not relevant in Debitum Network's case because B2B transactions are relatively large. On average an SME loan is around 15 thousand USD, hence currently known blockchain application related infrastructure costs are relatively low.

For security purpose, system infrastructure will have public, easy available for everyone, and private, controlled by system administrators, subnets. Adapters will communicate with the ecosystem through load balancers in public subnet which

main goal is to send data for ecosystem parts in private subnet. In private subnet, EVM for communication with blockchains, would be deployed. Also, kubernetes cluster where application, which will communicate with blockchain, and provide data of smart contract status changes. All (which are not powered in Ethereum blockchains) infrastructure will run in Amazon Web Service infrastructure.

Blockchain proves the existence of the content, both borrower-related and deal-related. Hashed records are used for timestamps and current status of a deal. The main system textile keeps metadata links to complete versions of documents stored elsewhere, in other specialized blockchain-based systems. Some fair automation will be applied, so long as it does not force contributors to change their normal legal ways. Should the Ethereum ecosystem gain some legal acceptance, we will incorporate the corresponding updates. Maximum indexing and labeling of data for future use of big data and machine learning will be applied.



System components

Use Cases

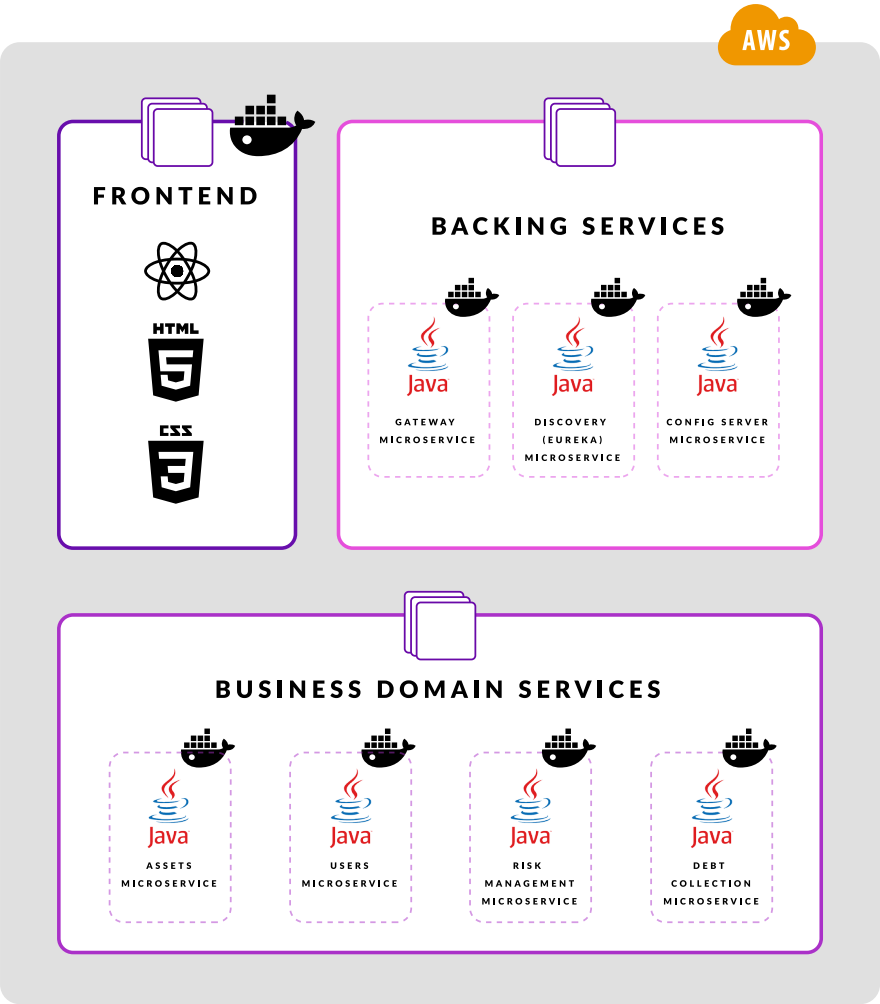
The following are the set of use cases that are architecturally significant to the Debitum Network system:

- ✔ **User management** — Debitum Network users will be able to securely register in system and manage their profiles, for providing data for all system participants in different groups.
- ✔ **Asset management** — Authenticated users will be able to operate with assets as Borrowers, Investors, and Fiat Facilitators
- ✔ **Risk assessment management** — Authenticated users will be able to register in risk assessment communities, provide risk assessment services, manage community as managers. Also, investors, borrowers, Fiat Facilitators will be able to order assets risk assessment and rate risk assessors.
- ✔ **Debt collection management** — Authenticated users will be able to register in debt collection communities. Investors, Fiat Facilitators will be able to order debt collection from debt collection communities and rate provided services.

Each use case will be separated by additional domain contexts which will communicate between each other.

Domain separation

Each use case will process in different domain context. Domains contexts will be managed by additional services, which will communicate between each other in orchestrated cluster. System design will have structure of the loosely coupled services. Decomposing the system into the smaller autonomous parts will improve modularity and makes easier to understand, develop, and test the all system.



Frontend Components

Although Debitum Network system processes will be managed in Ethereum smart contracts, users are not expected to interact with it through smart contracts manually. For this purpose, they will be using front-end components that make system functionality easy to use. Front-end components will be responsible to manage (in the background) a sequence contract interactions on the ecosystem network.

Backing Services

Not all system services will manage business domains contexts. System will consume backing services as part of its natural operations. In Debitum Network system we will have mainly three backing services:

- **Gateway service** — Service responsible for user authentication/ authorization management and protects back-end resources in the all application. Will manage if resources can be exposed to front-end components. A protected resource would only be accessible if user will be authenticated. Unprotected resources could be viewed by users who are not authenticated.

- **Discovery service** — Service responsible for maintaining a registry of other service information in all system cluster. Each service will subscribe in Discovery service at the start-up. In subscribing service will provide its networking information. By doing this, all other services in the cluster environment will be able to locate other services by downloading a service registry and caching it locally. Discovery service will be used as-needed to retrieve the network address of other services that has dependency on needed domain processes.
- **Config server service** — Service responsible for centralizing external configurations needed for other services. This service will allow other services to retrieve their tailored configurations for the target environment.

Backing services are still considered as services, that solves a set of concerns that are purely operational and security-related. All backing services will run in Docker containers managed by Kubernetes orchestration.

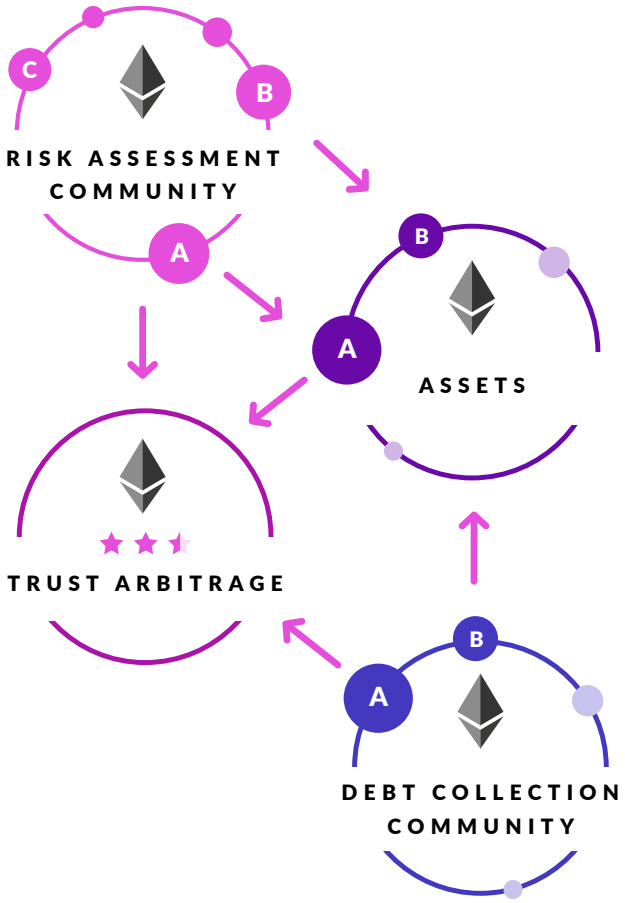
Backend Services

Business logic of the Debitum Network system almost entirely managed by backend services. Each of these services will be exposed as a seamless REST API which will run in Docker containers and managed by Kubernetes orchestration. All business domain processes will be managed by Debitum Network services:

- **Assets Service** — Service responsible for managing processes related with assets management through business flow between Borrowers, Investors, and Fiat Facilitators.
- **Risk assessment management service** — Service responsible for managing communication processes between risk assessment inquirer and risk assessor communities.
- **Debt collection service** — Service responsible for managing communication processes between debt collection requestors and debt collection communities.
- **User management service** — Service responsible for managing user profile states changes in all system.

Smart Contracts

Rather than centralizing ownership of communities' processes, interlinked Ethereum smart contracts will give possibility to distribute ownership of processes flow managed by various communities. Debitum Network smart contract standards will facilitate a settlement flows between the service provider communities, investors, fiat facilitators, and borrowers. To illustrate the intended functionality, we provide workflow scheme which reflects communication flow on blockchain between different ecosystem parties:



Community smart contracts

Processes flows of different system parties will be monitored and managed by communities. To enable community participation in all Debitum Network ecosystem, community administrators, must implement Debitum Network community smart contract standard and register through trust arbitrage of smart contracts. Community smart contact will have to implement “Community” standard interface:

```
contract Community {

    function approvedMember(address _member) constant returns (bool);

    function status(address _member) constant returns (string);

    function register(string _fullname, string _email, string _data) returns(bool);

    function removeMember(address _member) returns (bool);

    function approve(address _member) returns (bool);

    function ratingAddress(address _member) constant returns (address);

    event MemberRegistered(address _memberAddress, string _fullname, string _email, string _data);

    event MemberRemoved(address _memberAddress);

    event MemberApproved(address _memberAddress);

}
```

The description of the interface methods is provided below:

- **approvedMember** – returns true if user is a member of particular community;
- **status** – returns member status in community, which is managed by community administrators, i.e., registered, active, blocked;

- **register** – registration method for new community member;
- **removeMember** – method which can only be used by community administrators to remove a member from community;
- **approve** – method which can only be used by community administrators to approve member registration in community;
- **ratingAddress** – returns address of rating smart contract for a particular community member

Each community contract will be audited by trust arbitrage and if it passes it will be registered in Debitum Network system.

Rating smart contracts

Each community will have to implement rating functionality for their members, to provide objective member ratings for all members of the ecosystem. For users to check information and ratings of different communities they will be able to check it using communities smart contract by calling method ratingAddress. Community administrators will have to implement rating factory implementation which will construct rating smart contract for each community member. Rating smart contracts will have to implement interface standard:

```
contract Rating {
  function community() constant returns(address);
  function member() constant returns(address);
```

```
function fullname() constant returns(string);
function data() constant returns(string);
function email() constant returns(string);
function rating() constant returns(uint);
}
```

The description of interface method is provided below:

- **cummunity** – community to which user/member belongs;
- **member** – member, which rating smart contract represents;
- **fullname** – members full name;
- **data** – additional data about community member;
- **email** – community members email;
- **rating** – members rating, provided by community.

Service request management contracts

Debitum Network system users will be able to request different services (as risk assessment, debt collection, etc.), decide from which user to order service, to pay for provided services, and to publish rating for delivered results.

ServiceRequest smart contracts reflect agreements between service requestor (borrower or investor) and counterparties (community members). When service is provided / finalized for service requestor, particular smart contract sets status of finished service and initiates trust arbitrage smart contract for counterparty (community member) involved.

Each service request smart contract will have to implement interface standard:

```
contract ServiceRequest is ERC223Receiver {

    function tokenFallback(address _sender, address _origin, uint
_value, bytes _data) returns (bool ok);

    function proposePrice(uint _value) returns(bool);

    function assetId() constant returns(string);

    function deadline() constant returns(uint);

    function serviceCommunity() constant returns(address);

    function serviceProvider() constant returns(address);


    function status() constant returns(string);

}
```

The description of interface method is provided below:

- **tokenFallback** – service request contract will have to accept ERC223 standard tokens, for this purpose it must implement ERC223 receiver standard method;
- **proposePrice** – method letting propose price for community members;
- **assetId** – asset identifier for which service must be delivered;
- **deadline** – timestamp, till when service must be delivered;
- **serviceCommunity** – community smart contract address, which member is responsible for service delivery;
- **serviceProvider** – community member who was chosen as service provider;
- **status** – status of service accomplishment.

Token economy

To understand if Debitum token is sufficiently likely to gain value over time after the Crowdsale, it is important to apprehend token economy within Debitum Network ecosystem.

Most important details are described in this section; however, please refer also to Debitum Network Token Generation Event document, especially sections “Utility of Tokens” and “Token Economy” for more details.

Debitum token (DEB)

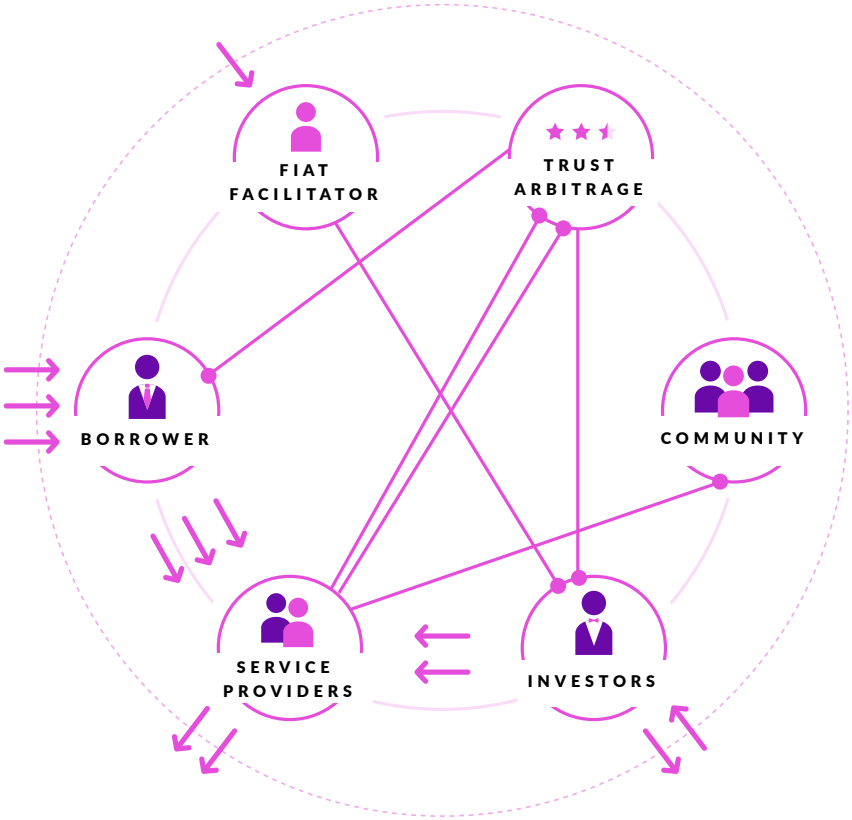
The goal is to create fast growing, trusted, self-governed and global business financing ecosystem, Debitum Network, that is built around its members and employs single ecosystem’s cryptocurrency – Debitum token to pay for all the services rendered. Only those having Debitum token will be able to purchase various services via Debitum Network.

There are two intrinsic values for Debitum token to exist:

- **‘Value Exchange’** as Debitum token is the only means of payments within the Debitum Network
- **‘Toll’** as all service providers should ‘freeze’ certain amount of Debitum tokens to guarantee execution of future services via Trust Arbitrage mechanism

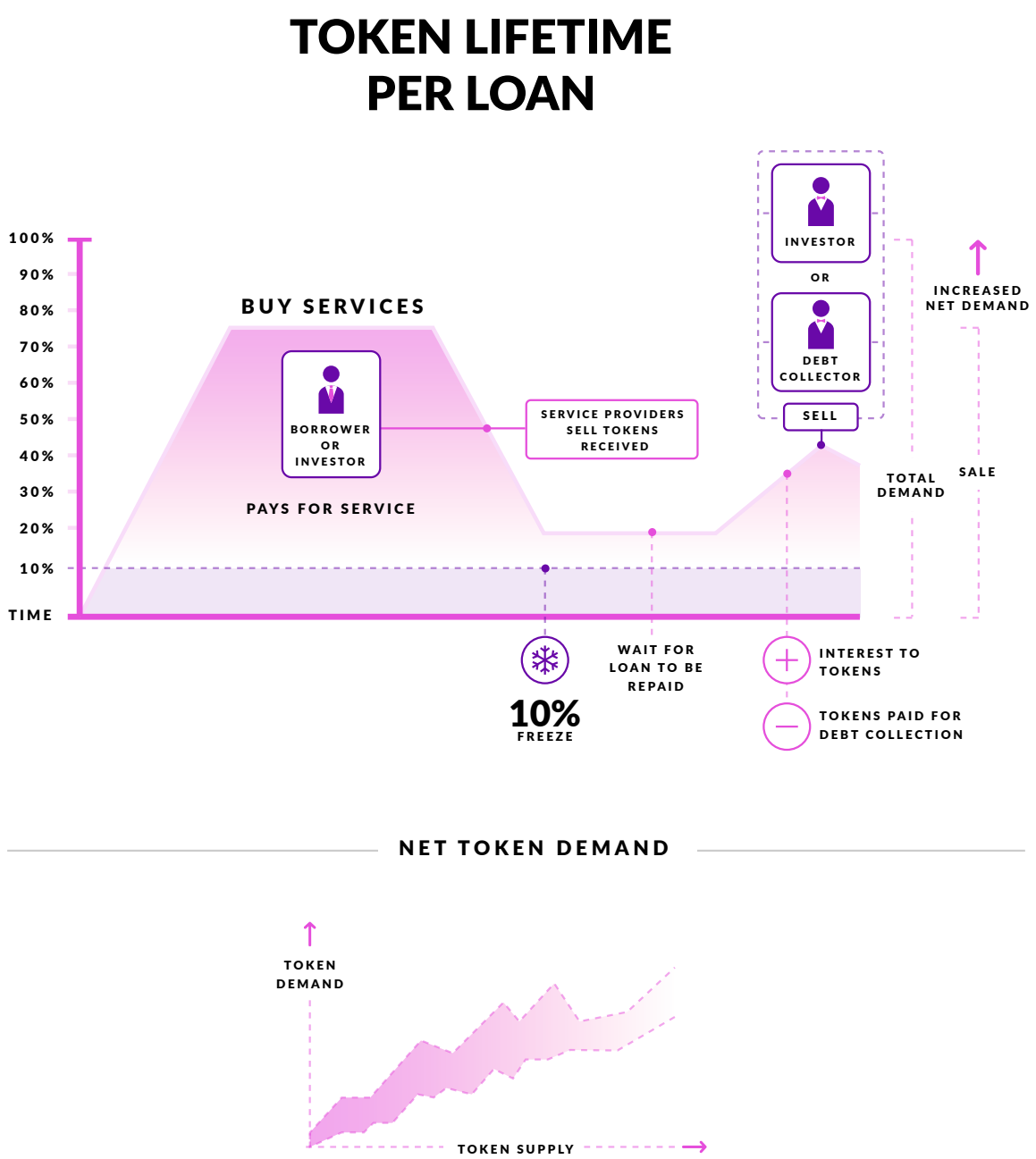
Below more detailed flow of Debitum tokens is depicted among various Debitum Network members. As with any money-like instrument, the flow should be in an

equilibrium – number of all inflows equals to number of all outflows. However, the time between inflow and outflow is the crucial factor directly impacting the scarcity of the token and its increased value as demand shifts upwards.



Based on experience most investors, especially the largest ones or institutional ones, are keen to stay in the ecosystem for a long term. Service providers seeing profitable business opportunity will also stay in the ecosystem for a long term. Borrowers are twofold: SMEs will stay for a short to medium term as they are expected to grow stronger and become 'bankable' and move to cheaper financing options; while organizational borrowers (operators) should be keen to stay for a long term. Thus we believe that as Debitum Network grows, more and more members will join that will need to use Debitum token simultaneously, hence we should see the demand in a point of time increase – increasing the value of the token. Moreover, the members of the ecosystem and Debitum Network broader community noticing the increase in the value of the token may opt to hold on to tokens rather than

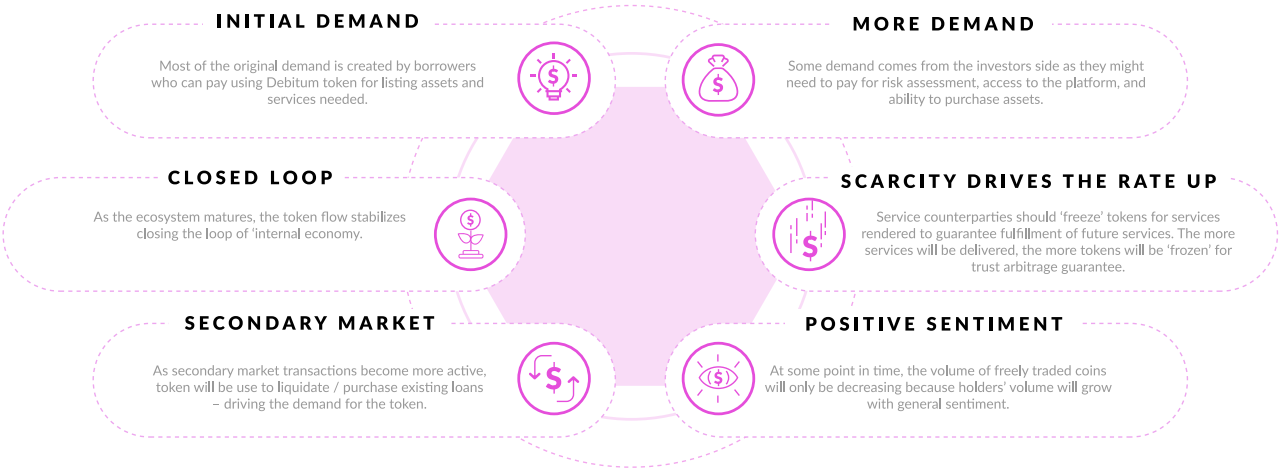
selling them just after receiving via business transaction. As this would make supply shift downwards, the value of the token should further increase.



Such design of token economy ensures Debitum token has intrinsic value. It indicates that Debitum token may increase in value due to the following Debitum token demand by:

- borrowers and financial asset originators to pay for services rendered of other counterparties within the process of receiving financing;
- investors to pay for certain Debitum services, i.e., advance on debt collection, additional insurance;
- all ecosystem participants to use Debitum token for Trust arbitrage smart contracts – where Debitum token directly allows individual counterparties and communities to be rated. This provides additional social paradigm to Debitum token and involves Debitum ecosystem members on a deeper level.
- Debitum token traders to buy and later sell the token to capitalize on the growth of crypto currency as the whole Debitum Network ecosystem growth.

Closed loop of aligned incentives



Action plan

Using the experience of our team and the advisors on doing and building international and finance operations, we have created the action plan to be followed to fully develop and deploy Debitum Network. We can define several stages needed to achieve our objective:

- **Stage 0 "Development":** during the initial stage, we will develop Debitum Network 1.0 version and deploy it. This version will be fully functional to serve initial markets.

- **Stage 1 "Preparation":** preparing market making and business development operations for a specific region / country. Action may include hiring country specific staff, preparing needed legal framework, adjusting procedures to local / regional specific and similar. During Stage 1 operations in a country are managed directly from the headquarters.

- **Stage 2 "Market entry":** starting actual market making and business development activities within a specific region / country. During this stage, initial counterparties / communities are on-boarded in a specific region / country. At the end of stage 2 a country is managed via regional management.

- **Stage 3 "Market penetration":** market penetration happens during a period of around 3 years for each country. After this period, there are enough counterparties and communities as well as local borrowers that the daily market making and business development operations are not needed and the ecosystem is self-sustainable in that specific country. At the end of stage 3, country operations are downsized, most of involvement happens from the regional level.

- ✔ **Stage 4 "Self-sustainability":** With time the ecosystem will have enough counterparties, communities, borrowers and investors to be self-sustainable. No further business development activities will be needed.

  Note: stage 0 and stage 4 are general stages for the whole ecosystem, while stages 1 to 3 are specific for each region and country within that region, for example, a country in Europe may go through stages 1 to 3 at a different timeline and pace than a country in South America.

Country selection analysis

Our team together with our Advisors who have great deal of experience in worldwide business has analysed data from the World Bank and has come up with a list of countries where Debitum Network should be launched. In total there are 50 countries:

Euro zone countries	✔ **Lithuania** ✔ **Latvia** ✔ **Estonia** ✔ **Czech Republic** ✔ **Slovakia** ✔ **Hungary** ✔ **Slovenia** ✔ **Greece**
Non-euro zone EU countries	✔ **Poland** ✔ **Romania** ✔ **Bulgaria**
Balkans	✔ **Croatia** ✔ **Serbia** ✔ **Bosnia and Herzegovina** ✔ **Turkey**
Other European countries	✔ **Russia** ✔ **Ukraine** ✔ **Belarus**

South America	✓ **Brazil** ✓ **Argentina** ✓ **Chile** ✓ **Uruguay** ✓ **Venezuela** ✓ **Bolivia** ✓ **Paraguay** ✓ **Peru** ✓ **Colombia** ✓ **Ecuador**
Central America	✓ **Mexico** ✓ **Honduras** ✓ **Jamaica** ✓ **Costa Rica** ✓ **Guatemala** ✓ **Dominican Republic** ✓ **Trinidad & Tobago**
Asia	✓ **Thailand** ✓ **South Korea** ✓ **China** ✓ **Kazakhstan** ✓ **Hong Kong** ✓ **Singapore** ✓ **Malaysia** ✓ **Brunei** ✓ **India**
Middle East	✓ **Saudi Arabi** ✓ **United Arab Emirates** ✓ **Iran** ✓ **Kuwait** ✓ **Qatar**
Africa	✓ **South Africa**

In the first two steps of Debitum Network geographical development we focus on home markets we know best:

Step 1	Step 2
8 Euro zone countries: ✓ **Czech Republic** ✓ **Estonia** ✓ **Greece** ✓ **Hungary** ✓ **Latvia** ✓ **Lithuania** ✓ **Slovakia** ✓ **Slovenia**	✓ **Poland** ✓ **Romania** ✓ **Bulgaria and the Balkan countries**

After initial success in home markets, we plan to launch first markets outside Europe within Step 3 in 2019Q4. We will focus on the markets with the largest credit gaps for SMEs and the largest credit gaps per SME, in a good balance of these two factors. In addition, we assessed each potential market for ease of doing business as well as risks for launching and running business in each specific market.

For example, we chose to exclude significant potential markets with estimated credit gap for SMEs above 25 billion USD but with a credit gap per SME below 3,000 USD, such as Nigeria, Indonesia and Vietnam. Average credit gap per SME in the markets covered by the current Debitum Network development plan is ca. 7,000 USD. In European markets where Debitum Network is destined to start, credit gap per SME is above 24,000 USD.

In addition, we excluded small markets with high credit gap per SME such as Montenegro, Armenia or Belize for their limited market potential. Thus the list of countries to be launched in upcoming steps are:

Step 3

- ✔ **Brazil**
- ✔ **Mexico** ✔ **Thailand**
- ✔ **South Korea** ✔ **China**
- ✔ **India**

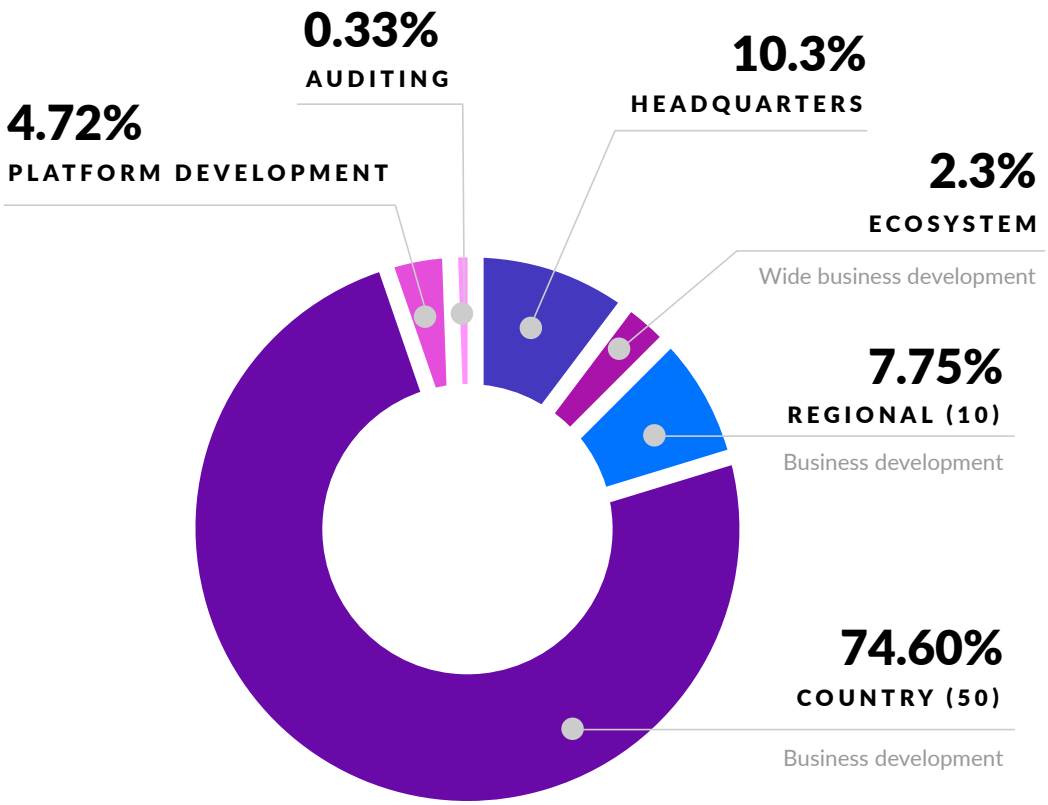
Step 4

- ✔ **Argentina** ✔ **Chile**
- ✔ **Saudi Arabia** ✔ **United Arab Emirates** ✔ **Iran** ✔ **Kuwait**
- ✔ **Qatar** ✔ **Honduras**
- ✔ **Jamaica** ✔ **Costa Rica**

- ✔ Guatemala ✔ Dominican Republic ✔ Kazakhstan
- ✔ Russia ✔ Ukraine ✔ Belarus
- ✔ South Africa ✔ Colombia
- ✔ Ecuador ✔ Peru ✔ Uruguay
- ✔ Trinidad & Tobago ✔ Venezuela
- ✔ Bolivia ✔ Paraguay
- ✔ Hong Kong ✔ Singapore
- ✔ Malaysia ✔ Brunei

Use of Proceeds

The exact usage of fund received will be adjusted by the total amount of funds received. The rule of thumb is that the more funds are received, the more countries may be 'launched' within a shorter timeline. For Debitum Network (or any other ecosystem, for that matter) to truly become a leading global player, one must move as fast as possible. Why? Because competition increases, various local 'copy-cats' are created, momentum might not be reached and similar. It also means that most of the funds shall be spent on market making and business development.



Each country's development (i.e., country business development, customer relations, initial market making) takes around 1.42% of the budget and totals to around 71%. Current calculations are made based on the hand picked list of 50 countries based on their total credit gap as indicated by the World Bank and individual economic analysis carried out by the team. A community based approach means that Debitum Network team should set up at least one community for each type of service providers and help growing it. Moreover, if there is a potential for an 'institutional borrower' community - it will make it easier to attract more borrowers / SMEs via 'institutional borrowers' to ensure steady demand of loans. If there are no such 'institutional borrowers', a particular country might require more direct marketing and sales activities.

Managing the development and deployment of Debitum Network or ecosystem management costs take around 11.3% of the total budget.

Each region's development (i.e., coordination of activities within the region, bridging the gap between global operations and country operations and similar) takes around 0,67% of the budget and totals to around 6.68%. Current calculations are based on splitting all hand-picked 50 countries into 'manageable' regions based on market sizes, geographic proximity and cultural similarities of the countries.

Ecosystem-wide business development (i.e., attracting global investors and ensuring customer support) takes around 5.9% of the budget.

Debitum Network ecosystem technological development takes around 4.8%. We will use a lower cost nearshore country for developing Debitum Network solution. This budget allows to have an IT team of around 12 people that would develop initial solution as well as ensure further development and country specific adaptations or integrations, if needed.

Auditing of financial transactions as well as Debitum Network IT solution take around 0.32% of the budget. We want to make sure that token holders are assured that Debitum Network team spends funds in designated way and that the created technological solution is secure and properly working. On top of paid auditing, we are planning to use community testing and feedback to ensure the highest possible quality to our deliverables.

Alternative development plans based on funds raised

In addition to the best scenario when the 'hard cap' is collected, we have developed approach of how to act if less funds are raised. That approach is based on costs needed for each step of geographic development of Debitum Network. Hence allowing to split total costs in steps:

Fund required		Markets launched
Eur 9 300 000	1	8 euro - zone countries
Eur 19 000 000	2	+7 CEE & Balkan countries
Eur 31 500 000	3	+6 key market regions
Eur 67 600 000	4	+29 markets worldwide

Debitum Network crowdsale is designed in a way that the 'soft cap' reached would allow to cover initial two steps. This would in a longer period of time allow to break even and to further develop the ecosystem from revenues generated.

However, if crowdsale members trust Debitum Network team and experience and raise more funds - it will be easier, faster and more efficient to develop steps three or more based on a single crowdsale. Moreover, if there will be an excess of funds for the very beginning, we will use them to ensure better market making and to fill 'empty room' problem from investors' side. In such case funds used for market making will decrease as more funds will be needed to cover costs of business development in more and more regions and countries.

Self-sustainability

It is important for initial and later token holders to know that Debitum Network can be self-sustainable in the long run and does not require additional funding to run. Funding is needed to finalize the technology solution, set up operations and expand in many markets around the world to truly create a global ecosystem.

Our business plan calculations show break even time for each step of the ecosystem:

Step 1	Step 2	Step 3	Step 4
in two and a half years from the project beginning	in three years from the project beginning	in three and a half years from the project beginning	in five years from the project beginning

Potential business challenges

There are several potential business challenges that may alter the time needed for a particular market to become self-sustainable:

- ✔ Need for Education about Alternative Financing: it might be that a particular market players, i.e., small businesses, have not heard of any other financing opportunity than traditional bank financing. In that case it will take more time to initially raise awareness of the whole alternative finance industry and services

available. Only after the initial awareness is raised, one may successfully start offering alternative financing services to small businesses.

- Crypto awareness: many business organizations do not have any experience with crypto or tokens. Hence it might take time and extra effort to show how such tokens are to be purchased / sold, how to use tokens and underlying infrastructure, like wallet or exchange. To successfully implement Debitum Network we should raise the general awareness of crypto and teach local organizations how to use it. At the same time we need to put more user experience effort into the solution to make it easier understandable.

Debitum Network Solution Summary

Project purpose

Facilitation of alternative financing forms through a distributed cross-border platform for businesses and individuals.

The pain

The cost of provision of trust between lenders and borrowers is too high. Businesses struggle for reasonably accessible financing due to the lack of effective international marketplaces and transparent pledge security registries.

Pain killer

Decentralized, community and trust based ecosystem that connects borrowers, investors and service providers in an efficient way. In long run design of Debitum Network allows it to become self-sustainable. Debitum tokens will be used within Debitum Network, while loan principal and interest payments will be transferred using fiat.

Market timing

We will advance over the maximally wide frontline but will work in each place for a certain period of time to ensure self-sustainability. A partial use of incumbent practices allows the Debitum Network community to start making money right away without strong dependence on the lagging broader adoption of crypto.

System

Debitum Network is a distributed business-to-business ecosystem. The core technical offering is Ethereum-based application. Debitum Network features forthcoming APIs to enable middleware developers to easily link other networks to Debitum Network.

Business model

There are many places for different actors to make money on the ecosystem, communities' leaders can earn from growing and looking after the community, investors can earn interest on loans provided, SMEs can gain access to loans needed for growth. Debitum Network will ensure trust arbitrage smart contract and will be able to participate in the whole ecosystem.

Competition

Debitum Network competes with pseudo peer-to-peer systems with centralized management, with traditional vertically integrated institutions such as banks and credit unions as well as with some blockchain based solutions. Most important advantages of Debitum Network are lower costs and entry barriers. The main drawback is the unusual nature of the framework which may limit the interest from businesses at the initial stage.

Future Prospects

Today's industry "whales" represent an existential threat to themselves. They monopolize entire sectors and raise prices until the people have to fight back in antitrust courts. They concentrate so much sensitive data in one place that if something goes really wrong the size of the problem will be way beyond the scope of any single company. And it feels more like 'when' than 'if'. They abuse crowdsourcing by seizing the sharing economy trend, creating an illusion of "democratization" but in reality, restricting access, dictating rules, lowering margins for everybody else, and generating the endless stream of all sorts of conflicts. The latest development is that they are attempting to build permissioned distributed ledgers. That's a cargo cult and a serious security trap. Those systems, raised in sterile environments, are going to be very vulnerable in the environment where hackers are trained on constantly attacking open platforms which keep developing their immune systems being open to the wild. Big corporations are trying to build an "intranet" again, but this time, when they fail, the wild versions of things are soon going to be fully functionable to entice their clientele.

An extreme centralization of things that we see today is temporary and nothing new. History develops in an upward spiral where governance centralization fluctuates between periods of weakness and strength. As a result, many tech stacks have a sandwich structure—there are layers created in periods of relative decentralization or chaos and layers created in periods of relative centralization or autocracy. More new rounds of both centralization and decentralization are ahead. And it is evident whose turn it is now. Decentralization is a vague term meaning anything from "not all the processing of the transactions is done in the same place" to "not one single entity has control over all the processing". In case of Debitum Network, from the very beginning, we will have 'architectural' decentralization (many physical computers hosting the system) and 'political' decentralization (many individuals or organizations ultimately control the computers that the system is made up of). Once enough counterparties across many regions join the system, it will achieve

the final stage of decentralization, a 'logical' one—the interface and data structures will become an amorphous swarm.

At later stages, the crypto innovation and decentralization might be accompanied by shifts in the entire fabrics of economics. Economics is essentially how people respond to incentives. Some big changes may take place in the not-so-distant future, so people's motivations will substantially mutate. The dominant business model for physical goods may follow the software business fashion and play the 'subscription shuffle' game so more people will not own products so much anymore, in a traditional sense, but will "subscribe" to stuff and maybe even own the manufacturing in a collective way. Unlike in software, in hardware it might actually make a lot of sense. For example, Philips is setting up a business model where they sell light, not lamps. A person pays for light, like an annual fee. The same is broadly discussed about cars when they are self-driving. The same would also be good for shoes, jeans and many other commodity-like things. Thus, consumers get quality products with constant upgrades and can precisely plan their expenses; businesses cut costs and invest in strategic improvements, not into a pointless new model rush; society can rely on vertically integrated responsible actors to channel energy, waste, and other pressure on the environment. In line with the above "saving economy", a potential switch from inflationary monetary model to deflationary one may become another reason for economics to change. Now people are eager to spend dollars but prefer to hold bitcoins. While we know for sure that the inflationary model of consumerism can generate economic growth, albeit with constant threat of crises, in case of an economy with dominant bitcoin-like money, we don't know whether people will be that motivated to set alarm clocks and go to work much.

Why does Debitum Network has better than average chances to survive such [political] tectonics? First of all, it can adapt to a needed size and seamlessly migrate its focus to more lucrative regions where there's more demand. Secondly, it can comparatively easily incorporate cryptocurrencies to carry principal capital and new types of collateral including those new smart-contract-based types. And most importantly, Debitum Network will accumulate efforts invested into it over time

in the form of structural improvements of distributed software not as tangible and intangible assets exposed to political risk. Should a major crisis occur, it can always wait it out in a temporary hibernation mode.

About the team

The Debitum Network team comes from the innovative technology company INNTEC and DEBIFO, a successful traditional invoice financing business in Europe.

DEBIFO

Established in 2015, Debifo is now one of the leading alternative financing platforms for SMEs. In 2016, it was awarded Financial Service of the Year.

€ 19M

2 year asset turnover

€ 3M

Current asset portfolio

&

INNTEC

One of the most innovative IT companies in Northern Europe, providing high quality IT services to both the public and private sectors.

151K

total project hours

6.5 years

Average experience per specialist

Tested by the Market

DEBIFO is a recognized brand in the alternative financing sector. Since the launch in mid-2015, the company has financed more than 3,700 individual invoices to small and medium businesses and traded over 20M Eur of funded invoices.

Verified by Institutional Investors

DEBIFO has raised 3M Eur of capital including 1M from MUNDUS Asset Management Fund. Three funds have conducted successful due diligence of DEBIFO.

Awarded by the Industry Consortium

DEBIFO has received acknowledgement as “The Best Financial service of 2016” provided by the Lithuanian Business Confederation, the organization that unites companies which account for around one quarter of Lithuania’s GDP.

Acknowledged by Professional Media

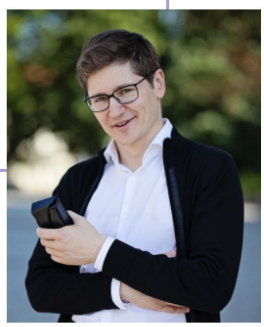
In 2016, DEBIFO has been recognized by Forbes as a “FinTech company to follow”.

The Team

The team behind the Debitum Network who is working on making the project happen:

Mārtiņš Liberts

CO-FOUNDER / VISIONARY



Donatas Juodelis

CO-FOUNDER / PARTNER RELATIONS

Justas Šaltinis

CO-FOUNDER / FINANCING OPERATIONS

Mažvydas Mackevičius

TECHNOLOGY LEAD / BLOCKCHAIN TECHNOLOGY EXPERT

Märt Lume

LEAD PRODUCT MANAGER

Monika Varkalytė

CHIEF MARKETING OFFICER

Reginaldas Raila

SOFTWARE DEVELOPER

Andrius Bilinevičius

SOFTWARE DEVELOPER

Tomas Babelis

SOFTWARE DEVELOPER

Paulius Gasėnas

SOFTWARE DEVELOPER

Vytis Papečkys

BUSINESS DEVELOPMENT MANAGER

Eglė Sereičikienė

OPERATIONS

Debitum Network team constitutes of inspired finance and technology professionals who already have a successful track record of creating working alternative financing ecosystem in Europe.

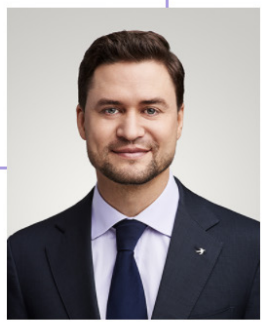
We have adopted the solution based on feedback, comments and suggestions provided by our advisor team and community. We believe that Debitum Network due to its design and architecture (both business and technical) can change the SME financing worldwide!

The Advisors

The team of advisors who are supporting the team on various questions, mostly on finance and international business development:

Eyal Hertzog

CO-FOUNDER OF BANCOR / CRYPTO ADVISOR



Tadas Langaitis

INVESTOR RELATIONS ADVISOR

Honourable Richard Evans

INVESTOR RELATIONS ADVISOR

Andrius Bogdanovičius

RISK ASSESSMENT ADVISOR

Andrius Nikitinas

INTERNATIONAL BUSINESS DEVELOPMENT ADVISOR

Michael Ricks

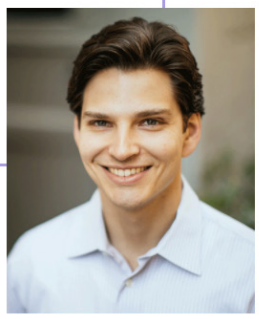
FINANCIAL SERVICES ADVISOR

Peter Howitt

LEGAL ADVISOR

James Downton

MARKETING ADVISOR



Lex Sokolin

FINTECH ADVISOR

The Supporters

The supporters who are supporting the cause behind Debitum Network or are waiting for the launch of Debitum Network to join the ecosystem:

Visit https://debitum.network to subscribe for future updates; to comment and ask questions.

APPENDIX A - credit gap by country

Detailed data for countries that have been recognized by the World Bank as having a credit gap:

Region	Country	Credit Gap, $D	SMEs, number	Credit gap / SME	Unserved + Underserved, % of SMEs
East Asia	China	337.886	103.547.974	3.263	49%
South America	Brazil	237.429	16.030.344	14.811	53%
Middle East	Saudi Arabia	237.392	1.842.991	128.808	49%
West Asia	India	140.282	49.634.092	2.826	47%
East Asia	South Korea	114.071	4.643.936	24.563	49%
Europe	Turkey	72.826	4.120.213	17.675	50%
South America	Argentina	66.630	2.133.094	31.236	49%
Southeast Asia	Thailand	65.864	11.378.577	5.788	49%
Central America & Caribbean	Mexico	63.578	11.204.405	5.674	48%
Europe	Greece	57.038	1.065.737	53.520	49%
Europe	Russia	49.827	3.605.142	13.821	52%
South America	Venezuela	45.070	3.274.676	13.763	48%

Region	Country	Credit Gap, $D	SMEs, number	Credit gap / SME	Unserved + Underserved, % of SMEs
South America	Chile	39.591	1.870.040	21.171	53%
Europe	Poland	38.085	2.137.939	17.814	52%
Europe	Czech Republic	37.419	1.099.857	34.022	55%
West Asia	Iran	37.038	4.475.981	8.275	50%
South America	Colombia	35.667	4.289.790	8.314	63%
Southeast Asia	Hong Kong	33.434	791.294	42.252	49%
South America	Ecuador	28.197	1.773.810	15.896	52%
West Africa	Nigeria	27.648	9.480.996	2.916	52%
Southeast Asia	Indonesia	27.538	41.115.822	670	53%
Southeast Asia	Vietnam	24.672	9.245.088	2.669	49%
Southeast Asia	Singapore	23.816	497.975	47.826	49%
East Asia	North Korea	22.310	2.822.944	7.903	49%
Central America & Caribbean	Cuba	21.969	1.038.225	21.160	49%
Southeast Asia	Malaysia	19.377	2.625.575	7.380	48%

Region	Country	Credit Gap, $D	SMEs, number	Credit gap / SME	Unserved + Underserved, % of SMEs
South America	Peru	17.516	2.371.293	7.387	57%
North Africa	Algeria	16.385	1.712.733	9.567	52%
Middle East	United Arab Emirates	16.086	257.908	62.371	49%
Europe	Hungary	15.254	761.241	20.038	48%
Middle East	Kuwait	14.061	161.826	86.890	49%
South Africa	South Africa	13.428	2.213.146	6.067	47%
West Asia	Pakistan	12.073	9.079.836	1.330	47%
Europe	Romania	11.784	1.111.909	10.598	50%
Southeast Asia	Philippines	11.707	3.893.667	3.007	49%
North Africa	Sudan	11.355	1.951.120	5.820	49%
Central Asia	Kazakhstan	11.138	750.414	14.842	50%
South East Asia	Burma	11.055	4.750.360	2.327	49%
North Africa	Egypt	10.939	6.424.010	1.703	49%
Central Africa	Congo Dem. Rep.	10.581	3.000.683	3.526	62%
West Asia	Bangladesh	10.409	10.627.090	979	50%
Central Africa	Angola	9.369	844.992	11.088	66%
Europe	Slovenia	8.630	148.288	58.198	52%

Region	Country	Credit Gap, $D	SMEs, number	Credit gap / SME	Unserved + Underserved, % of SMEs
Southeast Asia	Brunei	8.551	63.127	135.457	49%
North Africa	Libya	8.407	399.443	21.047	49%
South America	Bolivia	8.196	1.171.777	6.995	51%
West Africa	Niger	7.988	676.954	11.800	51%
Middle East	Qatar	7.826	59.078	132.469	49%
Middle East	Syria	7.807	824.704	9.466	49%
North Africa	Morocco	7.539	2.130.833	3.538	50%
Middle East	Iraq	7.421	1.900.575	3.905	49%
Central America & Caribbean	Honduras	7.143	743.726	9.604	54%
Central Asia	Uzbekistan	6.880	965.156	7.128	50%
South America	Paraguay	6.353	1.139.366	5.576	50%
East Africa	Kenya	6.298	2.303.635	2.734	50%
West Africa	Cote d'Ivoire	5.997	1.141.684	5.253	80%
Europe	Croatia	5.958	278.167	21.419	50%
South America	Uruguay	5.583	313.023	17.836	50%
Central America & Caribbean	Guatemala	5.564	1.059.789	5.250	37%

Region	Country	Credit Gap, $D	SMEs, number	Credit gap / SME	Unserved + Underserved, % of SMEs
East Africa	Ethiopia	5.434	2.319.072	2.343	52%
Central America & Caribbean	Jamaica	5.322	478.778	11.116	49%
Europe	Bosnia and Herzegovina	4.989	242.261	20.593	49%
West Africa	Ghana	4.822	1.479.310	3.260	51%
Europe	Ukraine	4.799	567.838	8.451	55%
Central America & Caribbean	Costa Rica	4.327	307.505	14.071	51%
Europe	Belarus	4.191	277.535	15.101	53%
West Africa	Burkina-Faso	4.136	864.128	4.786	83%
Europe	Lithuania	4.111	210.916	19.491	49%
Europe	Serbia	4.099	289.814	14.144	56%
Central America & Caribbean	Haiti	3.853	899.177	4.285	49%
Central America & Caribbean	Dominican Republic	3.778	518.412	7.288	49%
Europe	Slovakia	3.533	174.296	20.270	51%
West Asia	Sri Lanka	3.532	1.015.354	3.479	50%
South America	Trinidad & Tobago	3.439	104.103	33.035	49%

Region	Country	Credit Gap, $D	SMEs, number	Credit gap / SME	Unserved + Underserved, % of SMEs
East Africa	Madagascar	3.401	893.003	3.808	70%
Europe	Bulgaria	3.214	515.991	6.229	52%
Central America & Caribbean	El Salvador	2.508	635.021	3.949	51%
South Africa	Tanzania	2.482	4.256.133	583	51%
Europe	Latvia	2.475	120.071	20.613	51%
Central Africa	Chad	2.474	71.049	34.821	51%
Southeast Asia	Cambodia	2.462	1.203.568	2.046	49%
South Africa	Zambia	2.449	568.272	4.310	49%
Asia	Afghanistan	2.434	1.312.589	1.854	50%
Central America & Caribbean	Nicaragua	2.410	616.359	3.910	50%
West Africa	Senegal	2.305	57.133	40.344	51%
Europe	Armenia	2.098	196.388	10.683	61%
Central Africa	Congo, Rep	2.056	172.839	11.895	53%
West Africa	Benin	2.049	676.775	3.028	55%
East Africa	Somalia	2.010	560.509	3.586	49%
Europe	Azerbaijan	1.971	367.247	5.367	51%
North Africa	Tunisia	1.858	485.188	3.829	49%

Region	Country	Credit Gap, $D	SMEs, number	Credit gap / SME	Unserved + Underserved, % of SMEs
Australia & Oceania	Papua New Guinea	1.815	619.192	2.931	49%
Central Africa	Gabon	1.812	67.215	26.958	49%
East Africa	Zimbabwe	1.763	227.725	7.742	48%
Middle East	Jordan	1.648	408.537	4.034	46%
Asia	Turkmenistan	1.647	188.930	8.718	49%
Middle East	Oman	1.459	92.363	15.796	49%
Central America & Caribbean	Panama	1.435	262.944	5.457	49%
West Africa	Mali	1.388	665.193	2.087	74%
Middle East	Israel	1.347	257.705	5.227	49%
Middle East	Yemen	1.265	1.390.861	910	49%
Asia	Nepal	1.204	1.305.839	922	56%
Europe	Estonia	1.197	75.637	15.826	44%
Central Africa	Equatorial Guinea	1.185	28.807	41.136	48%
West Africa	Togo	1.157	302.469	3.825	52%
South Africa	Botswana	1.146	99.352	11.535	39%
Central America & Caribbean	Belize	1.141	36.700	31.090	49%

Region	Country	Credit Gap, $D	SMEs, number	Credit gap / SME	Unserved + Underserved, % of SMEs
Central America & Caribbean	Bahamas	1.117	27.810	40.165	49%
South Africa	Malawi	1.085	1.353.253	802	49%
West Africa	Mauritania	1.072	148.834	7.203	52%
Middle East	Lebanon	1.015	168.883	6.010	49%
Europe	Albania	1.007	134.830	7.469	51%
Europe	Montenegro	938	36.116	25.972	53%
West Africa	Guinea	913	629.779	1.450	50%
Europe	Georgia	876	133.802	6.547	49%
Europe	Macedonia	819	87.672	9.342	56%
East Africa	Uganda	752	1.194.387	630	48%
Southeast Asia	Laos	730	522.317	1.398	16%
Central Africa	Central African Republic	708	127.226	5.565	48%
South Africa	Namibia	666	100.823	6.606	46%
East Africa	Eritrea	643	230.452	2.790	45%
Central Africa	Burundi	613	374.485	1.637	50%
West Africa	Liberia	600	172.839	3.471	49%
Europe	Moldova	580	64.700	8.964	54%

Region	Country	Credit Gap, $D	SMEs, number	Credit gap / SME	Unserved + Underserved, % of SMEs
South America	Suriname	563	46.349	12.147	49%
Central Africa	Cameroon	536	778.731	688	68%
Central America & Caribbean	Barbados	535	20.002	26.747	49%
East Africa	Mauritius	533	131.478	4.054	49%
Australia & Oceania	Fiji	471	77.399	6.085	48%
South America	Guyana	425	74.257	5.723	49%
West Africa	Sierra Leone	386	259.259	1.489	51%
South Africa	Lesotho	363	96.022	3.780	48%
Central Africa	Rwanda	323	230.774	1.400	50%
Asia	Kyrgyz Republic	286	167.331	1.709	50%
Asia	Mongolia	277	251.547	1.101	51%
South Africa	Swaziland	265	57.613	4.600	48%
Asia	Tajikistan	259	298.047	869	52%
Central America & Caribbean	Saint Lucia	258	18.540	13.916	49%
East Africa	Djibouti	253	51.541	4.909	49%
South Africa	Mozambique	246	536.212	459	48%

Region	Country	Credit Gap, $D	SMEs, number	Credit gap / SME	Unserved + Underserved, % of SMEs
Southeast Asia	Timor-Leste	133	93.749	1.419	49%
Australia & Oceania	Solomon Islands	130	48.374	2.687	49%
East Africa	Comoros	129	28.807	4.478	48%
Central America & Caribbean	Grenada	127	9.270	13.700	49%
Australia & Oceania	Samoa	114	16.865	6.760	49%
West Africa	Guinea-Bissau	112	72.016	1.555	14%
Central America & Caribbean	Saint Vincent and the Grenadines	107	927	115.426	49%
West Africa	Cape Verde	96	24.005	3.999	52%
Asia	Bhutan	93	34.936	2.662	50%
Asia	Maldives	92	14.972	6.145	50%
West Africa	Gambia	92	76.817	1.198	50%
West Africa	Sao Tome and Principe	47	9.602	4.895	48%
Australia & Oceania	Tonga	43	9.675	4.444	51%
Australia & Oceania	Micronesia	32	9.675	3.307	50%

Source: https://www.smefinanceforum.org/data-sites/ifc-enterprise-finance-gap