bitboost
E-COMMERCE REDEFINED

THE
BLOCK
WHITE PAPER

FULLY DECENTRALISED MARKETPLACE POWERED BY THE ETHEREUM BLOCKCHAIN

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1. SUMMARY

The blockchain software company BitBoost was formed with the explicit purpose of developing a decentralised marketplace. BitBoost is launching its application «The Block», which is a decentralized e-commerce platform based on the Ethereum blockchain's smart contracts protocol. The Block recreates the global infrastructure of major e-commerce corporations, such as eBay and Amazon, entirely in code.

Due to its decentralised nature, The Block offers significant advantages over traditional, centralised e-commerce platforms and opens up the rapidly growing marketplace to new business and user segments. It allows anyone to list items for sale, to set up a store, or to make a purchase. At the same time, The Block contains powerful tools to facilitate both the user experience and to protect customers and merchants. These tools include instant search, escrow, and customisable filters to screen items illegal in certain jurisdictions. A reputation system is under development. Centralization has been removed from the trading process – allowing for radically lower fees, a high degree of privacy, and zero censorship.

Users can download The Block as a standalone app that accesses the Ethereum network via either the developers' nodes or a local copy of the blockchain. All payments are made in cryptocurrency, principally in ether (ETH), which can be held in an integrated wallet for convenience or, if preferred, in an external wallet. Ether is a popular and highly liquid cryptocurrency that offers the functionality required for fast customer-to-customer transactions on The Block. Payment processing services including ShapeShift – and later also fiat-to-crypto services – will be used to ensure user-friendliness.

The Block is a fully decentralised e-commerce marketplace where everyone can buy and sell goods, and benefit from the significant advantages of the platform's design and technical properties: privacy, freedom, and much lower costs.

2. BITBOOST

2.1 INTRODUCTION TO BITBOOST

BitBoost has the aspiration to enable truly free trade on a global scale. The company envisions a global economy in which all participants can conduct business with each other peacefully, privately, and efficiently, regardless of their location and without interference, censorship, or prohibitively high fees. The Ethereum blockchain enables the realisation of this vision. BitBoost is made up of a team of highly committed individuals with different backgrounds and careers, all of which have led them to blockchain technology. Some team members are developers who have worked with JavaScript, Angular, and other languages. Others have a background in trading on the diverse cryptocurrency markets.

The BitBoost team first met within the community of the blockchain platform NXT, and built its first marketplace – NXT FreeMarket, a downloadable, functional shipping app – on the NXT blockchain. However, the limitations of the NXT blockchain for a marketplace quickly became apparent and the user base was limited from the outset. As a result, the team decided to move to the Ethereum blockchain.

Due to its advanced technical features the Ethereum platform is ideally suited for The Block application. In contrast to the NXT blockchain, on Ethereum every item is represented by a smart contract that can be updated directly and queried for its current status. Escrow is also handled effectively by using smart contracts – a far superior solution. At the same time, BitBoost recognises the non-technical challenges of a decentralised marketplace to user adoption, such as the requirement to localise The Block in many different languages, and to tailor and adapt it for the needs of widely varying legal jurisdictions.

All team members believe in the founding ideals of Bitcoin and blockchain technology and, therefore, strive to redefine e-commerce as a free, efficient, and above all private endeavour in the globally connected 21st century.

2.2 BITBOOST'S CONTRIBUTION TO E-COMMERCE 2.0

Enabling e-commerce platforms to thrive has been one of the main successes of the internet, by bringing a broader array of goods at cheaper prices to a much larger number of potential consumers. In addition, ease of use and the consumers' ability to share almost instant feedback on the goods purchased are significant advantages.

But certain fundamental aspects of today's e-commerce market should be improved. They are rooted in the nature of our monetary system and the need for centralised parties to handle the payment transactions. By essentially recreating the infrastructure of an e-commerce store using smart contracts, The Block intends to raise e-commerce to a higher level by eliminating these disadvantages and making the e-commerce market more efficient.

Centralization of the money supply

For the overwhelming majority of history, money has been a physical commodity of one sort or another that was handled in person and used in «peer-to-peer» transactions. Money, as we formally recognise it today, probably arose around 7,000 years ago in the Sumerian temple complexes. At the beginning, money was entirely decentralised; the parties to a transaction would weigh out the (typically) silver pieces at the point of transaction, testing the metal with a touchstone to establish purity. The inconvenience of this approach was mitigated by its complete independence from outside control and interference. Centralisation of the money supply arose in the 6th century BC, with the development of the first coinage. At that point, money came under the control of the state and has remained so ever since. Further centralisation occurred through the rise of the banking system, particularly during the Renaissance period under the Medici family. Nevertheless, money was still backed by a physical commodity.

Two factors have fundamentally changed the nature of money over the last century. The first is that it became severed from any tangible commodity with the introduction of «fiat» money in the aftermath of the Great Depression. While this enabled national economies to adjust and recover more quickly, it placed ultimate control over the creation of money in the hands of governments and central banks. The second factor is that our payment system has moved progressively into the electronic arena over the past 50 years. Today, the vast majority of payments are made online.

Control over the payments system

As money moved online, it could no longer remain a peer-to-peer system. Because data are easy to copy, it was impossible to ensure that electronic money was only spent once. Trusted authorities were required to keep accounts and make sure that transactions were not fraudulent. This became one of the roles of banks, credit card companies, and payment processors such as PayPal in the financial system. Any online payments required centralisation for accounting purposes, which also entailed trust.

Unfortunately, this trust can be and is routinely abused, whether as a matter of policy or incidentally. Payment processors act as an intermediary between the parties of a transaction and can block or reverse a transfer. This has benefits for customers who have experienced identity theft, but there are implications for merchants, who can be hit with chargebacks. For example, eBay routinely sides with customers in such disputes, unfairly impacting sellers.

Risk of inappropriate surveillance

The fact that third parties are required for online purchases opens the door for surveillance, since there is always someone who holds financial information that can be leveraged in one way or another. This is the case for both customers and merchants, both of whom require payment processing facilities such as PayPal or credit card companies.

Additionally, the platform used for the sale itself (e.g. eBay or Amazon) will collect further information and will likely host the products and stores of thousands of merchants. The involvement of these third parties has eroded the privacy we enjoyed in the case of simple cash transactions. Our online footprint is tracked, analysed, and monetised at every turn, with personal data sold to the highest bidder. Even when we consent to this (tacitly or explicitly), and even when it is used for legitimate purposes, these data are attractive for a wide range of purposes and are frequently stolen, leaked, or sold to malicious entities.

BitBoost improves the e-commerce market

BitBoost intends to address these deficiencies with the creation of a decentralised e-commerce platform built on Ethereum. The Block will implement smart contracts to provide an e-commerce infrastructure and use cryptocurrency for customer purchases and merchant listing fees. By using smart contracts for the creation of the online store and Ethereum's native currency, ether (ETH), as The Block's own currency, the project eliminates the need for third parties that have previously been essential to hosting and payment processing.

One important consequence of its decentralised design is that The Block will further enhance user privacy. Not only can cryptocurrency payments offer a strong element of privacy, but there will be no third parties collecting user data. The Block itself does not need any personal data, working in a permissionless manner and performing no monitoring. A user needs only The Block application and a small amount of ETH to get started and operate within the Ethereum blockchain.
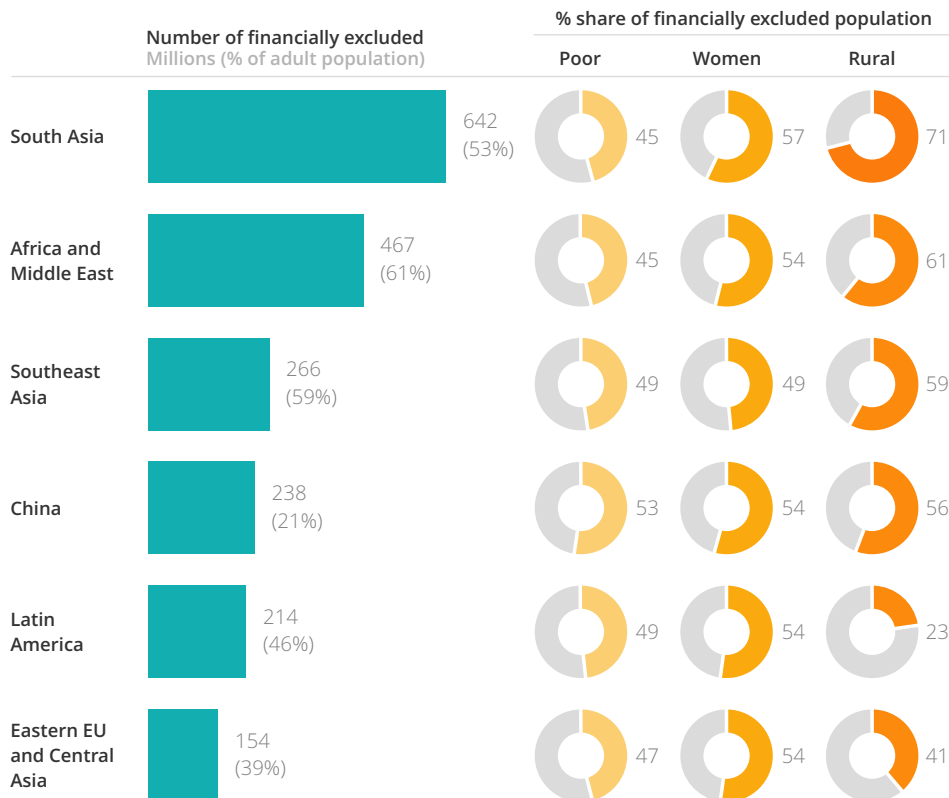
E-commerce giants like Amazon and eBay depend upon extensive server farms to host their websites and to deal with traffic. Although this approach offers efficiencies when compared to the traditional use of physical stores, it still has substantial costs attached to it. By using Ethereum, The Block replaces these enormous and expensive data centres with code. The overhead of running a global e-commerce store is eliminated – or, more accurately, distributed among the Ethereum miners who are paid for maintaining the network. BitBoost essentially recreates the infrastructure of an e-commerce store using smart contracts and is therefore in a position to pass on the savings to The Block's users in the form of extremely low fees.

Existing e-commerce models work well in countries that have a good digital infrastructure and monetary stability. But what about the two billion people who live in countries which do not provide such infrastructure, where there is no monetary stability, or who are otherwise excluded from access to a stable environment for financial transactions? In other words: what about the «un-banked» people of the world?

Exhibit 1: The financially excluded
Financially excluded population in emerging economies

	Number of financially excluded Millions (% of adult population)	% share of financially excluded population		
		Poor	Women	Rural
South Asia	642 (53%)	45	57	71
Africa and Middle East	467 (61%)	45	54	61
Southeast Asia	266 (59%)	49	49	59
China	238 (21%)	53	54	56
Latin America	214 (46%)	49	54	23
Eastern EU and Central Asia	154 (39%)	47	54	41

How can the e-commerce industry navigate around these challenges and gain access to this untapped potential? What are the available technologies that can lead to financial inclusion, change trading habits, and create new exchange dynamics? We, at BitBoost, believe blockchain technology and cryptocurrencies may achieve all of that. While multiple options exist in the cryptocurrencies market space, The Block simplifies the overall experience from the points of view of both the buyer and seller:

· First, its clean and intuitive interface will be familiar to anymore who shops online. The presence of a managed escrow system and the integration of The Block's Ethereum wallet with ShapeShift are just two of the features that will facilitate wide adoption.

· The Block has placed a lot of emphasis on privacy, allowing transactions to take place in a completely automated and secure way.

· As a decentralised platform with all listings held on the blockchain, The Block never goes offline and there is no single point of failure.

Third-party application integration will be added in time, with the goal of creating a full-fledged ecosystem which prepares a new generation of users for e-commerce 2.0.

3. THE BLOCK

3.1 OVERVIEW

The Block is a completely new kind of blockchain-based e-commerce application with the advantages of a decentralised architecture. It must both compete with popular online shopping sites and prevail against existing monetary and payment systems. While technical features are key to maintain its advantages of privacy, freedom, and cost, user experience is the driving force to ensure its broad appeal. Therefore, it has a simple, user-friendly interface that is free from advertisements.

The Block takes the form of a downloadable app, rather than a website. This is critical because it means that the software is accessible from every user's personal computer, and there is no single point of failure, as there would be with a hosted website. No blockchain download is required. Although, a user operating on a local copy of the blockchain can use The Block offline. In that case, transactions will not be processed until the user is online again. The app is available for Windows, macOS, and Linux. Mobile app versions for iOS and Android are currently under development. Our web version is already in alpha. This will be accessible through Status.im, which will increase our user traffic and adoption rate. As The Block is intended for global commerce, it will be launched in 20 languages, with further languages to be added in the future.

Ether (ETH) is the «gas» that powers the Ethereum blockchain on which The Block is built, and it is also The Block's native currency. Ether is used for making payments between customers and merchants, and items for sale are listed at a price quoted in ETH. The buyer pays in ether, and the vendor receives ether as payment – ensuring the most frictionless solution for internal payments. The users may convert ether to other currencies at their own discretion.

The Block includes an internal wallet for every user. All payments for goods and services are made in ether from this wallet because the respective funds need to be withdrawn and sent to an escrow contract at the time of purchase. The internal wallet can be funded from either an external ether wallet or from within The Block's interface via ShapeShift [www.shapeshift.io]. At present, this requires Bitcoin (BTC) or other cryptocurrencies, but a solution is planned for converting national currencies such as US dollars or euros directly into ether. Funds can be withdrawn from the internal wallet anytime and be sent to an exchange or external address. The internal wallet is fully decentralised, and any ether stored there remain in the user's control. The wallet is secured with a user-generated passphrase that must be created before the app can be used. Support for multiple wallets within the app is planned.

One of the main reasons for the creation of The Block is the inherent lack of privacy on traditional e-commerce platforms. The Block offers different levels of privacy and protects the privacy of users who want to remain safe. At the same time, BitBoost offers no support to the sale of illegal items. As a decentralised protocol, The Block will be available in many different jurisdictions. Before a user is granted access to The Block's functionality, they must first agree to the terms of service, which require that all users act in accordance with the laws of their jurisdictions. Compliance with local laws is the individual's own responsibility.

Concern for the users' privacy and the ability to trade freely are built into every element of The Block. This is reflected in numerous features:

Spam email prevention

E-commerce companies collect their customers' email addresses, which are used for the registration process and to administrate their accounts. This email database represents a substantial marketing resource, and emails announcing deals, discounts, or invitations to return to the site are sent out with intense frequency. Most of these emails are unsolicited and unwanted. The Block does not require any personal information from buyers or sellers. BitBoost will not send any advertisements to its users as a matter of policy.

Ethereum nodes

Users can connect to the Ethereum network by using a local copy of the blockchain or by connecting to one of the nodes maintained by the BitBoost team. The former requires additional time, storage space, and bandwidth. This will be applicable mainly for existing Ethereum node runners but also those for whom privacy is particularly important. The latter option is more appropriate when a complete download of the Ethereum blockchain is not possible or desirable, or when the user's machine is not online at all times.

Account creation

Creating a new identity to use The Block is a simple process. The Block does not require any information that could be used to identify buyers and sellers. Both merchants and customers can set up accounts for free, and no advertising or in-app purchases exist. In the future, the user will be able to choose an alias for The Block. This is a string of characters and could even be an Ethereum address.

Encrypted messaging

During the purchase process, encrypted messages can be included with the transaction. The buyer's address and details about the shipping method are stored as an encrypted message on the blockchain. When the seller approves or declines a sale, he or she has the option to send an encrypted message with additional information to the buyer. Messages required by the purchase process are stored on the blockchain, whereas encrypted chat facilities are provided off-blockchain. Chat facilities require initial registration, but can be used without logging in.

BitBoost has developed a system to automate private image hosting. Images are an important part of online commerce, and private image hosting is a critical requirement for a truly private marketplace. As part of the listing process, merchants can upload images from their hard drive to a private image hosting service [https://imgur.com] without leaving The Block. The service is free of charge.

HTTPS and private key encryption

The Block uses HTTPS exclusively for all external services such as the ETH/BTC exchange, exchange rate queries, and image uploading. Tor integration is planned. Private keys are stored encrypted, using AES-128 encryption together with a salt and 10,000 rounds of SHA-256 hashing.

3.3 ESCROW AND ARBITRATION

Existing e-commerce platforms require centralised payment systems to process transactions, such as PayPal. In the event of a dispute, customers or merchants can appeal for arbitration to those companies. On a decentralised platform, such a solution is not possible. Based on smart contracts, BitBoost has developed a new approach to escrow.

The option of arbitration, in the case of a dispute between buyer and seller, will be included in The Block. A seller may optionally name an arbiter in an item listing. Payment for the item is held in an escrow contract and will be only released to the seller if both parties indicate that they are satisfied, or if a given period of time has passed without the buyer having opened a dispute. If a dispute is opened, the designated arbiter will be granted control over the escrowed funds and must determine whether they should be returned to the buyer, transferred to the seller, or to both in some ratio. The arbiter may request a fee for this service. Over time, some arbiters will gain a positive reputation for their impartial service and fairness. All communication between buyer and seller is encrypted using the session key, which is generated when a buyer purchases an item. This session key is encrypted with the buyer's private key and the seller's public key using elliptic curve25519 encryption. If required, the session key can be shared with the arbiter so that he or she can access the encrypted communication.

A transaction on The Block consists of four parties: the seller, the buyer, the arbiter, and the escrow contract. The seller may choose the arbiter when he lists the item. Arbiters will set their own fees for their service, either a fixed price or a percentage of the item's selling price. The arbiters also determine whether the fee is only charged in the case of a dispute or if it is due regardless of any use of the arbitration service.

Example for arbitration

The following sequence illustrates arbitration on The Block:

· The seller creates a listing and chooses an arbiter who has set a fee of $5 in ether, to be charged only in the case of a dispute. At this point, the arbiter does not get paid.

· The buyer buys an item. Money moves from the wallet to the escrow contract.

· The seller ships the item to the buyer and indicates to the escrow contract that he or she has completed their part of the sale.

· The buyer receives the item.

· At this point, the buyer can finalise the sale or open a dispute. If the sale is finalised, then the money moves from the escrow contract to the seller. The transaction is settled, the arbiter does not get paid.

· If the buyer opens a dispute, two things can happen:

1) The seller agrees with the dispute, and the money moves from the escrow contract back to the buyer's wallet. The arbiter does not get paid.

2) The seller also wants to open a dispute. In order to do so, the seller pays $5 in ether to the arbiter from the escrowed funds.

· At this point, the arbiter gains control of the escrowed money, and he can send the money only to the buyer, or only to the seller, or to both in a ratio that he or she chooses.

The arbiter only gets paid if both parties dispute the transaction. In that case, the seller pays the arbiter out of the escrowed funds. If there is no dispute, the arbiter does not get paid, and choosing an arbiter was free for the seller. For the buyer, opening a dispute and arbitration always is free of charge.

3.4 OTHER KEY FEATURES

Reputation system

In addition to the arbitration service, The Block will offer its users protection through a reputation system. Every seller and buyer will have a reputation rating derived from their conduct and the quality of their products during and after every transaction. Users with a low or negative reputation score may be filtered out, in order to protect all sellers and buyers from fraud and wasted time. This reputation system is currently under development and will encourage legitimate merchants and customers to act honestly and to build up a solid reputation.

A complication of reputations systems in general is how to handle Sybil attacks, when a dishonest user creates multiple accounts and pretends to be many satisfied buyers to increase the reputation of his original account, or hires people to pretend to they are satisfied buyers to artificially inflate his reputation. This is particularly a problem in decentralized systems because they don't require users to reveal their identity. Even eBay and Amazon, the giants of e-commerce, don't yet have a total solution for this. We are trying to deal with this through smart contracts. The technology is still new but we are hopeful that smart contracts will allow us to develop solutions that haven't been available before.

By The Block's design, censorship is not possible. Listings and transactions are written directly to the Ethereum blockchain, which is securely maintained by thousands of miners around the world. Item listings are not controlled, and neither the BitBoost team nor any third party can remove listings.

However, in the interest of providing a marketplace that is both censorship-free and attractive for all users, The Block will contain a filtering system. This system will not remove listed items from the blockchain, but it will enable users to filter out listings so that they are not displayed anymore.

The Block will include a basic filter, which will be maintained by the BitBoost team and which will be turned on by default. Users will also be able to subscribe to filters provided by third parties. These third parties are expected to offer such services for a variety of reasons: filtering illegal material in accordance with their respective jurisdictions, filtering morally objectionable items, or filtering for religious purposes. Filters that are tailored for different jurisdictions will help users to comply with local laws while maintaining access to the global market. But the choice to implement any filter will be left entirely to the individual user.

Instant search

Many e-commerce sites provide powerful instant-search tools to help customers find what they are looking for quickly, and to browse the site smoothly and easily. The Block offers the same. Buyers will be able to use a search engine-like functionality by simply entering the desired item. As they type, they will receive a constantly updating list of matching products in real time.

To conduct a search, no login is needed, making it possible for everyone to browse The Block without registering. The chat function is only enabled after registering, but as it runs independently of Ethereum, it can be used without having to log in. Potential buyers can engage privately with merchants to ask questions and clarify sales policies, prices, and shipping.

The Block will remain under constant development for the foreseeable future. A series of new features is planned for inclusion in the platform, but the team also relies on the community to suggest new elements and improvements. The development roadmap is available on the BitBoost website [www.BitBoost.net]. Upcoming features are announced on the BitBoost forum and new functionality may be requested in several ways: from within The Block application using the feedback tool, by making a new request on the forum, or by emailing BitBoost directly at feedback@bitboost.net.

Key features that are currently under development include:
· Internal reputation system,
· Tor integration,
· Pricing in national currencies and the purchase of ether and BitBoost tokens (see chapter 5 «Business model» and chapter 6 «The Token») in fiat currencies, and the
· Encrypted version of the chat system.

The app is currently in beta testing. The development team welcomes feedback from both testers and end users after the initial launch. Regular releases of new beta versions will allow BitBoost to address any bugs discovered during this process as well as to integrate new features in response to suggestions and market needs.

3.5 NOT ANOTHER DARKNET MARKET

The BitBoost team is well aware of public concern regarding darknet marketplaces. We wish to put any fears to rest concerning the presence of illegal activity on The Block. Simply put, we do not encourage or support it, and our platform does not provide a welcoming environment for darknet goods.

One of the most famous cases of the digital trafficking of illegal goods, and a source of hesitation for users contemplating new internet markets, is the Silk Road project. An uninformed user may equate good applications of decentralization, like personal privacy, with the potential for crime, but this is not the case at all, for several reasons.

For one thing, Silk Road was not built on a blockchain. It relied on Tor hidden services. Tor actually has two main functions. One is to provide services that cannot be tied to an IP address. This is what allowed Silk Road to engage in illegal activity for a time without getting caught. We have nothing to do with Tor hidden services and will never implement this feature. We will, however, take advantage of Tor's other function, which will give our users a secure way to connect to BitBoost's hosted Ethereum blockchain. This means our users can benefit from privacy but are not given an avenue for illegal activity.

In fact, it's quite the opposite. The Ethereum blockchain is a public blockchain. All listings are available for anyone to see, including law enforcement. BitBoost will cooperate with local governments insofar as we are able. This is the same approach taken by Apple, the world's most valuable company. In this way, blockchain technology is a huge boon to law enforcement without compromising the privacy of good people just trying to make a living or buy a perfectly legal item.

Also, as a decentralized company, BitBoost encourages personal responsibility rather than reliance on a centralized agency for protection. We have already implemented three features in line with this idea. First, our previously mentioned Filter System will be in place before The Block moves to the Ethereum Live Net. So, users will have no involuntary contact with illegal items. They will even have the ability to create their own filters so that they can avoid items they just don't wish to see. Second, users must choose to turn off the built-in filter.

Taking this action may expose them to items that, while perfectly legal in some areas, might not be legal in their jurisdiction. That is their personal choice. Lastly, sellers must toggle the Terms of Service checkbox before they can list any item. Among other things, this document states that the item being listed is not illegal in the seller's jurisdiction.

3.6 TECHNICAL DESCRIPTION

The Block utilizes Ethereum smart contracts to list items for sale, to organize the purchase and sales processes, to hold escrowed funds, and to allow communication between buyers and sellers. Smart contracts enable a transparent and safe trading process. Messages mandatory to the purchase process are stored encrypted on the blockchain. Non-mandatory and private communication can be moved to an off-blockchain platform to reduce costs and improve speed. As all data on the Ethereum blockchain are publicly visible, private communication requires encryption.

BitBoost does not use encryption to promote trade in illegal items or to foster a scam ecosystem, but reflects the lessons learned from the mass violations of privacy that have occurred in recent years. A decentralised, blockchain-based system is less prone to theft of personal information. But it needs strong cryptography to protect that data, since the data are exposed on the public blockchain.

The Block uses the elliptic curve Curve25519 for private-public keypair generation. On a high-level summary, each Curve25519 user has a 32- byte secret key and a 32-byte public key. Each set of two Curve25519 users has a 32-byte shared secret used to authenticate and encrypt messages between the two users. For a more detailed, medium-level view, the following picture shows the data flow from secret keys through public keys to a shared secret.
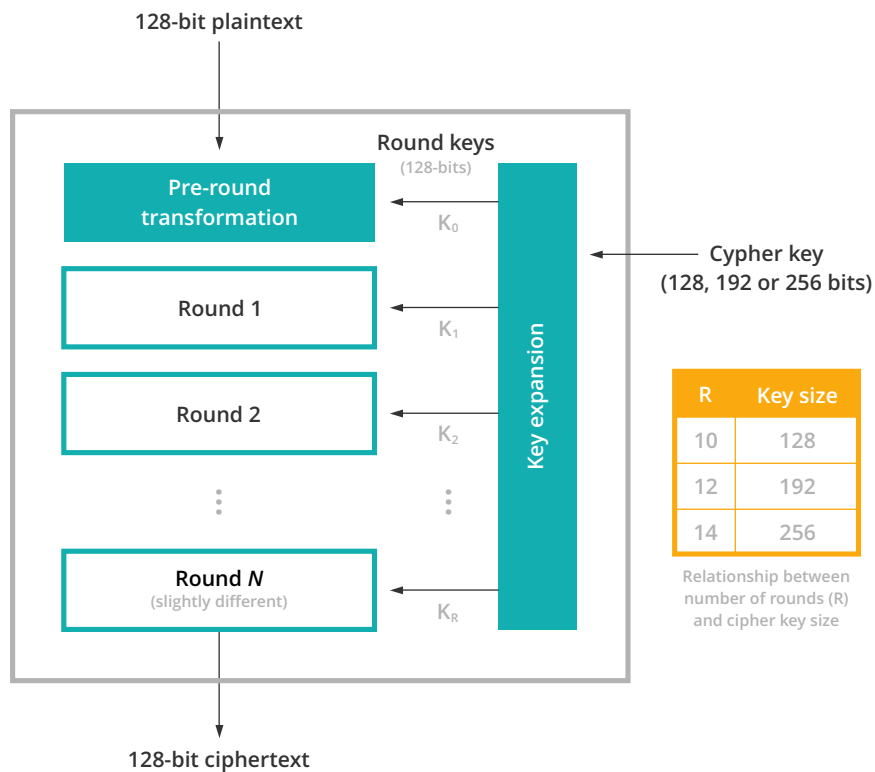
Exhibit 2: Data flow
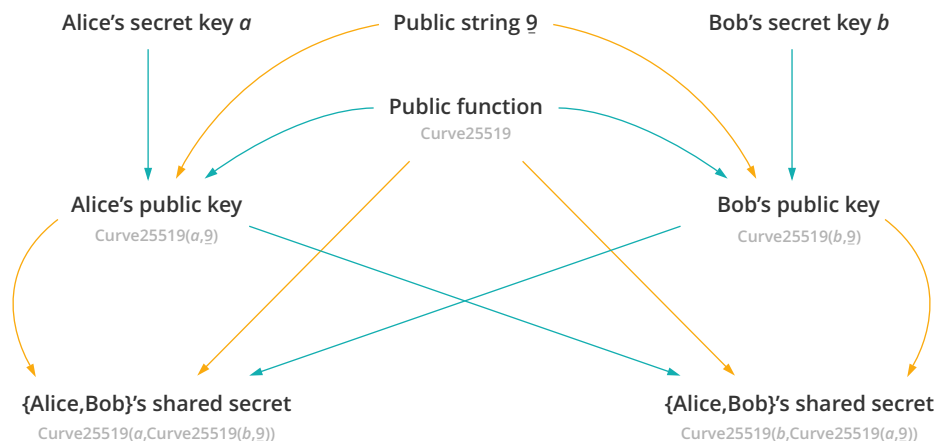
Advanced encryption standard (AES) is used for data encryption, and one-time private keys are generated for the purchase session. One-time keys allow the buyer and seller to share their communication with a third party, e.g. the arbiter, without revealing their private keys. The Block shares private keys for both encrypted communication and Ethereum wallet generation. The private key is stored in the user data folder in JSON format, encrypted with the user's password.

Interestingly, AES performs all its computations on bytes rather than bits. Hence, AES treats the 128 bits of a plaintext block as 16 bytes. These 16 bytes are arranged in four columns and four rows for processing as a matrix. In contrast to data encryption standard (DES), the number of rounds in AES is variable and depends on the length of the key. AES uses 10 rounds for 128-bit keys, 12 rounds for 192-bit keys, and 14 rounds for 256-bit keys. Each of these rounds uses a different 128-bit round key, which is calculated from the original AES key. The following illustration shows the schematic AES structure:

Exhibit 3: Schematic AES structure

128-bit plaintext

Round keys
(128-bits)

Pre-round transformation

K_0

Round 1

K_1

Round 2

K_2

Key expansion

Cypher key
(128, 192 or 256 bits)

R	Key size
10	128
12	192
14	256

Relationship between number of rounds (R) and cipher key size

Round *N*
(slightly different)

K_R

128-bit ciphertext

The wallet management code is taken from myetherwallet source code: https://github.com/kvhnuke/etherwallet/blob/mercury/app/scripts/myetherwallet.js

The store itself is a smart contract holding a list of events. Each event is a new listing. Anyone can add new listings to the store by paying the listing fee. Using events is a cheaper way of utilizing the smart contracts' publicly visible storage.

Each new listing is stored inside and corresponds to a separate smart contract. Events in the store only reference those contracts by the contract address. Each listing contract also stores a list of events representing the trade history of the item. Additionally, each item's contract provides escrow functionality and safely holds the funds until the purchase process is finished.

The Block application fetches a store events list, gets a list of item addresses, checks each item's contract bytecode to protect from malicious contracts, and retrieves each item's state and trading history. The fetched data are stored inside a sqlite database on the user's PC, so that navigation and search on the market are faster and updating to each new blockchain state does not take as much time. BitBoost has developed a caching service for additional speed in The Block. The caching service stores appropriate data from the Ethereum blockchain (e.g. contract bytecode, event list,contract properties) inside a MySQL database and updates the database periodically.

The escrow system is provided by the listing contract itself. Funds paid by the buyer stay inside the contract and await confirmation from the buyer. If the buyer says YES, the money is sent to the seller. If the buyer says NO, the money is locked up in a disputed state. At this point, the seller should choose YES or NO to either send the money to the buyer or to require arbitration. If both parties say NO, the money is locked and a third party arbiter will choose whether to unlock the money to the buyer, to the seller, or to both in some ratio. The arbiter may take a percentage fee or a set fee from the escrowed funds for this service.

Each product for sale has a history of buys and sells, known as orders. Each order contains useful information about the action, timestamp, any attached encrypted message, and information about the message sender. Encrypted messages are decrypted automatically by the backend if the user is logged in and is either the buyer or the seller.

When the app loads the orders, they are grouped by the purchase order so each item may have multiple purchase orders and each purchase order may have multiple related orders. A purchase order can be understood as a buying session and it has some session-related fields attached: a session key for encrypted communication, a buyer's public key, a buyer's account, a purchase and a received payment amount, a message from the buyer with shipping info, and other useful information.

HTTPS

All connections are made via HTTPS: ShapeShift, image hosting, BTC/ETH/USD exchange rates, geth nodes, caching nodes, and any other external services.

HTTPS protects against Man-in-the-Middle (MitM) attacks and against traffic analyzers. HTTPS is a prerequisite for using Tor. MitM attacks allow the attacker to change any data received by the client, such as the item description. Traffic analyzers allow the attacker to identify that The Block platform is being used and to possibly block the traffic. Implementation: deploy HTTPS proxy on geth nodes, turn on HTTPS on caching servers, hardcode HTTPS URLs for external services, and filter all non-https image URLs.

BitBoost intends to make The Block code open source, but not until the app is established enough for the network effect to protect us from competitors who may build products based on our code. We expect to release the code sometime in 2019. In the meantime, many questions may be answered simply by downloading The Block and trying it out.

3.7 TECHNICAL ROADMAP

Q1
- PRIVATE ALPHA TESTING BEGINS
- ALL CONNECTIONS MADE THROUGH HTTPS
- ESCROW & ARBITRATION SMART CONTRACTS
- UNIVERSAL SEARCH BAR

Q2
- BLOCKCHAIN CACHING SYSTEM
- FREE, PRIVATE IMAGE UPLOADING
- UNENCRYPTED CHAT SYSTEM
- x2 GETH AND CACHING NODES

Q3
- DESKTOP APP FOR MAC OS, WINDOWS, AND LINUX PRIVATE BETA
- LOCALIZATION IN 10 LANGUAGES
- MOBILE APPS FOR IOS AND ANDROID
- ALIAS SYSTEM
- ERROR REPORTING SYSTEM

Q4
- PUBLIC BETA TESTING
- LOCALIZATION IN 20 LANGUAGES
- ERROR REPORTING SYSTEM
- STATUS.IM INTEGRATION
- WEB VERSION
- FILTERING SYSTEM
- IMPORTABLE THEME SYSTEM
- SHIPPING PROVIDER INTEGRATION
- PASSLFIX INTEGRATION
- INTEGRATED ENCRYPTED CHAT SYSTEM
- BBT PRE-SALE
- MAIN SALE

- APP FOR ESCROW AND ARBITRATION PROVIDERS BETA
- IMPORTABLE THEME SYSTEM
- ALIAS SYSTEM
- REPUTATION SYSTEM
- VARIABLE AND SAFE-LOW GAS COST

Q1
- REPUTATION SYSTEM
- MOBILE APPS FOR IOS AND ANDROID
- SHIPPING PROVIDER INTEGRATION
- PASSLFIX INTEGRATION
- STOREFRONT SYSTEM
- BULK INVENTORY UPLOAD
- TOR USER PRIVACY

Q2
- LIVE DESKTOP APP
- LIVE APP FOR ESCROW AND ARBITRATION PROVIDERS
- LIVE STATUS.IM APP
- LIVE WEB VERSION
- INTEGRATED ENCRYPTED CHAT SYSTEM
- FILTERING SYSTEM
- VARIABLE AND SAFE-LOW GAS COST
- COMPLETE GETH AND CACHING NODE NETWORK

Q3

Q4
- STOREFRONT SYSTEM
- BULK INVENTORY UPLOAD
- TOR USER PRIVACY
- FIAT PAYMENT SYSTEM

- 2017
- 2018
- TASK/DEVELOPMENT STARTS
- TASK/DEVELOPMENT COMPLETED

4.1 THE E-COMMERCE MARKET

The internet has radically changed the way business is done, and this change is most dramatic in commerce. Previously, shopping was predominantly done in person and on-site, or by using slow and inflexible mail-order systems. Supply was limited, too. Today, efficient e-commerce platforms offer a formerly unthinkable variety and transparency of goods – and reach vast customer segments, even if they exist in remote or under-developed areas.

Although the first online stores were rudimentary and static, offering a very poor user experience, online shopping gained strong momentum. The e-commerce sector is rapidly growing and far from mature in various respects. E-commerce came of age in the early years of the 21st century, but remains a high-growth sector – at least partly due to the opportunities offered by the proliferation of mobile devices.

The new middle class

E-commerce mainly relied on developed markets in its early stage, but business patterns show a new form of consumers appearing. With disposable incomes on the rise in many emerging markets, the world of electronic commerce is poised to be driven by the expanding and increasingly wealthy new middle class.

While internet access rates across developed markets are well above 80%, emerging markets have yet to catch up. Applying the same average access rate to emerging markets would lead to an additional 1.1 billion people who have access to e-commerce. So the industry's growth outlook remains very positive.

Exhibit 4: Internet penetration: Developed markets versus emerging markets

Credit Suisse Emerging Consumer Survey 2017
Source: www.worldinternetstats.com
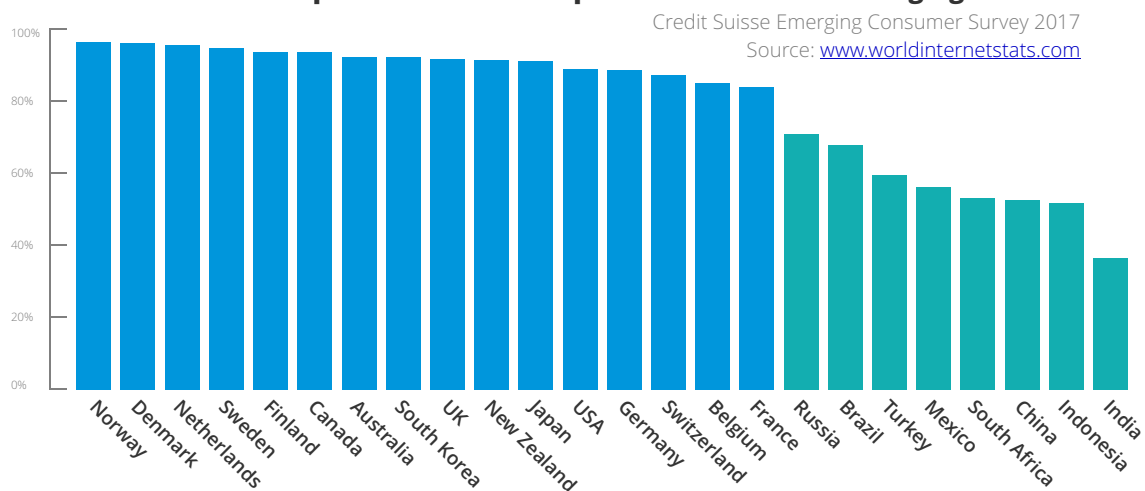
These days, online shopping can be done on smartphones and tablets, making it a proper on-the-go activity. The «mobile-in-the-home» capacity allows consumers to literally shop anywhere and anytime, thanks to their Wi-Fi networks as well as untethered mobile devices. Consumers now have access to a wider array of products and services, more sellers, product reviews, and price comparisons, and can even provide their own feedback on products and services. Credit card processing software and payment applications such as PayPal have also made today's online shopping much more convenient compared to visiting a physical store.

Sector overview and statistics

E-commerce is a huge and rapidly expanding sector. In 2016 global sales for products and services purchased via the internet totalled approximately $1.9 trillion, representing around 8.7% of all retail spending. By 2020, online retail sales are expected to have grown to $4 trillion – with a compound annual growth rate (CAGR) of well over 20%. By that time, electronic commerce will make up about 14.6% of total retail sales.

But the most powerful market dynamics are observed in the emerging markets, where the share of consumers shopping online has more than doubled since 2011. China continues to dominate the e-commerce market while other countries such as India and Tukey are catching up. Online spending per capita across most of the emerging world remains well below levels seen in developed countries, creating good growth opportunities going forward. The Credit Suisse 2017 Consumer Survey estimates that online «retail» spending in emerging markets may exceed $2.5 trillion by 2025.

Globally, Asia-Pacific (APAC) continues to dominate the e-commerce market, with more than $1 trillion in e-commerce sales in 2016. Due to the growth of the purchasing power of its emerging middle class, internet coverage and penetration of mobile devices, as well as improving infrastructure and strong internal competition, the Asian-Pacific region will see continued growth and will account for e-commerce sales of more than $2.7 trillion by 2020. China alone represented almost $900 billion in e-commerce sales in 2016 – some 47% of all worldwide online sales. The aggregated number of the selected countries below shows a total online retail sale above $800 billion for 2016.

Exhibit 5: Yearly online retail sales by selected country and Aggregated ($B)

Legend: 2014, 2015, 2016

- CHINA: 450, 589, 752
- INDIA: 11, 22.5, 44.7
- RUSSIA: 17.4, 22.8, 25.5
- BRAZIL: 13, 15.9, 17.1
- MEXICO: 10.2, 13.3, 16.9
- INDONESIA: 3, 4.6, 5.6
- SOUTH AFRICA: 0.3, 0.5, 0.6
- AGGREGATED: 504.9, 686.6, 862.4
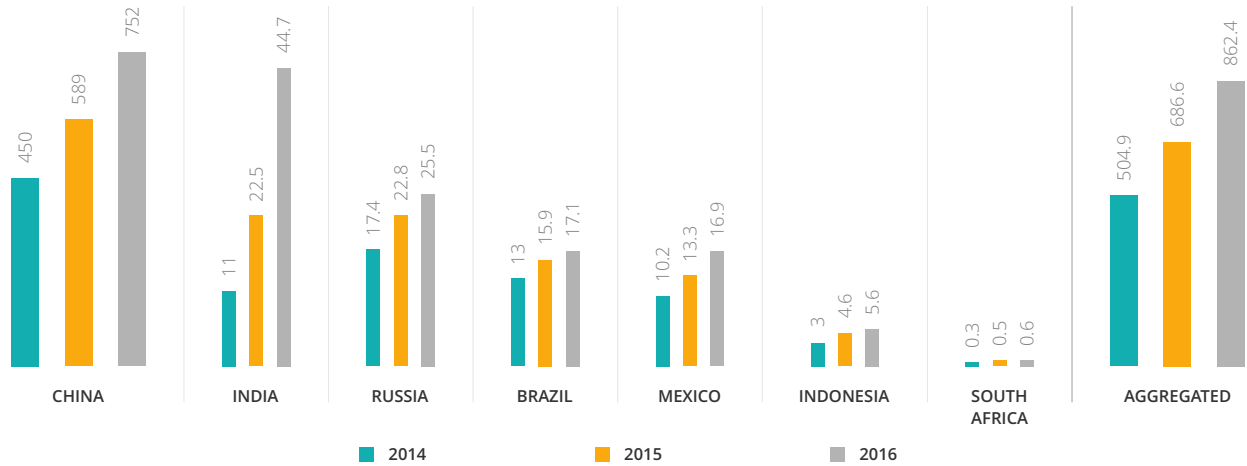
North America constitutes a thriving part of the e-commerce market and experienced 15.6% growth in 2016 to top $423 billion in sales. North America will retain its position as the second largest e-commerce market in the coming years, with similar levels of growth forecast through 2020 as online retail is further normalised and expands into new areas – notably the grocery market (witness Amazon's recently announced acquisition of the food retailer Whole Foods).

In Europe, 84% of individuals aged 16 to 74 had used the internet in 2016, with 66% buying goods or services for private use. Compared with 2007, online purchases by internet users increased by 16 percentage points.

Exhibit 6: Age structure of online buyers

Legend: Total, 16-24 years, 25-54 years, 55-74 years
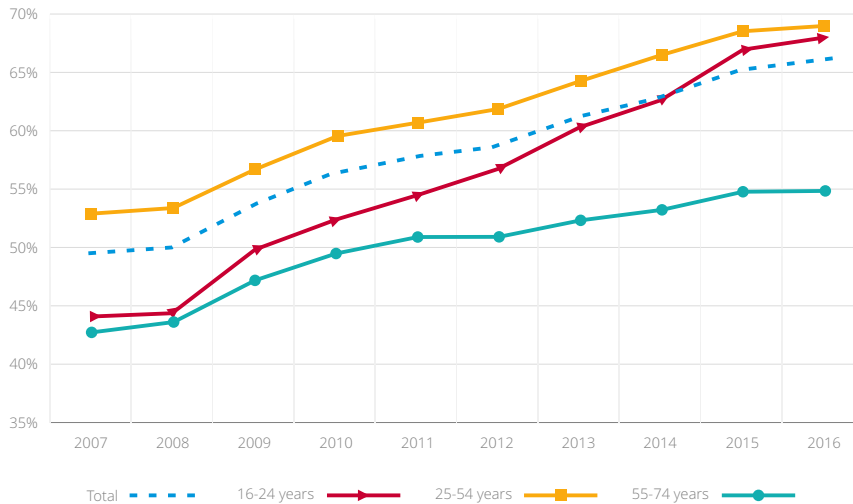
Exhibit 7: Most recent online spending per capita (USD/year)
Source: Retailresearch, eMarketer, World Bank, Statista, Credit Suisse
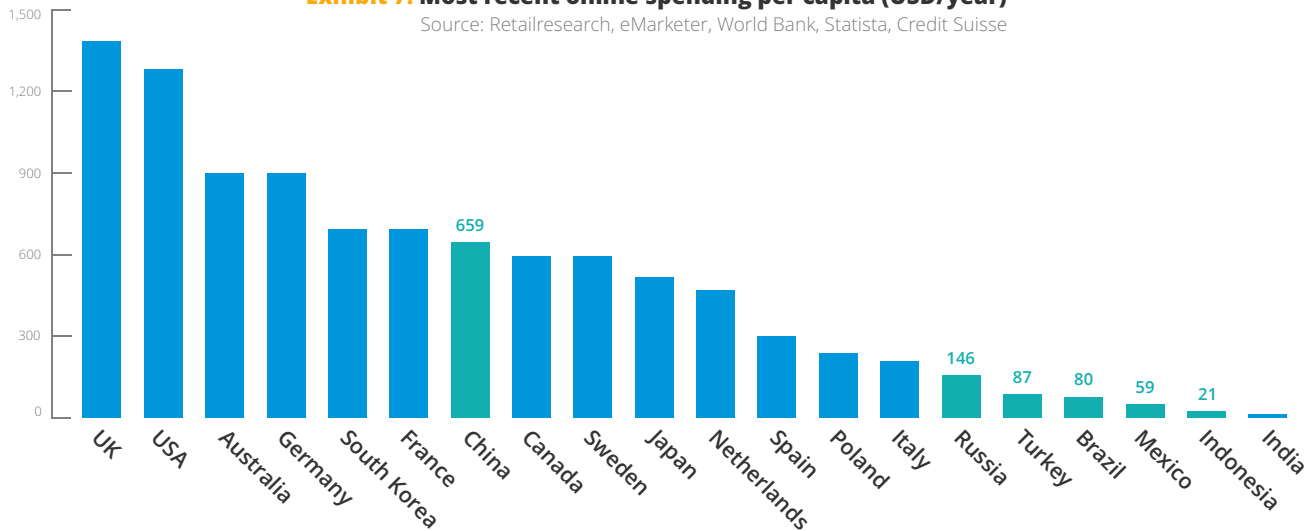
B2B (business-to-business)

The B2B market dwarfs the business-to-consumer (B2C) e-commerce market and has very different properties and needs. Rapidly changing distribution channel dynamics are redefining wholesalers' business models across a broad spectrum of product and service areas. Like manufacturers, wholesalers have to go beyond competing on price and availability to provide excellent omni-channel customer experiences. In addition, growth drivers of B2B e-commerce will include globalisation of procurement and cost advantages. These market factors and more are driving B2B e-commerce platforms. In the United States, for instance, B2B e-commerce platforms are expected to post double-digit growth figures through 2020.

A recent Forrester study showed that 74% of B2B buyers in the United States will research about half or more of their work purchases online before buying. The same study found that about 30% will make half or more of their work purchases online today, while 56% expect to make half or more of their work purchases online in three years. These dynamics will eventually take hold also in other regions, including emerging markets, which mostly still rely on traditional channels of commerce.

As well as serving B2C customers, The Block will squarely target B2B e-commerce in both its design and its marketing, recognising that the growth of this sector represents a key opportunity for adoption.

Buoyed by the success of online marketing platforms such as eBay and Taobao, online C2C transactions as a major e-commerce form have become popular. These platforms have made it extremely easy for both sellers and buyers to purchase and sell goods and services. When looking at China's online shopping market, the C2C segment represents a very large portion of the gross merchandise value (GVM), estimated at 45% in 2016. This model is being quickly replicated across the globe as barriers to entry are close to zero. Emerging markets have become the focus of such platform types, with wealthier buyers opting to choose an online B2C marketplace.

Exhibit 8: Structure of China's online shopping market by GMV 2012-2019
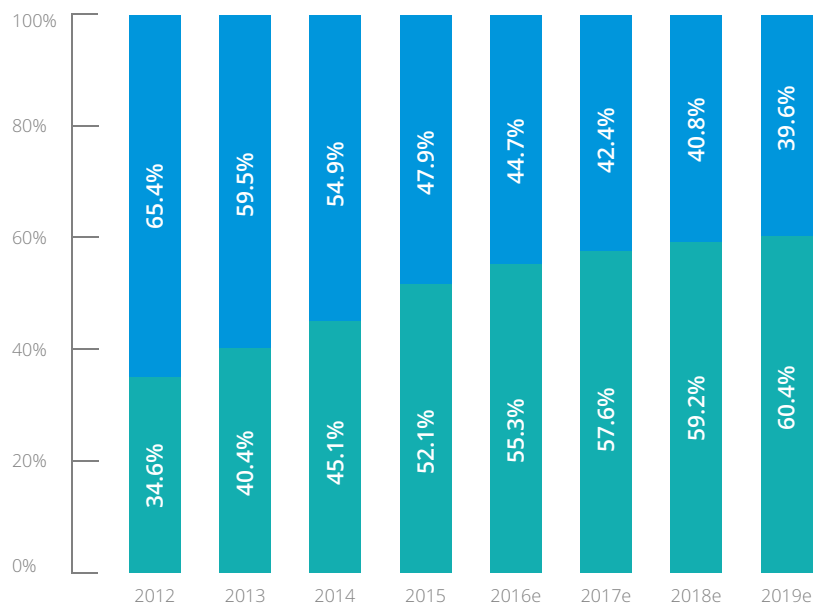
Source: The data were calculated based on the financial results published by enterprises and interviews with experts and iResearch statistical model.
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Tomorrow's industry leaders might not be known today. Industry competition is often thought of as a continuous battle between the same set of key players. But as history shows, things are far more dynamic. According to R «Ray» Wang, founder of Silicon Valley-based «Constellation Research», 52% of the Fortune 500 companies have been merged, acquired, gone bankrupt, or fallen off the list since 2000. The impact of digital disruption is real. However, it's not the technologies that drive this change. It's a shift in how new business models are created.

Global e-commerce is such a growth industry, which poses huge challenges to the world of traditional retail channels. For many consumers, especially in the developed world, e-commerce has become the top choice when it comes to shopping, threatening the existence of old brick-and mortar retail shops. It is also creating huge ripples in emerging markets, especially since ecommerce shops can enter the market quite easily.

The barriers of entry are relatively low and the initial capital requirements are small. Using the technology available today, e-commerce shops can acquire a reach far beyond any initial expectations. Many platforms operate in the market, offering similar products from a variety of suppliers that have little bargaining power and are looking for the widest exposure possible to maximize their sales potential.

Some may see market leaders such as eBay & Amazon to be bigger threats, but they are subject to the innovator's dilemma. Technology is changing at lightning speed these days and, in order to stay on top, companies must innovate. E-commerce giants are weighed down by sunk costs. They are deeply invested in remaining essentially as they are now, making small changes to retain customers. It is impractical and nearly impossible for them to innovate from the ground up, whereas a new company could invest everything they have into creating a product that builds on existing knowledge but uses only the best and latest technology. This is how small companies can overtake the giants, especially if they have a fresh, practical solution to an existing problem.

Enter The Block. We are about to explode onto the e-commerce scene, having worked on The Block itself for over two years. It would take time to catch up to us, and by that point we will be established with supporters using our new technology. We could also say that, since eBay, Amazon, and other giants co-exist in the world already, there is plenty of room for different approaches. The environment is only expanding.

It is relevant to note that darknet markets also exist. They provide unfiltered listings – typically for drugs and other illegal items –, and accept Bitcoin due to the irreversible and relatively private nature of Bitcoin payments. BitBoost does not encourage or condone illegal activities. A number of mainstream peer-to-peer markets exist, which are built on the blockchain and are more directly comparable to The Block. Nevertheless, there are critical differences that set The Block apart from its immediate competition.

From a consumer point of view, brand loyalty is limited while access to global vendors is virtually unlimited. Price is often the key factor when making a purchase, but other innovations such as payment methods and distribution channels are equally important. Today, the e-commerce industry is dominated by a handful of well-established enterprises.

Their dominance varies from region to region and their business models are similar. Auction-price and fixed-price sales are generally handled through an escrow account system, which is usually managed by a third party payment service provider. In summary, the exhibit below analyzes the level of competition in the e-commerce industry today, according to Michael E. Porter's «Five Forces Analysis».

Exhibit 9: **E-Commerce Porter's Five Forces Analysis**

New Entrants Threat
Medium - High

- Attractive growing industry with low entry barriers
- Low initial capital investment
- High cost for scale competition

Supplier Power
Low

- Tens of millions of sellers
- Can list on multiple platforms
- Sensitive to platform policy changes

Competitive Rivalry
High

- Large established companies
- Brand equity
- Price, product selection
- Payment Systems Innovation

Customer Power
High

- Access to global vendors
- High price transparency
- Price sensitive
- Limited brand loyalty

Substitutes Threat
Low - Medium

- Offline players; shopping malls, local markets
- Direct supplier online sales
- Niche product segment sales
- Disruptive business models

There are a number of existing decentralised markets that have integrated cryptocurrencies as a payment system on the market. The following table attempts to compare them.

Exhibit 10: Decentralised marketplaces

	The Block	OpenBazaar	AuctionHouse	Bitmarkets	SafeMarket	Particl	Syscoin
Blockchain Based	ethereum	●	ethereum	●	ethereum	●	Syscoin
Decentralized	✓	✓	✓	✓	✓	✓	✓
Open Source	●	✓	✓	✓	✓	✓	✓
Smart Contracts Based	✓	●	✓	●	✓	●	✓
Cryptocurrency Payment Option	ethereum ShapeShift	bitcoin ShapeShift	ethereum	bitcoin	ethereum	particl ShapeShift	Syscoin bitcoin CASH
Native token	✓	●	●	●	●	✓	●
Privacy and Encryption	✓	✓	●	✓	✓	✓	✓
Mobile Friendly	✓	●	●	●	●	●	●
Escrow Account System	✓	✓	✓	✓	✓	—	✓
Fees	Fixed	●	—	●	Variable	Fixed	✓
Third Party Systems Integration	✓	●	●	●	—	—	✓
Product Selection	All types	All types	Virtual goods only	All types	All types + submarkets	All types	All types
Listing Quality Control	✓	●	●	●	✓	✓	—

OpenBazaar

One of the best-known decentralised marketplaces is OpenBazaar [https://openbazaar.org]. OpenBazaar is an open-source application that uses bitcoins for payment and does not impose external fees. However, there are other «costs» involved in using OpenBazaar. There are no explicit fees, but OpenBazaar uses its own peer-to-peer network, rather than using the blockchain's network itself (The Block uses Ethereum). In order to ensure that items remain for sale, users must stay connected to this network, meaning the computer must stay on and connected 24/7. There are overhead costs involved in maintaining this connection or paying a different party to host items on their node. Being connected to a separate peer-to-peer system also presents security risks and additional vectors by which the user's privacy may be compromised.

AuctionHouse

AuctionHouse [http://auctionhouse.dappbench.com] is a marketplace that also uses Ethereum. However, it is not designed for selling real-world goods, only on-chain, i.e. virtual, items. It is currently in its alpha stage of development and is not ready for a large number of users.

BitMarkets

BitMarkets [https://voluntary.net/bitmarkets] is a decentralised and anonymous marketplace which uses bitcoin as a payment currency. It currently only runs on macOS. BitMarkets is based on the BitMessage protocol, which was made for sending encrypted messages, not creating complex smart contracts. As a result of the limitations of a message-based system, BitMarkets has developed an innovative but impractical solution called «two party escrow». Rather than using third-party human arbiters, funds are locked up in a contract that does not release the money until both sides approve the sale. Each party to the sale deposits an additional sum of money equivalent to the sale price. All funds are effectively lost, along with the funds for the item itself, if both parties do not indicate they are satisfied with the sale.

SafeMarket

The closest analogue to The Block is SafeMarket [https://safemarket.github.io], which also runs on Ethereum and is open source. The project adopts a «submarkets» approach, with third-party marketplaces being managed and monetised within the overall framework provided by SafeMarket. It is currently in its alpha stage of development.

Particl

Like OpenBazaar, Particl [https://particl.io] uses its own peer-to-peer network, presenting security and privacy risks. It also requires its own native currency to do business, unlike The Block, which uses ether. Particl features a variation on BitMarkets' escrow contract. Instead of the buyer and seller both depositing the equivalent of the sale price over and above their main transaction, it includes an «insurance» deposit; only this insurance deposit is at stake. In the example given, the insurance sum on a $100 item is $80. This represents a large additional fee for buyers in addition to what they spend on the item in question – and there are risks involved for both parties in operating this way.
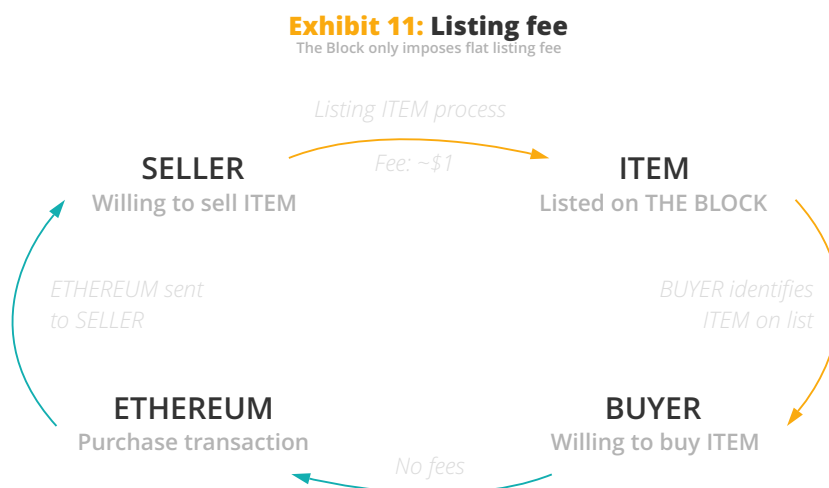
Syscoin

One of the oldest and most developed decentralised marketplaces is offered by Syscoin [http://syscoin.org] which uses its own currency and blockchain for the application. As with other less well-adopted altcoin platforms, the reliance on its own blockchain and internal currency are points of weakness, since the network is only as strong as its community. Ethereum has a much greater network effect, both in terms of its blockchain and currency.

5.1 OVERVIEW

The Block's revenue model differs fundamentally from those of traditional e-commerce platforms. Traditional e-commerce platforms typically charge a commission on the sale price, sometimes in combination with a flat fee. Buyers may also have to pay fees to PayPal or other payment processing solutions.

Exhibit 11: Listing fee
The Block only imposes flat listing fee

Listing ITEM process

SELLER
Willing to sell ITEM

Fee: ~$1

ITEM
Listed on THE BLOCK

ETHEREUM sent to SELLER

BUYER identifies ITEM on list

ETHEREUM
Purchase transaction

No fees

BUYER
Willing to buy ITEM

In contrast, The Block charges customers (buyers) zero fees, and merchants (sellers) are not charged a commission on the sale price of their products. The only costs imposed by The Block are payments for the service of listing an item. This takes the form of a flat fee, approximately equivalent to $1, which is paid in BitBoost tokens (BBT). The listing fee will be $1, regardless of the value of the product for sale or the number of identical items posted in a single listing. BBT will be a reusable ERC20 token that is freely transferable on the Ethereum blockchain and can be held within The Block's integrated wallet, or in an external Ethereum wallet, if preferred.

The price of BBT will vary over time, based on a number of factors:
· Organic growth of user demand,
· Speculative demand,
· USD/ETH exchange rate, and
· The cost of gas within the Ethereum network.

While BBT will fluctuate in value against fiat, BTC, and ETH, the listing fee within The Block will be regularly adjusted to track $1. For example, if BBT are each worth $0.04, then 25 BBT will be needed for listing an item; if BBT are worth $4, then 0.25 BBT will be needed for a listing.

BBT tokens can be purchased directly within the app, or from other BBT holders on external markets (cryptocurrency exchanges, OTC, etc.). BitBoost is making these tokens available ahead of The Block's launch at a low initial price in a crowdsale (see chapter 6.2 «The token sale structure»). The long-term value of BBT will reflect The Block's adoption and its active user base. Early participants who purchase BBT during the token pre-sale will receive the tokens at a steep discount, and they will have the opportunity to participate from the start in The Block's traction and growth.

The price of BBT might grow through the market acceptance of the platform as an ecommerce solution. As The Block grows in popularity, and more merchants join the platform, higher revenues will allow the completion and release of new features that are already in development. This will further increase the appeal of the platform and lead to higher transaction volumes on The Block.

Once BBT have been paid as a listing fee, these tokens will be continuously recirculated into the market by selling them on exchanges. BitBoost needs these funds for marketing and continuous development. Recirculating BBT tokens at market price helps to raise their value while engaging the user community.

To explain how recirculation will work, assume a seller pays 1 USD in BBT to list an item. That BBT goes into a BitBoost account. At our discretion, the tokens are resold on the open market or through the internal wallet on The Block in exchange for ether. Any BBT holder can do the same. The difference is that exchanges offer more variety of payment methods. BitBoost can only accept payment methods that function on the Ethereum blockchain, such as ether. So, there is the convenience factor of buying tokens from within the app vs. the extra effort and expense of buying on an exchange, which offers additional currency options. The choice is up to the user. The price of BBT will vary depending on market value.

In addition to listing fees, there are small network fees which are paid directly to the Ethereum network during transactions between buyers and sellers. These fees are called "gas costs," meaning that they are necessary to fuel the Ethereum network and, thus, The Block. Due to the technical properties of Ethereum, the gas cost must be initially paid by buyers and sellers. However, the treatment of gas cost settlement is under development. It may be possible in the future for gas costs to be paid by a 3rd party. If this happens, it would allow BitBoost to absorb the gas costs for The Block through BBT revenues. Or, another option would be that sellers could offer to cover buyer's gas costs as a marketing tactic (e.g. a statement could be included on a seller's storefront, "Buyer network fees included.").

Regarding the business strategy, BitBoost will follow a two-stage approach. In the past, e-commerce players such as Amazon have introduced innovative customer-to- customer (C2C) market solutions, disrupting the status quo. However, their success was often limited due to network effects and the high quality of the services offered by the incumbents. In particular, the network effect – large numbers of users lead to a superior utility of the platform – is the major hurdle for entering the e-commerce space.

The **first stage** of the business strategy will have a cryptocurrency user niche market focus:

The global consumer-to-consumer (C2C) niche market is occupied by people familiar with cryptopayment alternatives such as bitcoins and ether. This market niche provides the ideal size to continue the development of the platform and to obtain support and feedback from the user base. As cryptocurrencies gain broader acceptance, this user base will grow and represent a truly global community of like-minded people. The top three cryptocurrencies have reached a market capitalisation of $80 billion, and their importance as a mean for capital transfers and payments has grown rapidly.

First phase efforts will lean toward Western Europe, Japan, South Korea, Canada, USA, Australia, New Zealand, and the UAE, where there is often greater user access, but individuals could come from anywhere. In addition to current crypto users, we plan to incentivise Power Sellers to join The Block as we move into the later stages of public beta. We'll offer more valuable incentives once we join the Live Net. This will jump start our user base and encourage buyers to follow.

Two ways we're going to do this are by offering shop templates, and the ability to upload complete inventories via spreadsheet import. We have also thought about offering discounts on listing fees, having tiers of incentives for sellers who list items in bulk. For instance, for every 100 or 500 or 1000 listings, a seller could be rewarded with a credit of BBT. This gives Power Sellers the ability to list even more items. We are thinking of lots of creative ways to encourage seller adoption of The Block and these ideas will continue to develop over the life cycle of our product.

The **second stage** of the business strategy will focus on C2C in emerging markets:

In emerging markets, users started to adopt e-commerce in the form of C2C-oriented models. Also in the later stages of development, the share of C2C e-commerce has remained significant. In China, for example, C2C amounts to 42% of the e-commerce market. This provides vast opportunities. After the initial penetration of the crypto niche segment, The Block will therefore expand into the C2C sector in emerging markets.

The market opportunity in the C2C segment in emerging markets is huge, both in terms of size and growth rates. China is likely to remain the largest single e-commerce market (see chapter 4.1 «The e-commerce market»), already generating a sales volume of $750 billion. However, other developing markets are growing even faster. In 2016, India, Russia, Brazil, and Mexico generated approximately $94 billion. Since 2015, the annual growth rate of e-commerce in these countries reached 57%, a growth trend that is expected to remain in this range as internet and mobile coverage continue to expand. Assuming the target of a market penetration of 2%, by 2020, **The Block could generate an e-commerce volume of around $6 billion p.a. in these countries alone.**

In addition, there is great opportunity for mutually beneficial relationships in emerging markets all over the world by fostering an autonomous ecosystem. Not only is this interesting in terms of long-term strategic perspectives, but it will contribute to the longevity of the product. User investment in a system contributes to a more robust system.

With an emphasis on emerging and frontier markets, the BitBoost mindset lies in the eventual creation of a fully autonomous ecosystem centered around The Block. The goal is to overtake some of the regional infrastructure challenges, such as delivery, accessibility, arbitration, and payment escrow, by allowing those functions to be decentralized and outsourced locally. For example, a person owning a transportation vehicle could take on the delivery function, while a local lawyer could become an arbitration hub within his region.

New 'Uber-like' business models are being applied to various sectors globally where supply chains become more efficient when created by local market participants, rather than by external agents trying to adapt their standardized operations to different market dynamics. The Dabbawala lunch delivery service in India is a staggering example of how successful a locally-run service business can become over time, even if operating in a tough environment. In 2007, The New York Times reported that the 125-year-old dabbawala industry continues to grow at a rate of 5–10% per year

The Block will provide the foundation for new and existing micro-businesses to flourish within their home turf, allowing both buyers and sellers to benefit from low-cost, customized services while building local relationships. This will shape the future of The Block going forward, not only as a marketplace but as a third-party services platform helping local people to reach new customers and sell more goods. And we will do this in a decentralized way, providing the necessary tools for a community to run an autonomous ecosystem, based on their own requirements, commerce preferences, and pricing points. And, we will be happy to collaborate with communities to fully customize their experience.

5.3 PRODUCT PROMOTION

Post token generation events, we have a wide-reaching plan for product promotion. Our mailing list, bolstered by token sale excitement, will serve as a means to keep users engaged as we move forward. We'll send weekly announcements regarding such things as technical updates to The Block, new team members, and BitBoost events.

Our regular blog, through Medium, will include original stories written by our team for more detailed insights into the company. Twitter posts will maintain a daily presence, and Twitter ads will raise awareness of The Block within the crypto community. We will repost YouTube reviews and interviews from our influencers campaign and offer new interviews with our CEO, Paul Mahone, over the course of beta development into public release. And, for the beta test period, we have created a channel on Telegram specifically for feedback, where beta testers can interact directly with each other and team members. Or, they can simply send an email to feedback@bitboost.net.

We also have a regular BitBoost channel on Telegram as well as a BTC Talk forum. Lastly, on our website, www.bitboost.net, we will be creating a public forum to post news and give the public a voice.

Our distribution channels will offer further promotion by widening our accessibility and, thus, our user base. We already offer direct distribution via three downloadable, e-commerce apps for macOS, Windows, and Linux. We also have a web version, already in alpha, that will be embedded within Status.im. Status is a browser for the Ethereum ecosystem. Their goal is to be a one-stop shop for mobile apps that run on the Ethereum blockchain and are already gathering a huge community buzz. Lastly, once our Android and iPhone apps are created, they will be available on Google Play and the Apple app store, so we will have visibility there.

We are also open to service contracts for custom blockchain development when it aligns with the BitBoost mission and complements The Block. Organizations considering an e-commerce app built on the Ethereum blockchain can contact us.

	$5M	$10M	$20M	>$20M
PLATFORM DEVELOPMENT	**$500,000** Current Roadmap execution MEMBERS: 6	**$700,000** Additional Developers hiring focusing on front-end enhancement MEMBERS: 8	**$900,000** Focus on platform v2 back-end scalability and new functionality including our "autonomous ecosystem" initiative MEMBERS: 10	**$1,200,000** Local presence in China with a representative office and local dedicated personnel MEMBERS: 12
MARKETING AND COMMUNICATION	**$600,000** Deployment of SEM, Social Ads and inbound marketing starting with crypto users MEMBERS: 3	**$1,200,000** European roadshow: 2-3 cities + SEM across Europe MEMBERS: 5	**$2,000,000** Global Roadshow focusing on Europe, US, and China: ~5 cities. SEM across US MEMBERS: 7	**$2,500,000** Additional conferences and seminars in selected Emerging Markets: China, India, SEAsia, SEM across selected region MEMBERS: 10
LEGAL SERVICES	**$100,000** Existing Swiss legal Structure	**$150,000** Exploration of Legal structure beyond current one	**$200,000** Partnership with overseas entities in selected regions	**$300,000** EM focus with local partners
BUSINESS DEVELOPMENT	**$150,000** Initial focus on Crypto users globally, platform feedback and reviews. Promotional program incentivising utilisation on a broader scale	**$300,000** Initial collaboration with dedicated large scale sellers, incentivization program, feedback and reviews	**$750,000** Partnership with external consultants focusing on the e-retail sector and exploring partnerships with existing e-commerce platforms	**$1,000,000** Strong effort on the Asian region with the help of local consultancy group or direct hiring
INVESTMENT ON EMERGING MARKETS	**$100,000** Initial focus on crypto users locally, and assessment on future penetration strategy	**$150,000** Reinforce our proposed solution on selected emerging markets with dedicated NGO partnership	**$250,000** "Autonomous Ecosystem" initiative initial deployment via educational marketing in selected cities in Emerging Markets	**$400,000** Partnership with local NGOs focusing on both urban and rural areas: multiple small events showing the possibilites of The Block as a buyer, a seller and as a "service job" outsourcee
CONTINGENCY COSTS	**$150,000**	**$200,000**	**$400,000**	**$500,000**
ANNUAL RATE	$1,600,000	$2,700,000	$4,500,000	$5,900,000

6. THE TOKEN (BBT)

BitBoost's main source of initial funding will be the BitBoost token (BBT), which is used to list items on the decentralised e-commerce platform. BitBoost will hold a token sale to collect funds to finance the completion and the release of the first version of The Block.

The role of the token in The Block

All transactions within The Block will take place in ether (ETH), using the personal wallet integrated in the app.

For the listing of items on The Block marketplace, BitBoost tokens (BBT) will be used. BitBoost tokens do not indicate ownership of a company, will not pay dividends, and BBT holders will not earn any interest. The token is an integral part of The Block's economy, and its value will reflect the degree of penetration and activity within the platform. The more merchants listing items for sale on The Block – and thus driving customer adoption –, the greater the demand for BBT will be. Effectively, holders of BBT will act as sellers of listing power.

As The Block's popularity grows and more merchants join the platform, new features will be released, which will further increase the interest among buyers and sellers.

Participants in the upcoming token sale have the opportunity of gaining access to the marketplace at a significantly lower cost by pre-paying for the service in bulk, i.e. by acquiring many tokens in advance. These early token owners will be key figures for the future growth and operation of The Block.

6.1 TOKEN SUPPLY AND SPECIFICATIONS

A total of 100 million BitBoost tokens will be issued on the Ethereum blockchain using a smart contract. BBT will comply with the ERC20 standard and will be freely transferable on the Ethereum platform. **These tokens will be the only BBT ever issued.**

Of this total:

· 25 million BBT (25%) were available during the token pre-sale. A total of 4,862,878 BBT were sold in this initial funding round at 0,2 USD per token. Unsold pre-sale tokens will be added to the main token sale.

· 41 million BBT (41%) have been reserved for the main token sale and for future token sales and activities (see below).

· 12 million BBT (12%) will be reserved for future contributors (see below).

· 10 million BBT (10%) will be reserved for the founding team and partners, of which 8 million (8%) will not be tradeable for one year.

· 5 million BBT (5%) will be reserved for early angel token owners and advisors, of which 3 million (3%) will not be tradeable for one year.

· 5 million BBT (5%) will be reserved for existing NXT FreeMarket asset holders.

· 2 million BBT (2%) will be reserved for bounty campaigns.

As stated, 41 million BBT will be reserved for the main token sale. If part of these tokens are not sold during the main token sale, they will be used for future funding rounds and will be locked for a minimum period of one year. By that time, the platform is expected to be fully functional. The purpose is to maintain confidence in the project and to ensure that these tokens cannot be sold. This will be achieved using a smart contract or multi-signature escrow. These remaining tokens will be sold at a significantly higher price than the initial pre-sale tranche of 25 million and the main-sale tokens. They may specifically be used for:

1. The continuous business development of the BitBoost ecosystem after the launch of The Block, including introducing strategic or business users, or token swaps with other blockchain and distributed ledger projects.

2. Legal fees, compliance, accounting, and consultancy expenses necessary to ensure that BitBoost continues to operate in a lawful and commercially sound manner.

3. Various marketing and promotional activities for BitBoost, such as media exposure, events, and PR.

Compensation for future contributors to The Block from the 12 million tokens reserved for this purpose is at the sole discretion of the founding team. Such contributors may include partnerships, advisors, and providers of other services.

Details about future asset sales or related joint ventures to fund the development of The Block's advanced features will be announced in due course. The global promotion of the platform will be addressed at a later time, when all features outlined on the roadmap are implemented.

6.2 MAIN TOKEN SALE STRUCTURE

During the main sale, BBT will be sold for bitcoins (BTC), ether (ETH), WAVES, and ethereum classic (ETC). The main token sale will last 30 days, starting on October 10th 2017 at 14:00 UTC and ending on November 9th 2017 at 14:00 UTC. BBT will be generated starting at 0,40 USD per token and will end at 0,46 USD per token, using a descending discount, as shown:

• Phase One (7 days): Tuesday, 10 Oct - 0,40 USD per BBT - 13.043% discount
• Phase Two (7 days): Tuesday, 17 Oct - 0,42 USD per BBT - 8.696% discount
• Phase Three (7 days): Tuesday, 24 Oct - 0,44 USD per BBT - 4.348% discount
• Phase Four (9 days long):Tuesday, 31 Oct - 0,46 USD per BBT - no discount

Sale prices for BBT are set to USD amounts. However, tokens cannot be purchased in USD. Therefore, the BBT token price will be changed daily to accurately reflect the USD equivalent, using Bitstamp. BBT will be distributed after the end of the main sale.

6.3 ALLOCATION OF FUNDING

All proceeds collected from the BitBoost token sale will be used to finance the continuous development and marketing of The Block. The approximate allocation of the funds will be as follows: development and operations (50%), marketing and promotion (40%), and legal contingency (10%).

- Major expenses include:
- Salaries for the BitBoost development team,
- Development outsourcing expenditure,
- Salaries for administration and other supporting staff,
- Cost of servers, office, tools, and software,
- Marketing and promotion expenditure,
- Fees for advisors related to the project, and
- Overhead.

In the first phase of the project, the majority of BitBoost's costs will be related to the completion of the beta version with all features outlined in the roadmap, payments for caching servers, operations, and all infrastructure necessary for testing. Additionally, funds will be required to expand The Block's user base through marketing, promotion and business relationships, as well as for providing a legal contingency fund.

7. CONCLUSION

With The Block, BitBoost aims to realise the vision of a completely decentralised e-commerce platform, powered by Ethereum's smart contracts and cryptocurrency payments. Such a C2C marketplace has significant advantages over centralised platforms in terms of freedom, privacy, and cost. It can never be shut down, can never go offline, and listing information cannot be lost. Users remain private, if they wish to do so. The Block can never be censored, and users cannot be prevented from buying or selling. Payments are processed without the interaction – and therefore the costs – of centralized payment platforms.

At present, there exists no C2C e-commerce platform that provides these properties. BitBoost has worked on a solution to this challenge for three years, and now has a functional beta version that is ready for release, testing, and further development. The Block achieves a balance between leveraging the freedom of blockchain protocols and cryptocurrency payments, and maintaining user safety and security within a decentralised marketplace. This is engineered via escrow contracts, filters, and a reputation system.

Ease of use and accessibility are the major drivers for widespread adoption. In terms of user experience, The Block scores well compared to existing e-commerce platforms, offering a clean user interface and powerful instant-search tools. Everybody can join the marketplace, and there are no entry barriers. It is not necessary to be an experienced cryptocurrency user. Blockchain downloads are optional. ETH for customer payments and BBT for listing fees can easily be obtained from within The Block's integrated wallet.

BitBoost is made up of a global team of highly talented members who already have experience in building live decentralised marketplaces.

Paul Mahone
Founder and CEO

Paul, based in Lugano, Switzerland, has worked with various electronic marketplaces since 1992. He is one of the developers of the NXT FreeMarket, and has been an entrepreneur since founding a micro machine company in Los Angeles in the 1990s. He served as a Director for Molecular Robotics, the first nanotechnology company listed on Nasdaq. Paul is a specialist in Node.js, Angular, SQL, and user interface design. Paul's employment history includes the Japanese government, Harvard University, and the University of Southern California. Paul is a graduate of Harvard University, and he holds two master's degrees.

Andrew Lekar
Founder and lead developer, back-end

Andrew, based in Chelyabinsk, Russia, is an expert blockchain developer, with extensive experience in both the Ethereum and NXT blockchains. He is a specialist in C/C++, Java, JavaScript, Erlang, databases, encryption, and security. He is one of the developers of the NXT FreeMarket, a decentralized marketplace built on the NXT blockchain. Andrew has built all the Ethereum smart contracts that power The Block, and has created an open-source, ring signature-based mixing contract for Ethereum. He holds a master's degree in Computer Science from South Ural State University.

Samuele Maran
Founder and CFO

Based in Padua, Italy, Samuele is an experienced project manager and financial expert. He is in charge of customer relations. Being the responsible IT-builder for large residential property projects, he has vast experience in managing all bank, customer, and community relations as well as coordinating complex projects and heterogeneous teams. Samuele is a graduate of the Ca' Foscari University of Venice. He holds a master's degree in Business Administration and is a certified accountant.

Tori Arcuri
Director of operations

Tori has been a business owner and consultant for 20 years, specializing in branding and logistics. At BitBoost, she will work to ensure operations efficiency and effectiveness, developing BitBoost into a thriving business, and putting into practice our mission to redefine e-commence. Tori is a blockchain enthusiast and believes innovations like The Block will contribute to a fair and vibrant future for us all.

Álvaro Rodriguez
Director of marketing

Álvaro is a digital strategy and e-commerce specialist. A native of Spain and based in Switzerland, Álvaro holds a Ph.D from University of Santiago di Compostela and an MBA from ESIC. He brings years of digital communication experience to the BitBoost team.

Alessandro Tozzi
Community manager and start-up advisor

Alessandro is Technology Transfer Director for the Boston Entrepreneurship Center (BEC) and oversees projects technology transfer and implementation for several young startups, including spin-offs of the engineering department of BEC. He manages the marketing activities and public relations of BEC with social organizations and academic institutions in Europe and the USA. Alessandro is also a project manager, entrepreneur, and blockchain enthusiast. He has served as advisor and staff member in successful blockchain projects.

Maksim Sergeev
Lead developer, front-end apps

Max is a MEAN stack expert based in Moscow, and is highly proficient in the technologies behind The Block, including Angular 2, TypeScript, Node.js, and Electron. His skills in user experience and user interface design give The Block its unique and distinctive look. Max has already successfully completed a large number of challenging projects and is continuously expanding his impressive skills.

Dmitry Petrov
Developer, front-end desktop apps

Dmitry is a meticulous and passionate developer, fluent in over a dozen languages including Node.js, Javascript, and Angular. He began in front-end development, then moved on to full stack, and now assists with coding The Block for macOS, Windows, and Linux apps. He's very interested in blockchain technology and is excited by all the possible applications. Dmitry lives in Moscow, and speaks both Russian and English.

Moshe Malka
Developer, mobile & web apps

Moshe is a software engineer and blockchain enthusiast based in New York. He is a seasoned MEAN stack developer who designs, develops, and integrates cutting-edge frameworks using Javascript and Python. Moshe applies his deep knowledge of dynamic web projects to The Block, integrating our app with Status.im, a mobile Ethereum OS. Through his efforts, The Block will be made available to more users. Moshe speaks English, Hebrew, and Spanish.

Riccardo Scanavacca
iOS developer

Riccardo is a mobile app developer based in London, and is building the iOS version of The Block. A self-taught programmer and keen technologist, he strongly believes the future will rely on distributed ledger technology and its various applications. When he is not developing new ideas and opportunities, he works on internal iOS apps for the BBC.

Eva Fernández Arias
Social Media Manager - Twitter

Eva has worked as a Social Media Manager and Content Creator for more than 5 years, as a part of various agencies and media. Now, she is our Twitter account manager, creating content and posting daily to keep our supporters up on all the latest cryptocurrency, blockchain, and BitBoost news. Eva helps our users stay informed and connected to the changing world! She also assists with customer support.

Andrea Greco
Webmaster

Andrea is knowledgeable in all aspects of web design and engineering, having been a web developer for over 9 years. He is proficient in HTML5, CSS3, JS, and PHP. But, Andrea is not only valued for his tech skills. He studied modern languages and then worked in tourism in both Ireland and Italy. He speaks Italian, English, and Spanish, and currently lives in Thailand. This love of world cultures, combined with his work ethic and knowledge base, makes Andrea an ideal fit for BitBoost.

Yessin Schiegg
Advisor

Yessin is a financial, legal, and regulatory expert, and has served as an compliance advisor to the Ethereum Foundation. Based in Switzerland, he possesses a broad network in the crypto ecosystem. He is the CFO of Alpha Associates AG, an independent private equity manager and advisor based in Zurich, Switzerland. He widely promotes blockchain technology and believes its applications will serve society globally. His skills are start-up advisory, private equity, and finance. Yessin holds a master's degree in Finance from the University of St. Gallen. Moreover, he is a Swiss Certified Public Accountant and holds the CFA and CAIA charters.

Tommaso Bonanata
Advisor

Tomasso is a seasoned profesional in the fields of Market Analysis and Financial Engineering, He brings his professional know-how from the traditional financial markets. He worked as an Equity Fund Manager for Julius Baer and GAM for over 9 years, focusing on Emerging and Frontier regions. His passion for Digital Assets and Blockchain Technology started in late 2013; today he is a full-time investor and advisor in the crypto space, bridging the gap between the legacy and digital worlds.

Ian Scarffe
Advisor

Ian's experiences in the business world have allowed him valuable insight into every working aspect of an organization and the minds of millions of customers. His outstanding entrepreneurial and commercial acumen, his entrepreneurial innovation and motivation, the capacity to work at strategic levels, interpersonal, communication and negotiation skills, his passion for customer service, wealth of knowledge, and vast amounts of hands on experience in almost every role will prove to be valuable assets for BitBoost.

Carlos M. Parada
Advisor

Carlos is a multifaceted blockchain evangelist and designer who embodies a variety of skills, from architectural drawing and visualization to 3D digital prototyping, website/app design, UI/UX development, etc. and owner of BEYOND VISUALS studio. He has collaborated with international renowned brands including Hilton Hotels Group and Kompas Gramedia. In the crypto scene he's known for developing the front-end of the first superNET and Waves platform Lite Client versions as well as their initial branding among many others.

9. DISCLAIMER

This document is for informational purposes only and does not constitute an offer or solicitation to sell shares or securities in BitBoost, The Block, or any related or associated company.

Any such offer or solicitation will be made only by means of a confidential offering memorandum and in accordance with the terms of all applicable securities and other laws.

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Risk disclosures will be made available at https://www.bitboost.net/legal/ prior to the beginning of the token sale.

ANNEX

INTERNET, BLOCKCHAIN AND ETHEREUM

Without doubt, the internet has revolutionized how humans live, communicate, think, and shop – how they live their everyday lives. It has turned their very existence upside down. Today, most humans take the internet for granted and cannot even imagine their lives without it. The internet was born nearly five decades ago, and since then, technology has rapidly advanced by huge leaps. About 15 years ago, only 12% of all people owned mobile phones. Now, more than six out of ten persons worldwide use a mobile phone. About 15 years ago, one third of the population in developing countries lived in extreme poverty, compared to less than 15% today. Facebook, which now has nearly 1.5 billion users, had not even been launched then. In another fifteen years' time, who knows how much technological innovation and developments society will see, and what changes this will bring?

Cryptocurrencies offer a fundamentally different way of approaching money and conducting online commerce. The development of blockchain-based money solves a number of problems inherent in the current financial system. While it is not a panacea, a properly implemented e-commerce platform with integrated cryptocurrency payments has extensive advantages.

Bitcoin

The first cryptocurrency was the bitcoin. Articulated in Satoshi Nakamoto's 2008 white paper, Bitcoin deals with the «double spending» problem through the use of a shared ledger that is maintained by a large number of network nodes. By contriving a system in which it is computationally expensive to add a block of transactions to the ledger, but easy for anyone to verify it, Bitcoin makes it unlikely for any member of the network to succeed in submitting a fraudulent transaction – and it is expensive to try to do so. Thus miners – those tasked with upholding the security of the network – are better off acting honestly and maintaining the integrity of the ledger.

Financial independence

Nakamoto's implementation of his white paper effectively removed the need for a trusted third party to act as a middleman in online transfers. This enabled real peer-to-peer monetary transactions online for the first time ever: a remarkable breakthrough, and a task that many experts had believed could not be achieved. Money, which had been centralised for millennia in seigniorage, and for decades in terms of the payment system, could once again become purely a tool of commerce rather than a way to extract value and exert control. Because Bitcoin transactions take place directly – from sender to recipient, and without the involvement of a centralised third party – they cannot be censored. Once a transaction has been accepted into the ledger, there is no way of reversing it. This has a simple but powerful implication: if you want to send someone money, you can. There is no authority that can block or reverse the transfer. Bitcoin's financial system restores full autonomy to its users.

Because Bitcoin and other cryptocurrencies use a blockchain to secure transactions, there are no middlemen to keep accounts, and therefore, there are no single entities that can charge fees for the service. Miners collectively process transactions and are rewarded for verifying a block with both new coins (block rewards, currently set at 12.5 Bitcoins per block) and the smaller fees incurred with each transfer. Unlike the legacy banking system, Bitcoin does not recognise geographical borders. Transferring funds to a neighbour on the other side of the road is as fast and efficient as sending money to the other side of the world. While banks and remittance services tend to charge significant flat fees as well as unfavourable exchange rates between currencies, Bitcoin's fees are fixed and low by comparison. Other blockchain protocols tend to charge even lower fees.

Privacy

Bitcoin's use of a shared ledger to facilitate peer-to-peer transactions also has implications for privacy. The Bitcoin ledger is fully transparent by design, meaning that anyone can trace transactions from one address to another, right back to the block in which the coins were first created. However, because addresses are essentially strings of random alphanumeric characters, it is not inherently obvious to whom the address belongs. Bitcoin is, strictly speaking, pseudonymous rather than anonymous. While data may be leaked in a variety of ways that associate a Bitcoin address with other personal information to reveal the owner's identity, by using best practices it is possible to use Bitcoin privately. The lack of a trusted intermediary means that no information needs to be registered to use a Bitcoin wallet. There is no administrative authority to control transactions or to collect user data.

Ethereum

Bitcoin offers a huge leap forward in the fields of online financial privacy and independence, but it is limited in its scope. Bitcoin does one thing very well: it transfers value securely. Although Bitcoin is the largest cryptocurrency, adoption has been limited, and a large part of the ecosystem's economic activity is accounted for by roles that support the currency itself, such as mining and trading. Relatively few merchants have taken the step of integrating Bitcoin payments. This is partly because they do not believe the disadvantages of the status quo are grave enough to switch to something viewed as experimental, that still has a significant technical overhead, and partly because a broad user base does not exist yet. Bitcoin has been adopted on the dark web, where its relative privacy and freedom from intervention have made it the currency of choice for online drug markets. However, Bitcoin only addresses one side of the e-commerce transaction: the buyer's. Online stores require the involvement of a third party, which holds a database of products, merchant information, and transaction histories – with all the coupled risks for privacy.

The Ethereum platform has the potential to disrupt e-commerce at least as extensively as Bitcoin has, and probably much more dramatically. While BTC acts as an ideal medium of transfer, Ethereum opens up the possibility of a computer that performs operations across its global network [https://github.com/ethereum/wiki/wiki/White-Paper]. This has the potential to decentralise not only the means of payment, but also the infrastructure for the e-commerce platform itself.

Developed by the Ethereum foundation, a Swiss non-profit organisation, Ethereum upends the traditional approach to offering services on the internet. Instead of building server farms across the world – staffing them, maintaining them, and securing them – Ethereum makes it possible to build a global computing infrastructure by using a type of coding called «smart contracts». These contracts allocate computing resources across the blockchain and reward those who use their own hardware to support the calculations required. With the right skill and hardware, anyone can join this effort by creating an Ethereum node and be compensated for their contribution, all without a central coordination authority. Ethereum works in a fully decentralised manner, just as the Bitcoin blockchain does. Smart contracts are pieces of code, whose execution is ensured by the network as a whole, in the same way that Bitcoin's transfers and records of funds are policed by the whole network. This means that applications that run automatically can be built, and the reliability of the services they offer is guaranteed because there is no single point of failure.

Ethereum's smart contracts therefore offer the possibility of an e-commerce platform that has unique properties: privacy for both the buyer and the seller, complete freedom from censorship and interference, and very low fees for users.

LIST OF EXHIBITS

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