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Blockchain, Bitcoin, Crypto Assets and ICOs: Emergence of a New Asset Class

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BLOCKCHAIN HOLDING

DLT | CAPITAL

What do we do?

Workshops, trainings, research projects, Ethereum prototypes, startups

For whom?

Banking, mobility, Industrie 4.0, internet of things, crypto assets, initial coin offerings

Dates

Workshop: How do ICOs work? (Dec. 2017)

Crypto Assets Conference 2018 (Feb. 2018)

Blockchain Certificate Program (May 2017)

Crypto Funds: Investment Vehicles (May 2018)

Crypto Startup Summer School (Feb. 2018)

Contact

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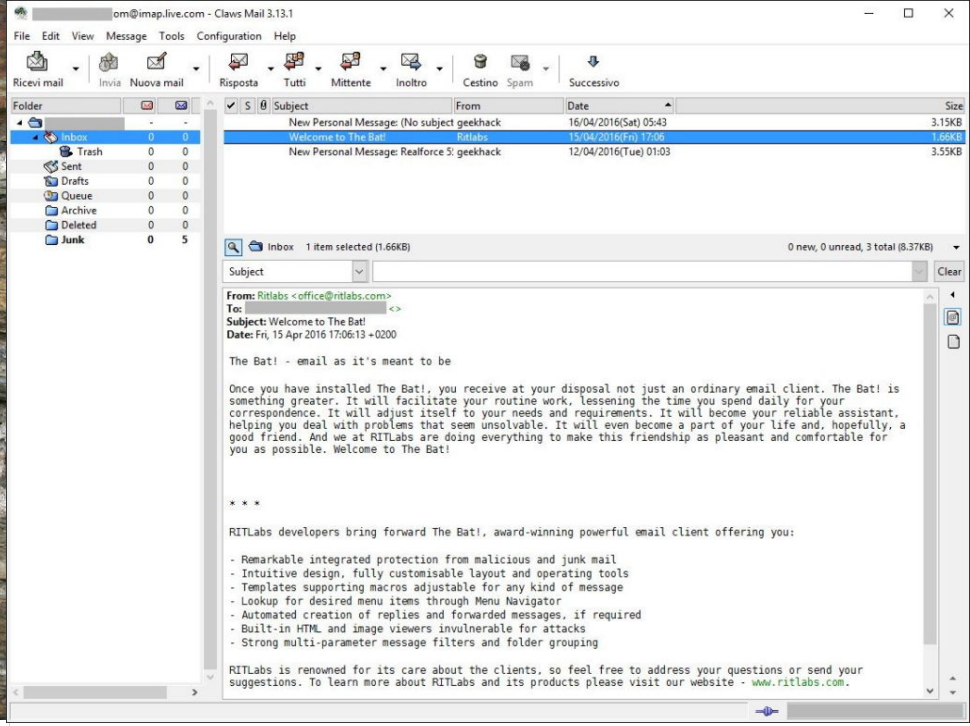
POST-BRIEFKASTEN
Leerung täglich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File Edit View Message Tools Configuration Help
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Folder
Inbox 0 0
Trash 0 0
Sent 0 0
Drafts 0 0
Queue 0 0
Archive 0 0
Deleted 0 0
Junk 0 5
Subject From Date Size
New Personal Message: (No subject geekhack 16/04/2016(Sat) 05:43 3.15KB
Welcome to The Bat! Ritlabs 15/04/2016(Fri) 17:06 1.66KB
New Personal Message: Realforce 5: geekhack 12/04/2016(Tue) 01:03 3.55KB
Inbox 1 item selected (1.66KB)
0 new, 0 unread, 3 total (8.37KB)
Subject
Clear
From: Ritlabs <office@ritlabs.com>
To:
Subject: Welcome to The Bat!
Date: Fri, 15 Apr 2016 17:06:13 +0200
The Bat! - email as it's meant to be
Once you have installed The Bat!, you receive at your disposal not just an ordinary email client. The Bat! is something greater. It will facilitate your routine work, lessening the time you spend daily for your correspondence. It will adjust itself to your needs and requirements. It will become your reliable assistant, helping you deal with problems that seem unsolvable. It will even become a part of your life and, hopefully, a good friend. And we at RITLabs are doing everything to make this friendship as pleasant and comfortable for you as possible. Welcome to The Bat!
* * *
RITLabs developers bring forward The Bat!, award-winning powerful email client offering you:
- Remarkable integrated protection from malicious and junk mail
- Intuitive design, fully customisable layout and operating tools
- Templates supporting macros adjustable for any kind of message
- Lookup for desired menu items through Menu Navigator
- Automated creation of replies and forwarded messages, if required
- Built-in HTML and image viewers invulnerable for attacks
- Strong multi-parameter message filters and folder grouping
RITLabs is renowned for its care about the clients, so feel free to address your questions or send your suggestions. To learn more about RITLabs and its products please visit our website - www.ritlabs.com.


100
150
20
10
5
5 EURO

BLOCKCHAIN

Ranking of crypto currencies

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#	Name	Market Cap	Price	Volume (24h)	Circulating Supply	Change (24h)
1	Bitcoin	$74.556.420.554	$4.286,86	$4.009.059.747	17.391.837 BTC	-0,56%
2	XRP	$16.203.967.479	$0,401811	$532.690.568	40.327.341.704 XRP *	-1,40%
3	Ethereum	$12.621.354.903	$122,06	$1.621.916.685	103.398.901 ETH	0,30%
4	Bitcoin Cash	$3.589.178.276	$205,39	$100.938.119	17.475.300 BCH	-0,57%
5	Stellar	$3.381.208.477	$0,176565	$78.017.248	19.149.936.945 XLM *	-1,69%
6	EOS	$3.246.309.504	$3,58	$668.776.648	906.245.118 EOS *	0,68%
7	Litecoin	$1.894.750.220	$31,96	$357.982.602	59.292.038 LTC	-0,13%
8	Tether	$1.772.790.906	$0,981383	$2.948.528.931	1.806.421.736 USDT *	-0,45%
9	Cardano	$1.090.253.405	$0,042051	$16.762.297	25.927.070.538 ADA *	-2,05%

Vier Wellen von Krypto-Investoren: F-G-H-I

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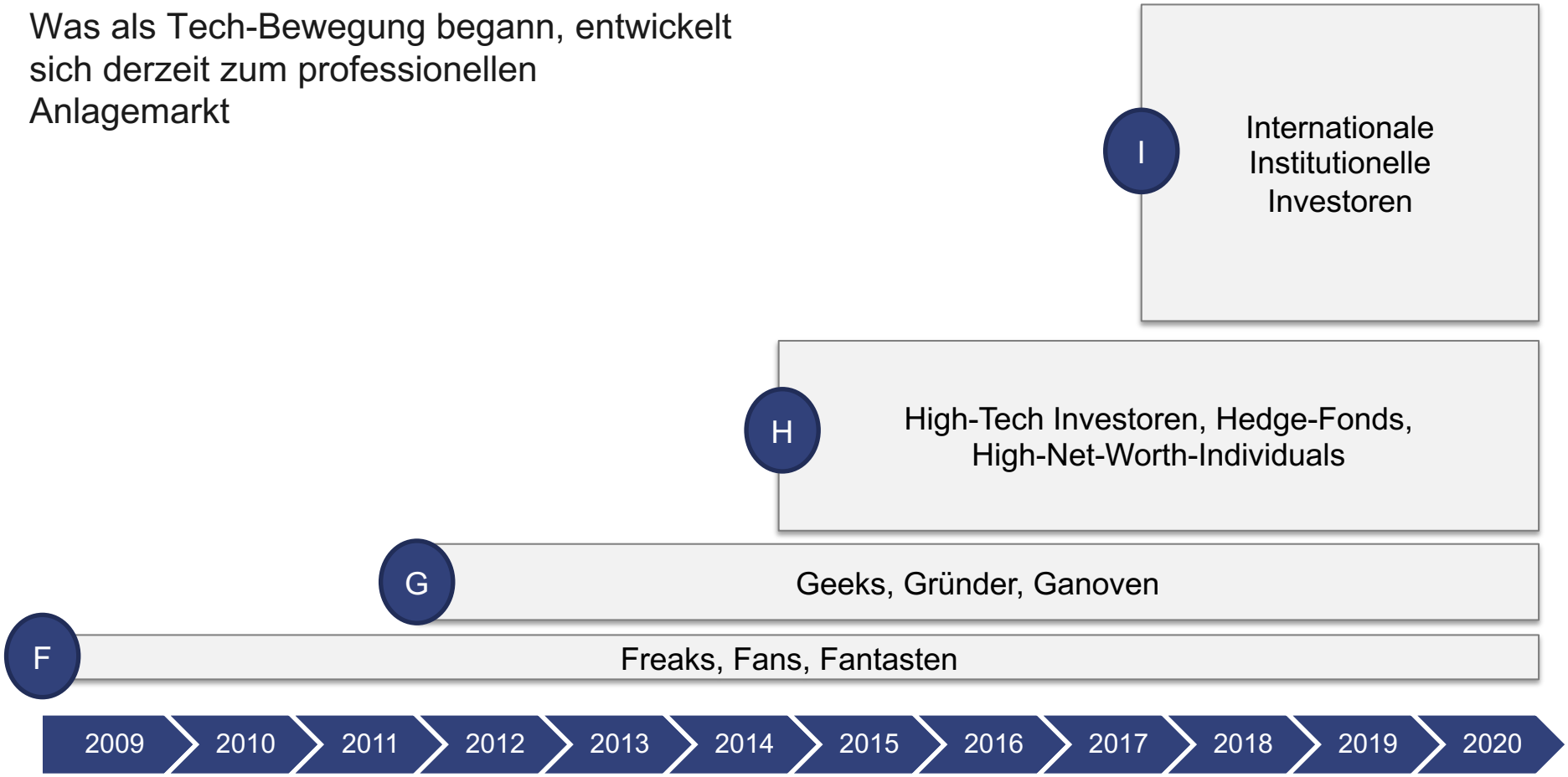
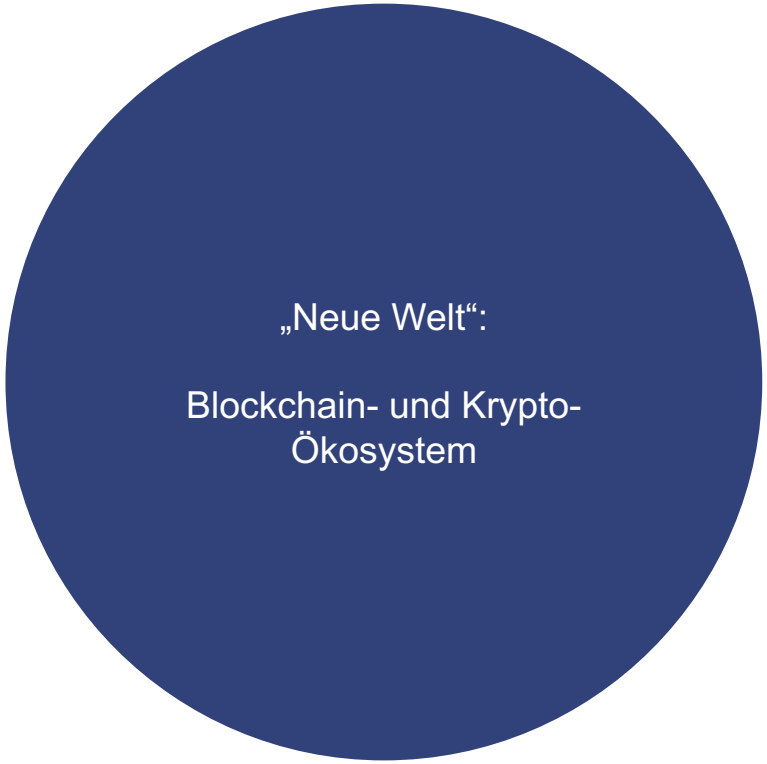
Was als Tech-Bewegung begann, entwickelt sich derzeit zum professionellen Anlagemarkt



Source: Postera Capital (2017)

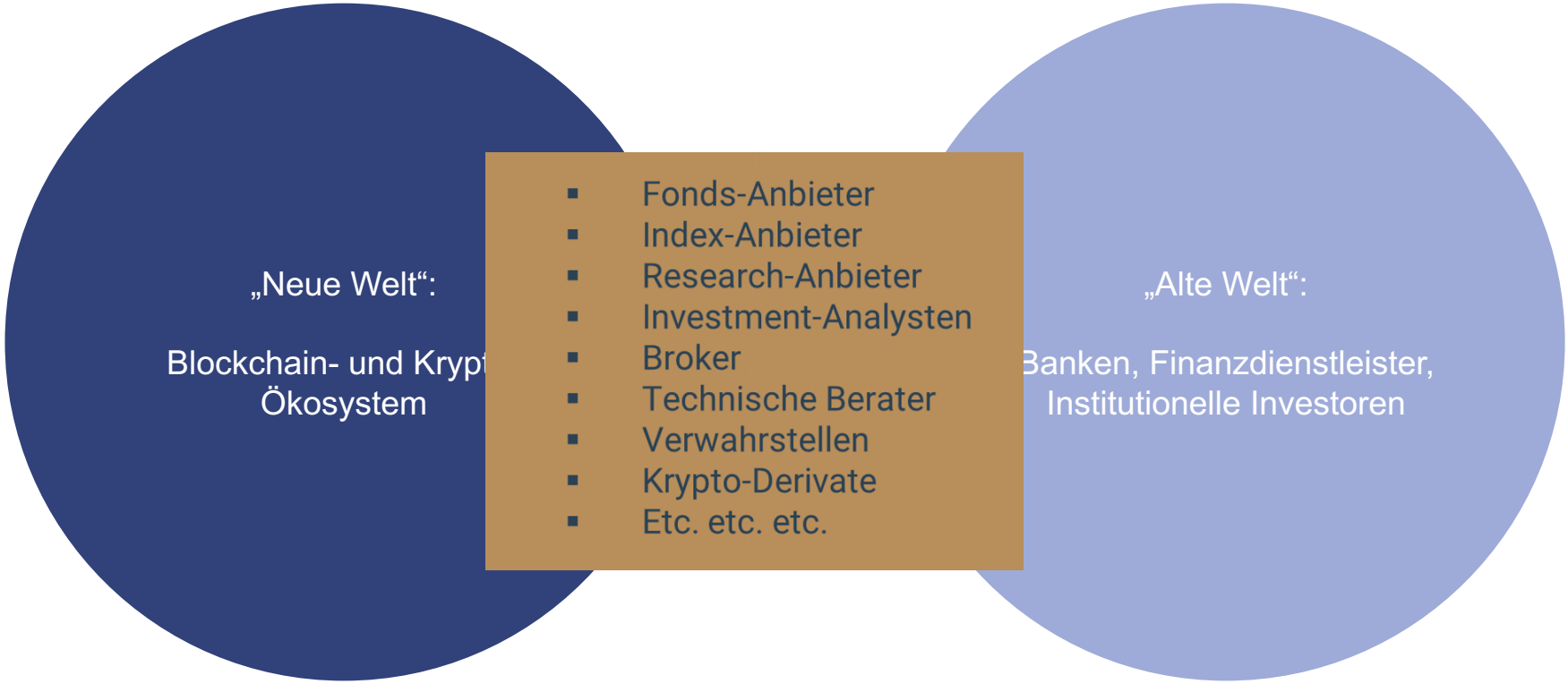
Bis vor kurzem waren „alte“ und „neue“ Welt getrennt

Das Blockchain- und Krypto-Ökosystem ist großenteils außerhalb etablierter Strukturen gewachsen



Source: Postera Capital (2017)

An der Schnittstelle zwischen „neuer“ und „alter“ Welt entsteht eine Infrastruktur an Dienstleistern, die professionellen Investoren investitionsfähig machen



Source: Postera Capital (2017)

DLT infrastructures will allow worldwide movement of assets

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Worldwide platform for asset transfers (e.g. Ethereum)

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Worldwide platform for asset transfers (e.g. Ethereum)

Payment token to pay for asset transfers (e.g. Ether)

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Worldwide platform for asset transfers (e.g. Ethereum)

Payment token to pay for asset transfers (e.g. Ether)

or executing all business processes (e.g. emission)

A simple smart contract

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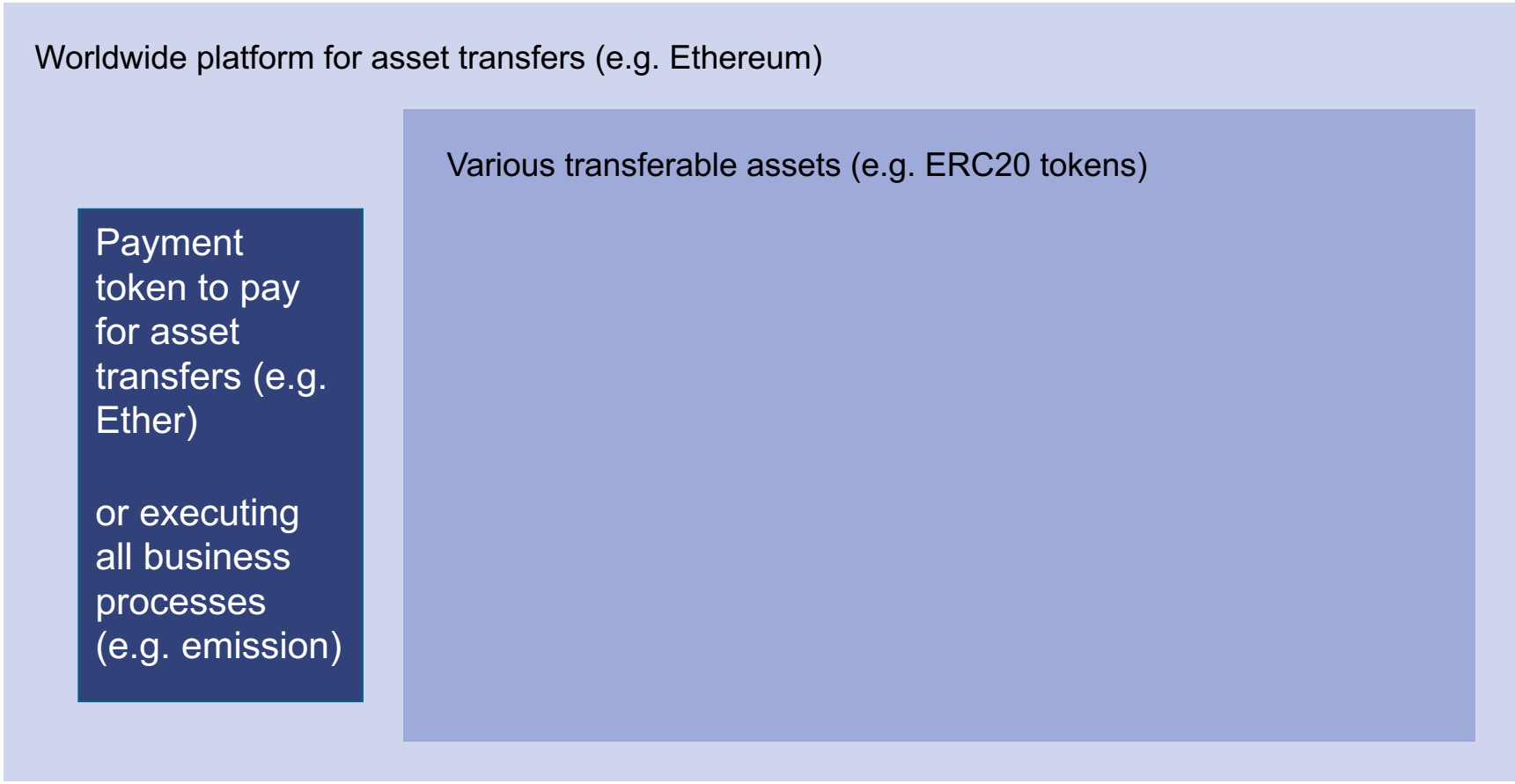
Lister - [C:\00\Token.sol]

Datei Bearbeiten Optionen Hilfe 37 %

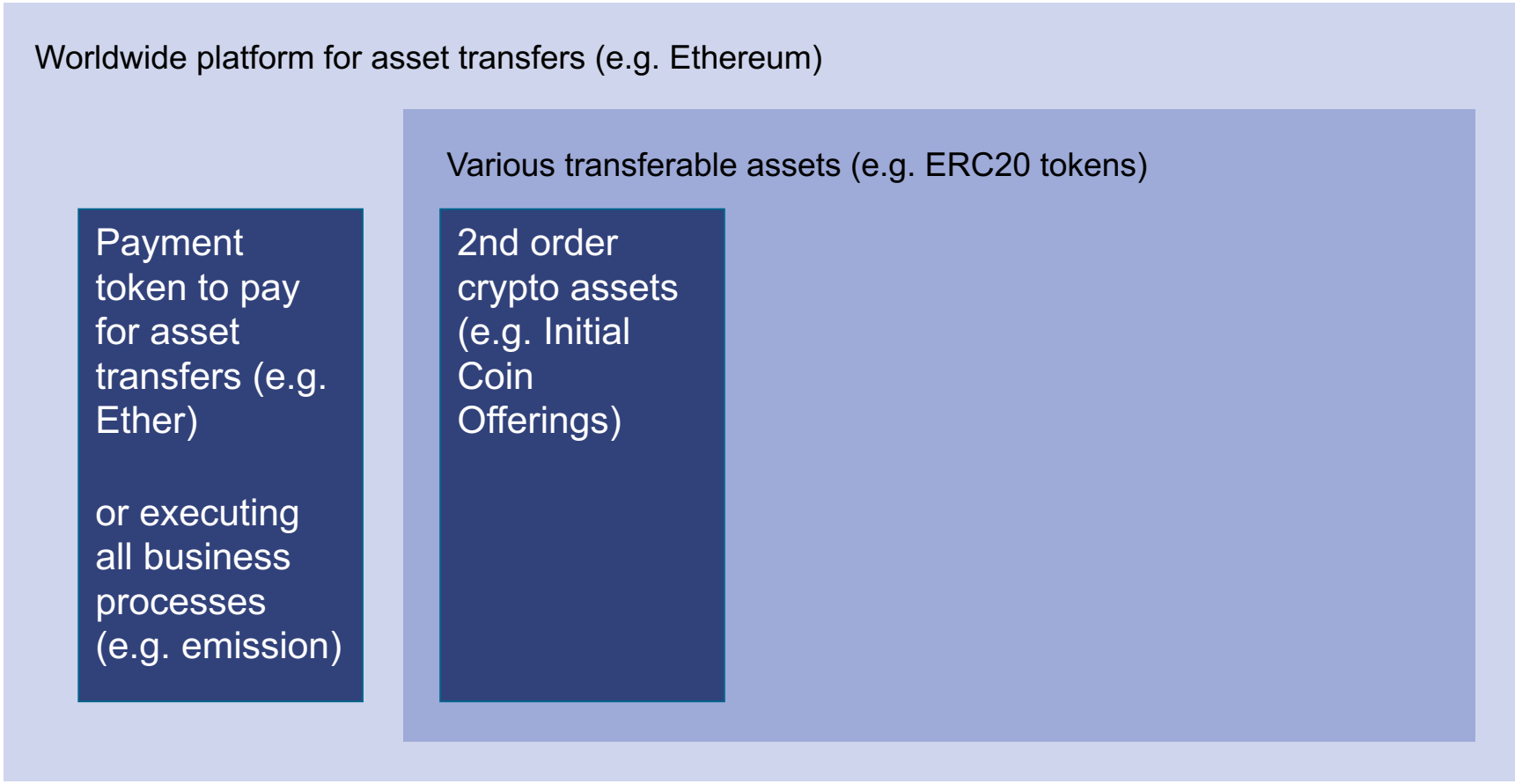
```
    // Initialize contract without initial supply
    function SimpleToken() public {}

    // Send coins
    function transfer(address _to, uint256 _value) public returns (bool success) {
        require(_to != 0x0);
        balanceOf[msg.sender] = balanceOf[msg.sender].sub(_value);
        balanceOf[_to] = balanceOf[_to].add(_value);
        Transfer(msg.sender, _to, _value);
        return true;
    }

    function transferFrom(address _from, address _to, uint256 _value) public returns (bool success) {
        require(_to != 0x0);
        balanceOf[_to] = balanceOf[_to].add(_value);
        balanceOf[_from] = balanceOf[_from].sub(_value);
        allowance[_from][msg.sender] = allowance[_from][msg.sender].sub(_value);
        Transfer(_from, _to, _value);
        return true;
    }

    // Approve that others can transfer _value tokens for the msg.sender
    function approve(address _spender, uint256 _value) public returns (bool success) {
        require((_value == 0) || (allowance[msg.sender][_spender] == 0));
        allowance[msg.sender][_spender] = _value;
        Approval(msg.sender, _spender, _value);
        return true;
```

This functions transfers an asset

DLT infrastructures will allow worldwide movement of assets



DLT infrastructures will allow worldwide movement of assets



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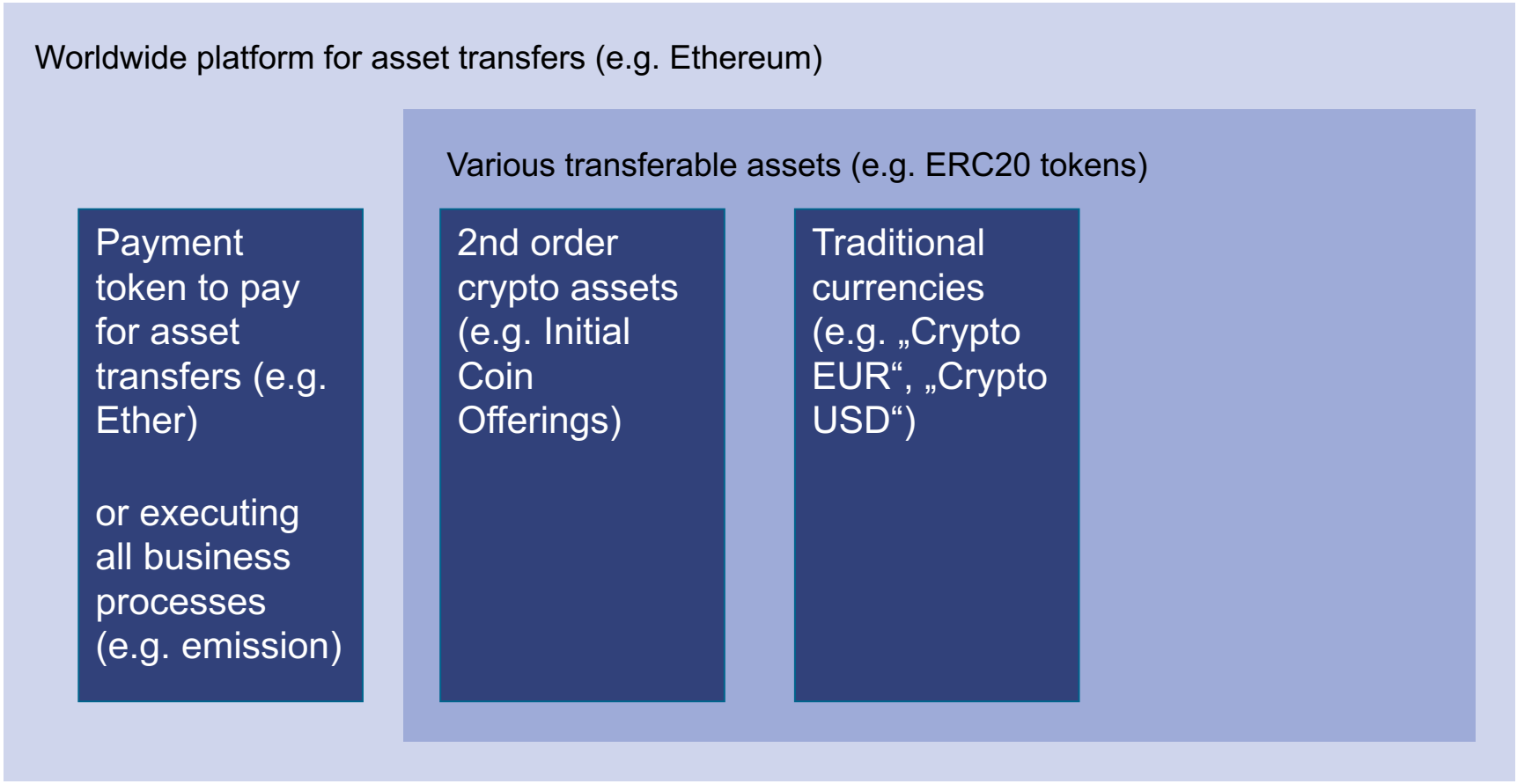

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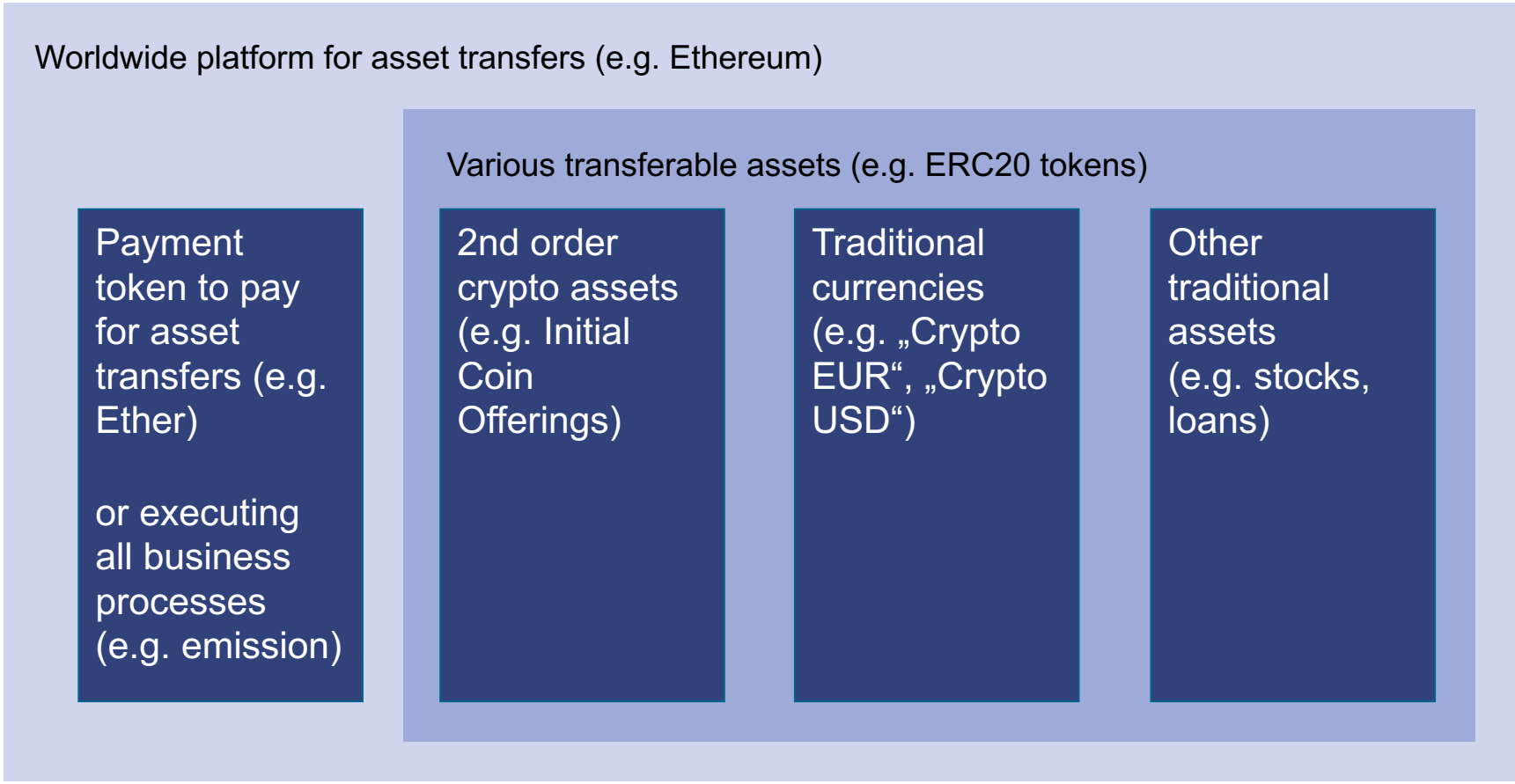

DLT infrastructures will allow worldwide movement of assets

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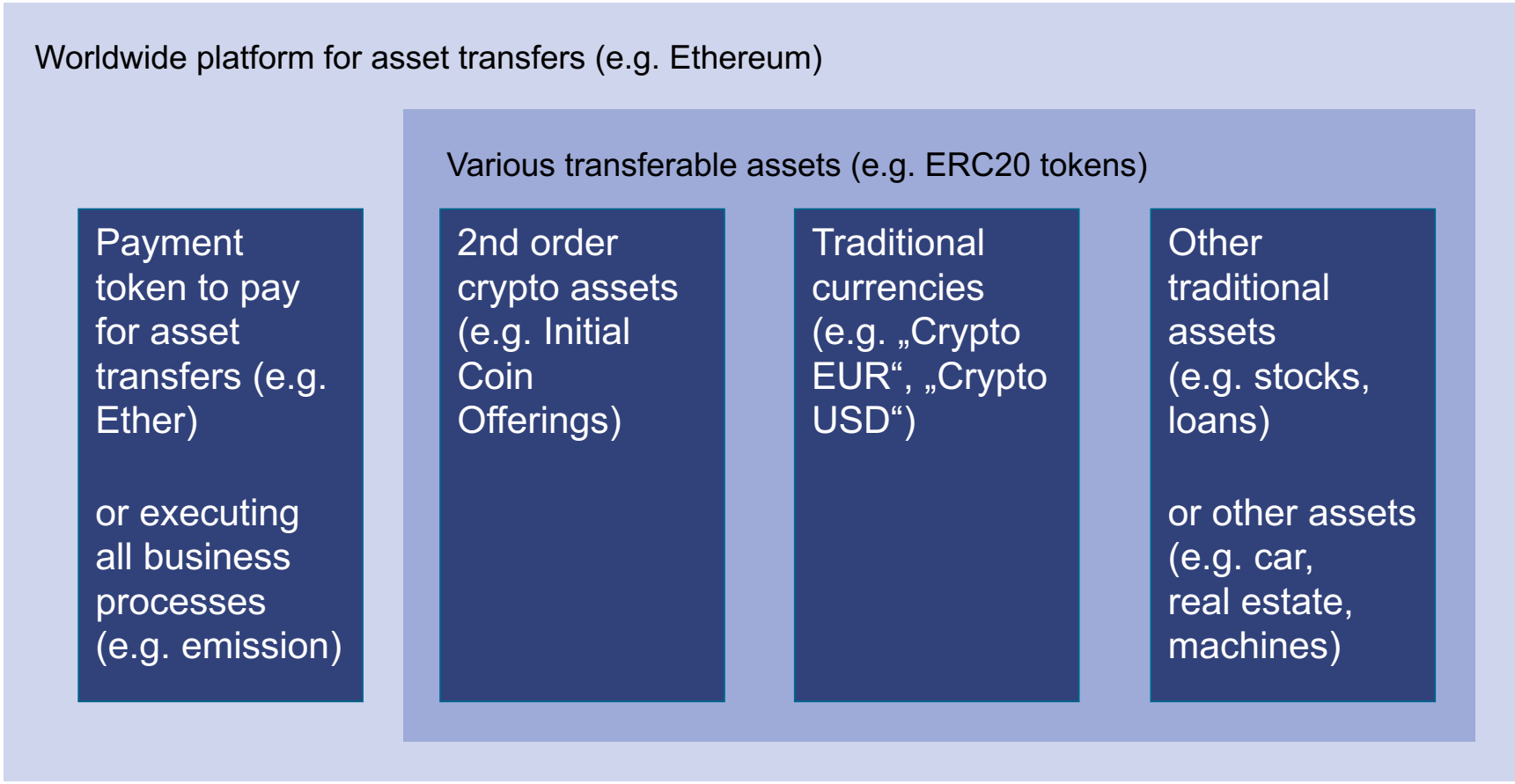

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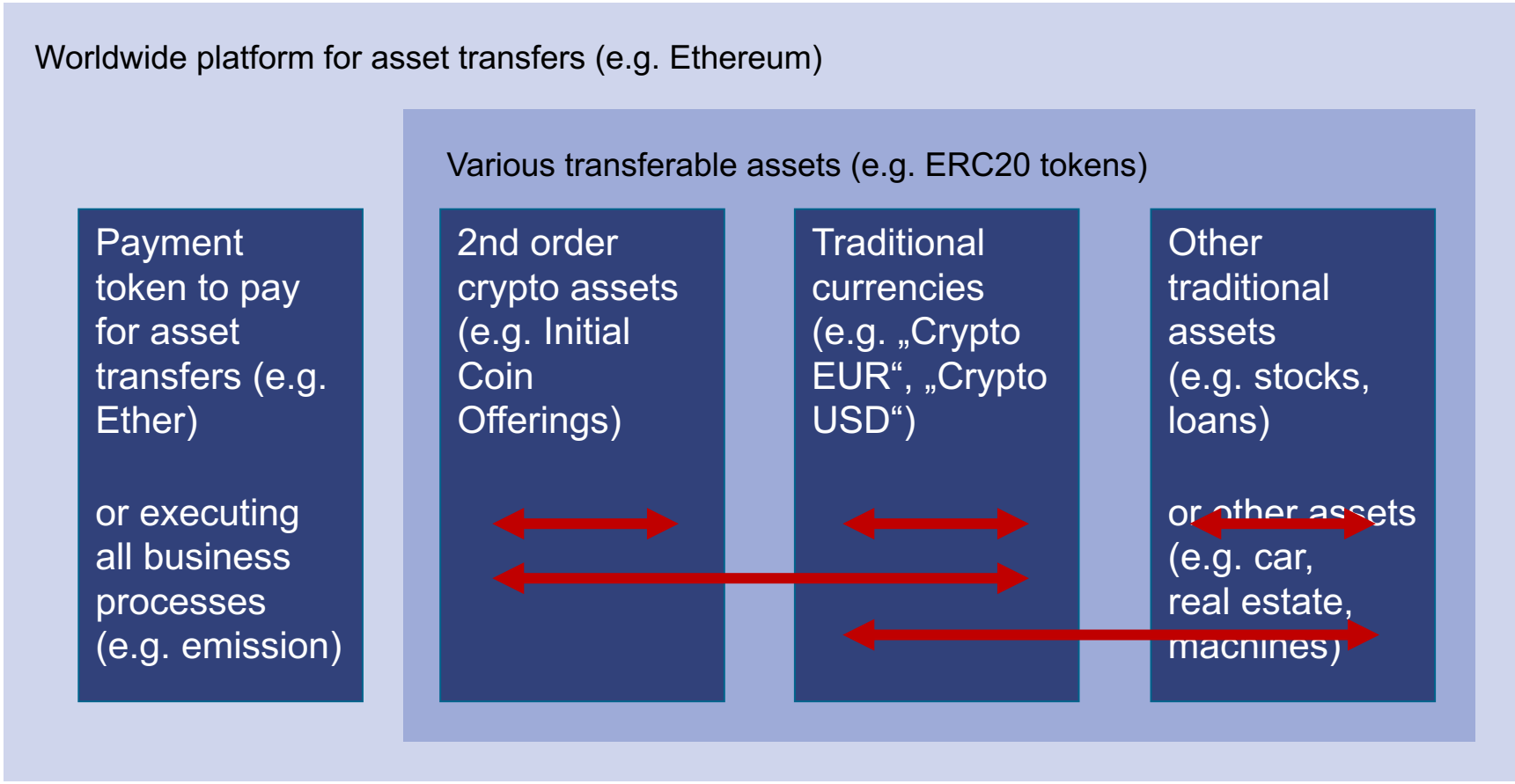

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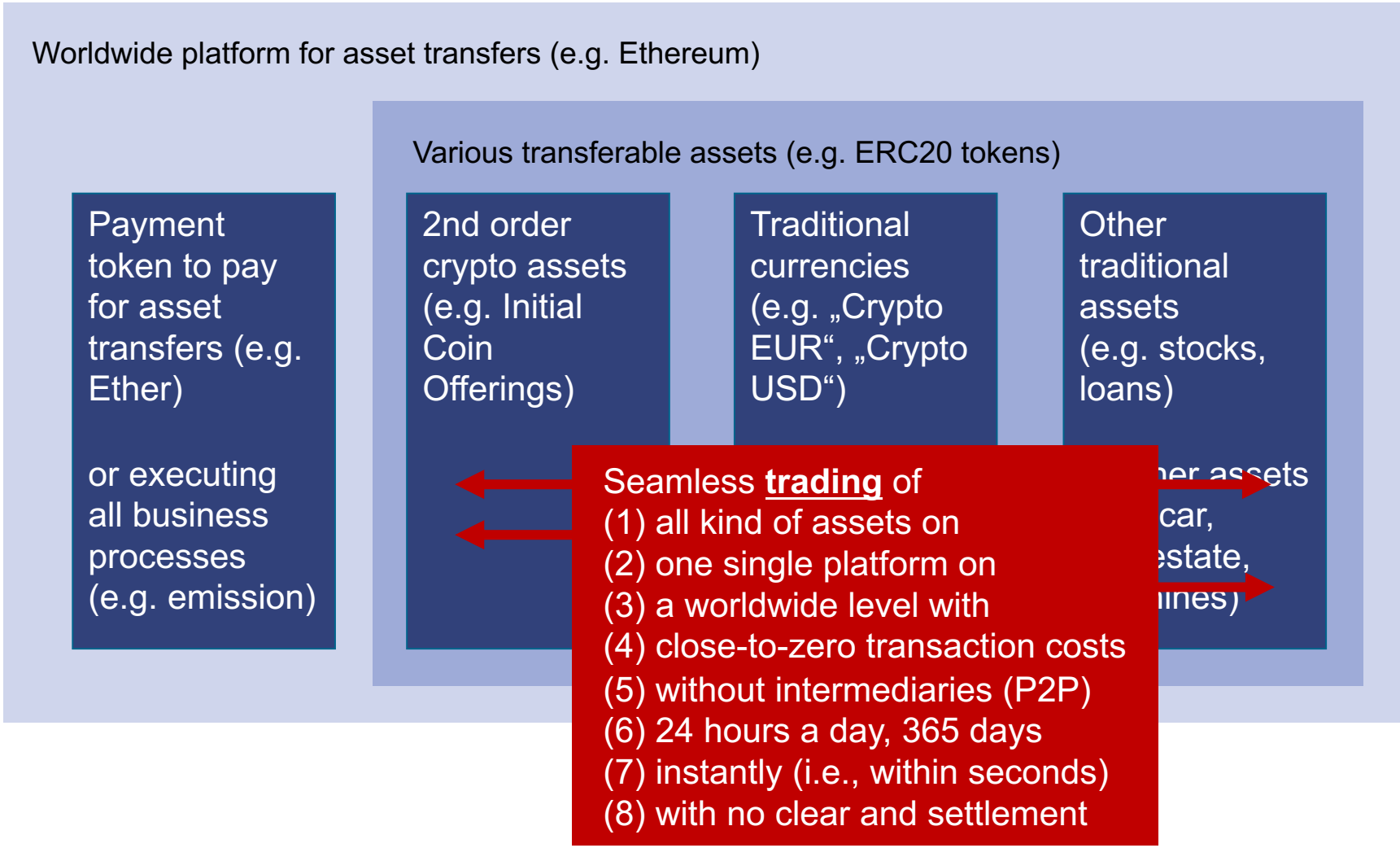

ITSA works on standards for the global token economy, providing three helpful tools for market players

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International Token Standardization Association (ITSA) e.V. i.Gr.

Promoting the development and implementation of a standardized approach for the **identification**, **classification** and **analysis** of blockchain- and DLT-based cryptographic tokens

Identification

International Token Identification Number (ITIN)

Assigning a 9-digit alphanumeric identifier to all types of cryptographic tokens for an unambiguous identification, decreased operational risk and increased transparency

Classification

International Token Classification (ITC)

Creating a flexible and extendable framework for the classification of all kinds of cryptographic tokens according to various different dimensions (economic, technological, legal, etc.)

Analysis

International Token Database (TOKENBASE)

Providing reliable qualitative and quantitative data on +800 cryptographic tokens from +30 exchanges for business and academia in varying granularity and with optional extensions by adjunct data providers

Currently the ITC includes four dimensions (version 1.0), covering economic, technological and legal aspects

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ITIN | ITC | TOKEN-BASE

1 Economic purpose

What is the economic purpose of the token?

- Token as a means of payment
- Token as a means of utility provision
- Token as a means of investment

2 Technological setup

Which layer of the distributed ledger is the token implemented on?

- Token is implemented on the DL itself
- Token is implemented by a protocol run on the DL

3 Legal claim

What right does the token provide its owner with?

- Token with no claim / legal right
- Token with relative right(s)
- Token with absolute right(s)

4 Industry

What kind of industry is the token used in?

- 20 industry classes & various sub-classes
- 3 major industry classes: Information; Finance and Insurance; Arts, Entertainment and Recreation

Each ITC dimension includes highly detailed classes, which can be broken down even further in the future

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Economic purpose

ITC Class: EP21

Payment token

Example: Bitcoin

Sub-classes:
- Unpegged payment token
- Pegged payment token (stable coin)

ITC Class: EP22

Utility token

Example: Ethereum

Sub-classes:
- Access token
- Governance token
- Settlement token
- Ownership token

ITC Class: EP23

Investment token

Example: KuCoin Shares

Sub-classes:
- Asset backed token
- Debt token
- Derivative token
- Equity token
- Fund token

Technological setup

ITC Class: TS41

Blockchain-/DL-native Token

Example: XRP

Sub-classes:
- Blockchain
- Tangle (DAG)
- etc.

ITC Class: TS42

Non-native Protocol Token

Example: Basic Attention Token

Sub-classes:
- ERC20 token
- etc.

Legal claim

ITC Class: LC31

No-Claim Token

Example: Bitcoin Cash

Sub-classes:
- Not existing yet

ITC Class: LC32

Relative Rights Token

Example: Binance Coin

Sub-classes:
- Not existing yet

ITC Class: LC33

Absolute Rights Token

Example: n.a.

Sub-classes:
- Not existing yet

Industry

ITC Class: IN09

Information

Example: EOS

Sub-classes:
- Advertising, Marketing & PR
- Media & Social Media
- IT and Telecommunications
- Data Processing & Analysis
- etc.

ITC Class: IN10

Finance and Insurance

Example: Stellar

Sub-classes:
- Payment Systems & Services
- Exchange, Trading & Settlement
- Alternative Finance
- Investment Services
- etc.

ITC Class: IN17

Arts, Entertainment and Recreation

Example: FunFair

Sub-classes:
- Entertainment & Gaming
- Recreation, Leisure & Travels
- Betting & Gambling
- etc.

The ITC framework provides detailed definitions for the individual classes of each dimension

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Economic purpose

EP	Economic Purpose	What is the economic purpose [1] of the token?
EP21	Payment Token	A Payment Token is designed to be used as digital currency. As such, a Payment Token (should) fulfill the classic functions of money [2] (at least partially): (1) medium of exchange; (2) unit of account; and (3) store of value. In general, the usage of the token as means of payment is not limited to a specific use case or environment.
EP21D	Unpegged Payment Token	
EP21E	Pegged Payment Token (Stable Coin)	Pegged payment tokens e.g. fiat- or crypto-backed stable coins
EP21Z	Other Payment Token	
EP22	Utility Token	An Utility Token is intended to provide a certain sort of utility or right to the token holder within a clearly specified environment (e.g. decentralized network, third-party ecosystem, business relationship or jurisdiction).
EP22F	Access Token	An Access Tokens is an Utility Token whose primary purpose is to provide access to certain services, goods or resources that are offered in or through the environment that the token was created for.
EP22G	Governance Token	A Governance Token is an Utility Token whose primary purpose is to provide means or rights to participate in the governance of the environment that the token was created for (e.g. providing the right to vote on decisions concerning the decentralized network).
EP22H	Settlement Token	A Settlement Token is an Utility Token whose primary purpose is to serve as means for the settlement of transactions within the environment that the token was created for (e.g. purchase of goods or services). As such, a Settlement Token represents a means of exchange within the specified environment (e.g. decentralized network, third-party ecosystem or business relationship).
EP22J	Ownership Token	An Ownership Token is created for the purpose of managing and transferring the ownership of material or immaterial goods. Thus an Ownership Token could for instance represent an absolute legal right with regards to intellectual property or material objects within the environment of a certain jurisdiction, but also ownership of unique item within the environment of a decentralized network or computer game with no legally binding relative or absolute rights attached.
EP22Z	Other Utility Token	
EP23	Investment Token	An Investment Token is created as financial product or financial instrument for instutional or retail investors.
EP23K	Asset-backed Token	Asset-backed tokens e.g. tokens backed by commodities, loans, trade receivables
EP23L	Debt Token	Debt tokens e.g. tokens that mimic bonds
EP23M	Derivative Token	Derivative tokens e.g. tokens that mimic structered products, futures, options
EP23N	Equity Token	Equity tokens e.g. tokens that mimic stocks
EP23P	Fund Token	Fund tokens e.g. tokens that mimic fund shares
EP23Z	Other Investment Token	
EP99	Other Economic Purpose	

Current ITC sample classification of Bitcoin as to be found in TOKENBASE (version 1.0)

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Bitcoin (BTC)

Name: Bitcoin
Symbol: BTC
Rank: 1
Website: www.bitcoin.org

ITIN: TP3B-248N-Q
Github: https://github.com/bitcoin/
CMC ID: 1
CMC slug: bitcoin

Dimension	ITC class	Rationale
Economic purpose	**EP21D** Unpegged payment token	Free-floating crypto currency
Technological setup	**TS41** Blockchain-/DL-native token	Tokens are directly implemented on the blockchain
Legal claim	**LC01** No-claim token	Token does neither provide any claim against any counterparty nor an absolute right
Industry	**IN1001** Payment Systems & Services	Token is intended as an universal means of payment
Future work	*Future work*	*Future work*

ITC Class EP21E: Payment Token > Pegged Payment Token (Stable Coin)

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token_symb	token_label	token_mining	token_supply_c	token_supply_to
USDT	Tether	Not mineable	2,437,000,000	3,080,000,000
TUSD	TrueUSD	Not mineable	58,385,664	58,385,664
DAI	Dai	Not mineable	55,519,367	55,519,367
DIG	Dignity	Not mineable	523,000,000	3,000,000,000
BITCNY	BitCNY	Not mineable	178,500,000	178,500,000
BAY	BitBay	Not mineable	1,012,000,000	1,012,000,000
SBD	Steem Dollars	Not mineable	15,698,508	15,698,508
BITUSD	BitUSD	Not mineable	11,134,500	11,134,500
HAV	Havven	Not mineable	63,297,352	100,000,000
SLR	SolarCoin	Not mineable	45,216,078	98,030,000,000
USNBT	NuBits	Not mineable	11,557,919	70,510,624
NUSD	nUSD	Not mineable	1,154,465	1,154,465

ITC Class EP23: Investment Tokens

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token_symb	token_label	token_mining	itc_econ1_full
KCS	KuCoin Shares	Not mineable	EP23Z: Investment Token > Other Investment Token
DGD	DigixDAO	Not mineable	EP23K: Investment Token > Asset-backed Token
ICN	Iconomi	Not mineable	EP23Z: Investment Token > Other Investment Token
SAFEX	Safe Exchange Coin	Not mineable	EP23Z: Investment Token > Other Investment Token
C20	CRYPTO20	Not mineable	EP23M: Investment Token > Derivative Token
BCI	Bitcoin Interest	Mineable	EP23L: Investment Token > Debt Token
MOD	Modum	Not mineable	EP23Z: Investment Token > Other Investment Token
APIS	APIS	Not mineable	EP23Z: Investment Token > Other Investment Token
TKN	TokenCard	Not mineable	EP23Z: Investment Token > Other Investment Token
NEU	Neumark	Not mineable	EP23N: Investment Token > Equity Token
BMC	Blackmoon	Not mineable	EP23Z: Investment Token > Other Investment Token
ARB	ARBITRAGE	Not mineable	EP23P: Investment Token > Fund Token
TAAS	TaaS	Not mineable	EP23Z: Investment Token > Other Investment Token
EVN	Envion	Not mineable	EP23Z: Investment Token > Other Investment Token
ZPR	ZPER	Not mineable	EP23K: Investment Token > Asset-backed Token
PLBT	Polybius	Not mineable	EP23Z: Investment Token > Other Investment Token
ORME	Ormeus Coin	Not mineable	EP23K: Investment Token > Asset-backed Token
DMD	Diamond	Mineable	EP23Z: Investment Token > Other Investment Token
COSS	COSS	Not mineable	EP23Z: Investment Token > Other Investment Token
AU	AurumCoin	Mineable	EP23K: Investment Token > Asset-backed Token
LCS	LocalCoinSwap	Not mineable	EP23Z: Investment Token > Other Investment Token
ZRC	ZrCoin	Not mineable	EP23K: Investment Token > Asset-backed Token

Anlagemöglichkeiten in Kryptoassets: Übersicht

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Anlage in Coins & Tokens		Anlagen in das Blockchain-Ökosystem bzw. Krypto-Ökosystem	
Direkt	**Indirekt**	**Infrastruktur**	**Unternehmens-beteiligungen**
▪ Erwerb über Handelsplätze ▪ Erwerb über Bank/Broker	▪ Zertifikate ▪ Futures ▪ Single-Asset-Fonds ▪ Token-Fonds ▪ Hedgefonds ▪ Gemischte Fonds ▪ CFDs	▪ Mining ▪ Masternoding	▪ Aktien ▪ Venture Capital

How does it work?

Seizing the opportunity of market inefficiencies.

Bitfinex

BitcoinCash

1 BCC = 0,148359975 BTC

Buy BCC

Bittrex

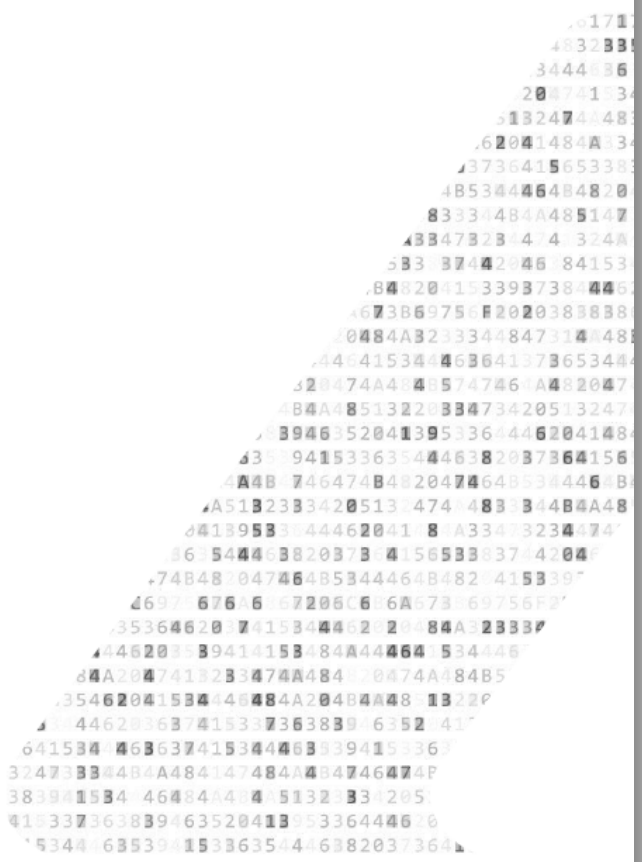
BitcoinCash

1 BCC = 0,14979299 BTC

Sell BCC

+ 0,957% spread

The algorithm constantly monitors the market and whenever an arbitrage return can be realised a trade is simultaneously executed on both exchanges (requests every second)



Source: Blocksize Capital (2018), www.blocksize-capital.com

Example of a crypto fund

Arbitrage spread analysis and trade execution

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1ST/BTC	MAX spread: 0,3322 %	BUY: HitBTC SELL: Bittrex
TRST/BTC	MAX spread: 0,6452 %	BUY: Bittrex SELL: HitBTC
AEON/BTC	MAX spread: 0,2624 %	BUY: Bittrex SELL: HitBTC
SWT/BTC	MAX spread: 0,2898 %	BUY: Bittrex SELL: HitBTC
SNT/ETH	MAX spread: 0,6488 %	BUY: HitBTC SELL: Bitfinex
SAN/ETH	MAX spread: 2,6271 %	BUY: HitBTC SELL: Bitfinex
BCH/ETH	MAX spread: 0,2778 %	BUY: HitBTC SELL: Poloniex
ZRX/USD	MAX spread: 0,7476 %	BUY: Bitfinex SELL: HitBTC
QTUM/ETH	MAX spread: 3,9736 %	BUY: Bittrex SELL: HitBTC
GAME/BTC	MAX spread: 7,3352 %	BUY: HitBTC SELL: Bittrex
NEO/USD	MAX spread: 0,5042 %	BUY: Bitfinex SELL: HitBTC
XVG/BTC	MAX spread: 0,8333 %	BUY: Bittrex SELL: HitBTC
TRX/USD	MAX spread: 0,5683 %	BUY: Bitfinex SELL: HitBTC
SNT/BTC	MAX spread: 0,1211 %	BUY: HitBTC SELL: Bitfinex
BTG/USD	MAX spread: 0,5848 %	BUY: Bitfinex SELL: HitBTC
QTUM/USD	MAX spread: 4,9812 %	BUY: Bitfinex SELL: HitBTC
QTUM/BTC	MAX spread: 4,0296 %	BUY: Bittrex SELL: HitBTC
OMG/USD	MAX spread: 0,111 %	BUY: Bitfinex SELL: HitBTC
FLDC/BTC	MAX spread: 0,3831 %	BUY: Bittrex SELL: Poloniex
GRC/BTC	MAX spread: 0,3145 %	BUY: Poloniex SELL: Bittrex
OMNI/BTC	MAX spread: 0,4265 %	BUY: Bittrex SELL: Poloniex
NAV/BTC	MAX spread: 0,4648 %	BUY: Bittrex SELL: Poloniex
SYS/BTC	MAX spread: 0,032 %	BUY: Poloniex SELL: Bittrex
VIA/BTC	MAX spread: 0,1644 %	BUY: Bittrex SELL: Poloniex
XVC/BTC	MAX spread: 20,6494 %	BUY: Poloniex SELL: Bittrex

Source: Blocksize Capital (2018), www.blocksize-capital.com

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Leiter des Frankfurt School Blockchain Center

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Germany

Kontaktieren Sie mich gerne via E-Mail, Xing, LinkedIn oder Twitter (@philippsandner).

Prof. Dr. Philipp Sandner

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Geboren 1980 in Heidelberg
Kontakt: email@philipp-sandner.de

2000-2005	Studium der BWL an der Universität Mannheim
2005-2011	Promotion an der Ludwig-Maximilians-Universität München
	Auslandsaufenthalte an der Copenhagen Business School und an der University of California at Berkeley
	Post-Doc an der Technischen Universität München
2010-2015	Mitgründer einer auf Innovationsstrategie und IP spezialisierte Unternehmensberatung
2015	Professor an der Frankfurt School of Finance & Management; Themengebiete: Digitalisierung, Entrepreneurship und Innovation;
seit 2017	Leiter des Frankfurt School Blockchain Centers
Themen	Blockchain, Crypto Assets, Initial Coin Offerings (ICOs), Digitalisierung und Entrepreneurship
Praxis	Beratung von Unternehmen hinsichtlich ihrer Blockchain-Aktivitäten, u.a. auch den ersten Crypto Fund Europas oder Startups in Consensys' Token Foundry Programm
Engagement	FinTechRat des Bundesministerium der Finanzen, Mitgründer des Blockchain Bundesverband e.V., Multichain Asset Managers Association