

Investment Banking
Financial Products

The blockchain – a cornerstone of tomorrow's economy

Solactive Blockchain Technology Performance Index

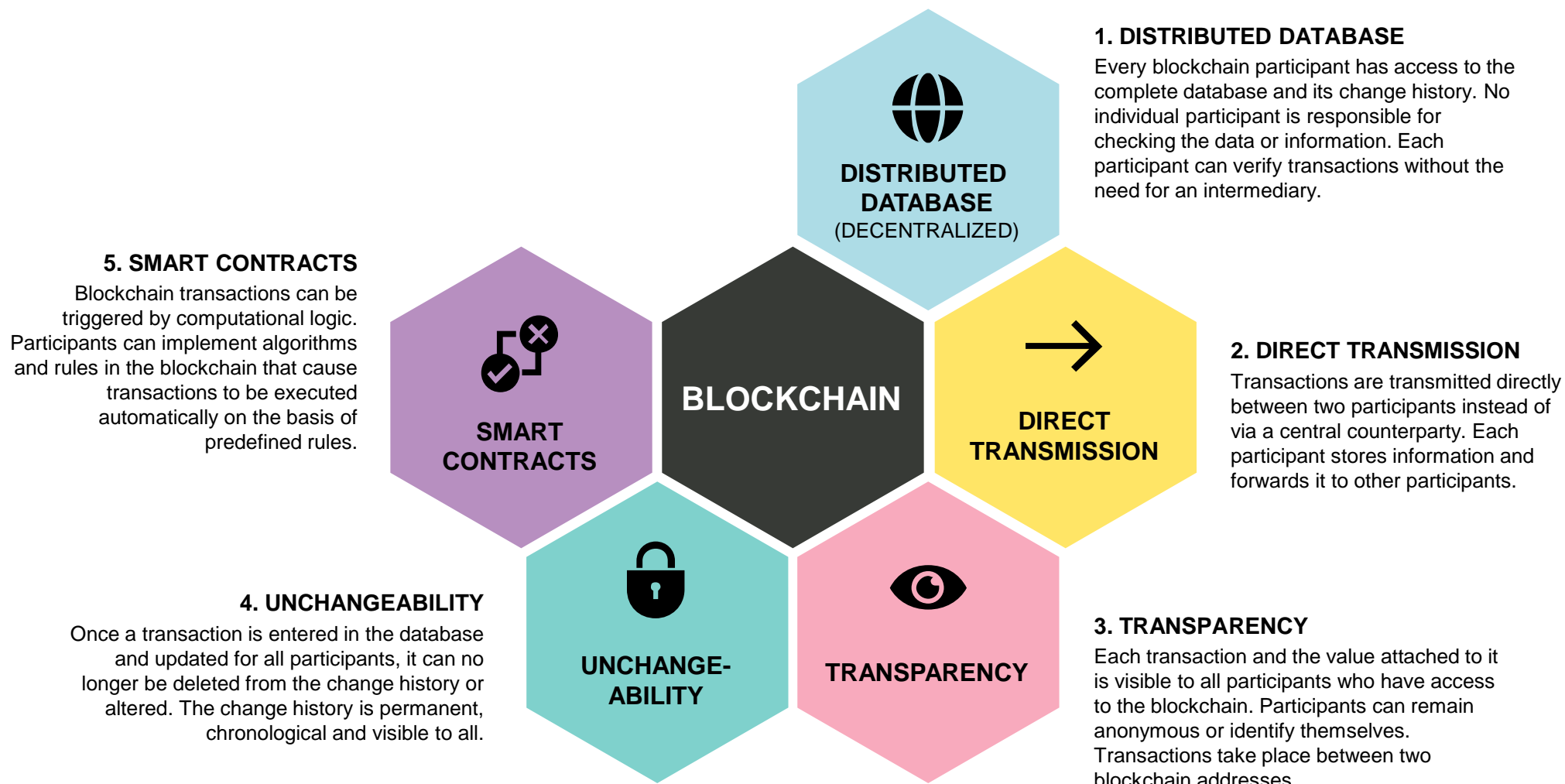
March 2018

Blockchain technology – a cornerstone of tomorrow's economy

Set to change the world?

What is blockchain technology?

Five fundamental principles of the blockchain¹



1: Frankfurt School Blockchain Center, working paper "Blockchain Technology: from Hype to Reality"

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Universal transaction ledger



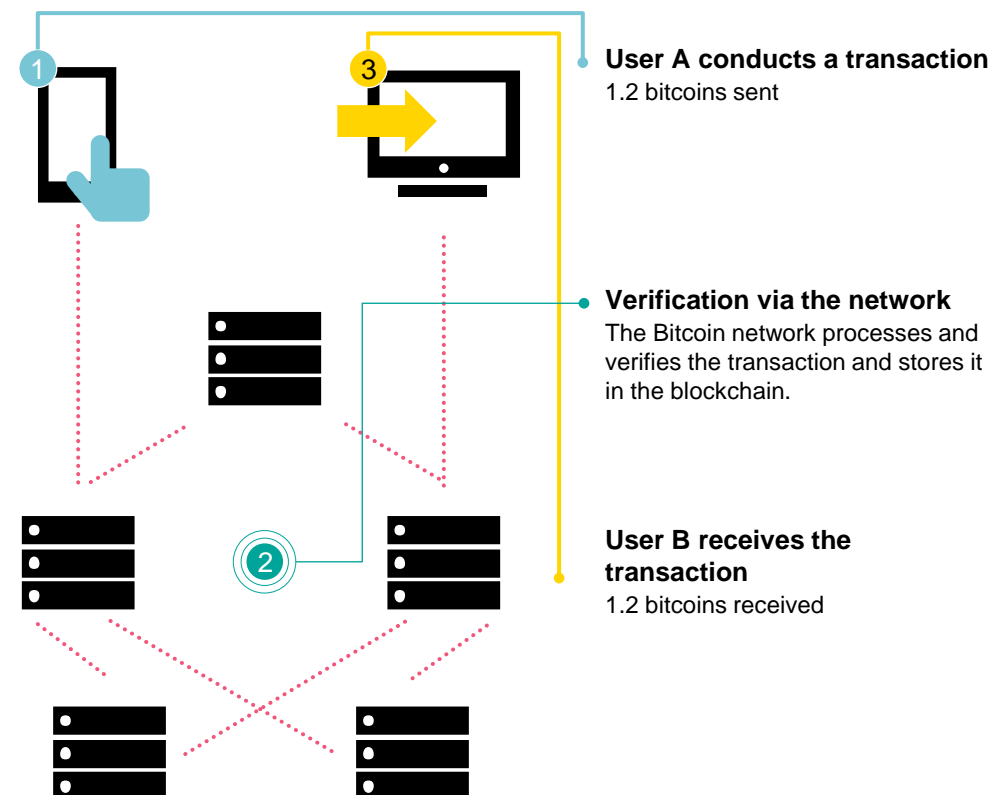
Transactions, contracts and the ways they are recorded are key elements of our economic system.¹

- Key elements of our economic system (transactions, contracts and the ways they are recorded) have not really been able to keep pace with the digital transformation.
- Blockchain technology now promises to solve this problem by digitally documenting and authenticating transactions and creating a permanent record of them.
- The aim is to guarantee that digitally recorded transactions cannot be altered after the fact.

→ The **blockchain is a universal ledger** for transactions of all kinds that makes it possible to exchange digital assets in a secure, direct and decentralized manner without an intermediary.

Bitcoin: the most widely known “ledger” or blockchain

The Bitcoin blockchain stores all transactions (money transfers) executed via it in an unalterable form. Here is an example:



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A new step in the evolution of the Web...



...the Internet of value

Many experts see blockchain technology as the next step in the evolution of the World Wide Web.

“The first generation of the digital revolution brought us the Internet of information.

The second generation – driven by blockchain technology – is bringing us the Internet of value...” ¹

Mainstream technology like the Internet of information is now:²

INTERNET OF INFORMATION

WORLD WIDE WEB



- Changed the way data are distributed and consumed
- **Drastically reduced the cost of communication**
- Unleashed a new economic value system

INTERNET OF VALUE

BLOCKCHAIN



- Blockchain technology could do the same for the way transactions (of any kind) between two or more parties are conducted.
- It could **reduce transaction costs dramatically.**

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Parallels with the development of the Internet



Parallels with the development of the Internet

- There are clear parallels between the development of blockchain technology and that of the Internet protocol TCP/IP for ARPAnet.¹
- The original e-mail system made it possible for the first time to transmit messages bilaterally, whereas Bitcoin, the first application of blockchain technology, enabled bilateral financial transactions.¹
- If we are to believe the claims from Germany³ and the US¹, blockchain technology is currently as advanced as the Internet of information was prior to 1980.
- The Harvard view is that it has huge potential and could influence companies and their profitability to a great extent. → The biggest question is how quickly this will happen.

- Before blockchain technology can play a central role in the digital transformation of the economy and society as a whole, a **“culture of dealing with the blockchain...”** must arise.²
- Experience gained in the development of the Internet could help us to gauge how quickly things will move forwards, and the Internet itself could provide support in disseminating information and raising awareness of the technology so that it can become established more quickly.

Amber Baldet

Blockchain Program Lead at J.P. Morgan (quoted in the FSBC working paper “Blockchain Technology: from Hype to Reality”)

“We’re currently at the same point with blockchain as we were with ARPAnet in 1969, seeing the first evidence of its effectiveness and the first small-scale pilot projects....”

1: Harvard Business School, “The Truth About Blockchain”

2: Z_punkt, white paper “The Internet of Value”

3: Frankfurt School Blockchain Center, working paper “Blockchain Technology: from Hype to Reality”

Blockchain technology

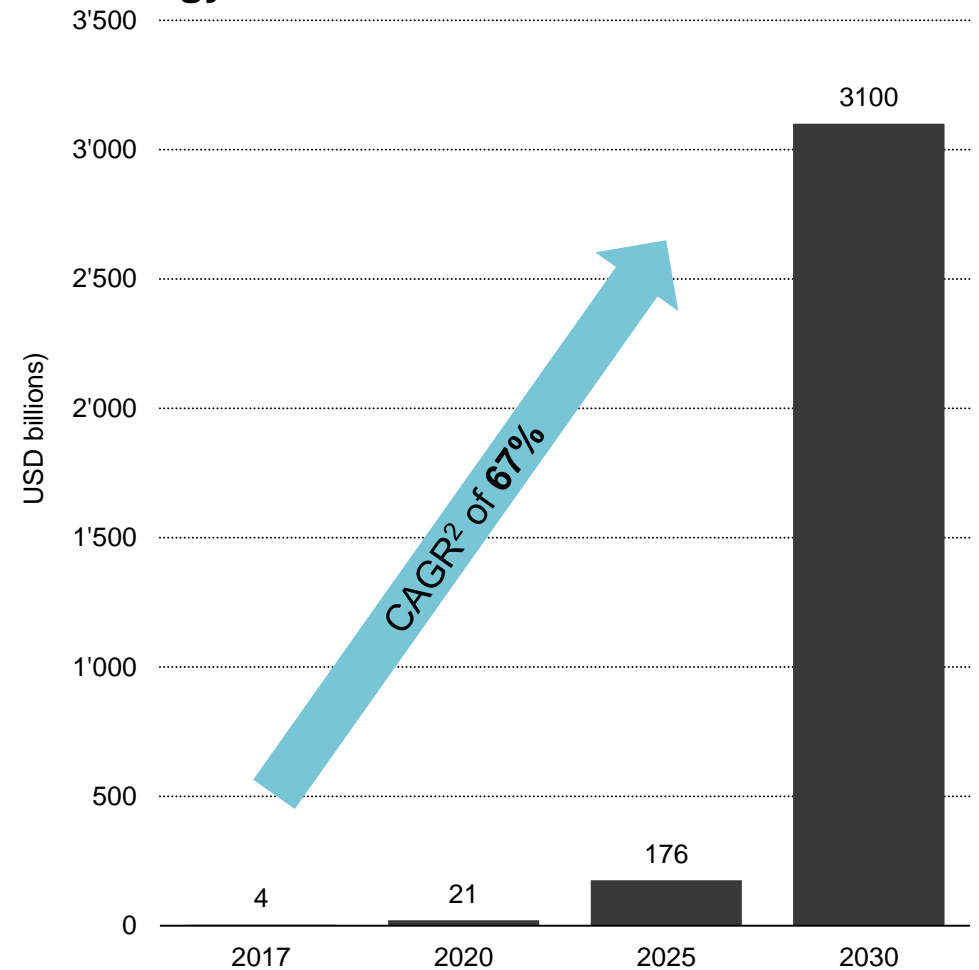
Potential in figures



Increasing potential for blockchain technology

- Investors might assume that the potential of blockchain technology (the Internet of value) is comparable to that of the Internet of information back in the early days.
- According to Deutsche Bank and Accenture, around 10% of global GDP will be stored in blockchains by 2027 – just under ten years from now.
- In “Practical Blockchain: A Gartner Trend Insight Report”, the consulting firm Gartner estimates that the “business value-add” due to blockchain technology in 2017 was USD 4 billion. This, it claims, will have risen to USD 176 billion by 2025 and as much as USD 3,100 billion by 2030, which equates to an estimated CAGR² of about 67%.

“Business value-add” due to blockchain technology¹



1: Gartner Group - “Practical Blockchain: A Gartner Trend Insight Report”
2: CAGR = compound annual growth rate

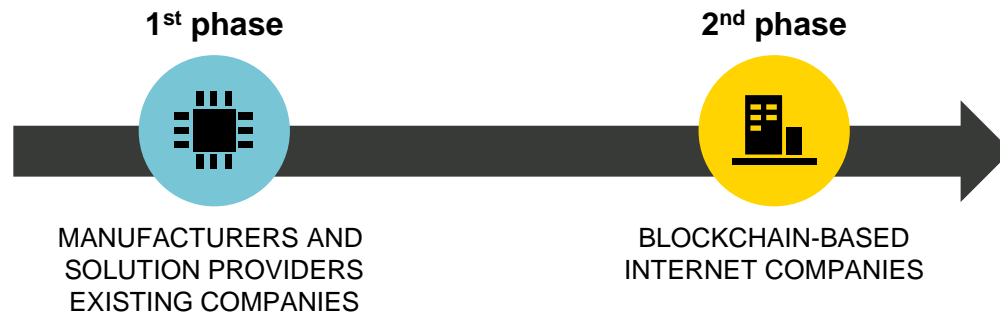
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Who stands to profit from blockchain technology?

Blog post



Companies that stand to profit from blockchain technology



1st phase

In the first phase, established firms will be the early adopters of blockchain technology for their business models.

2nd phase

In the second phase, more and more blockchain-based companies will be formed. These can be compared with Internet giants such as Google and Amazon.

- **New business models and services** could be implemented “smartly” using blockchains.
- Business and economic models could change significantly.
- In addition, blockchain technology has the potential to transform companies and their profitability radically, for example by massively reducing transaction costs.

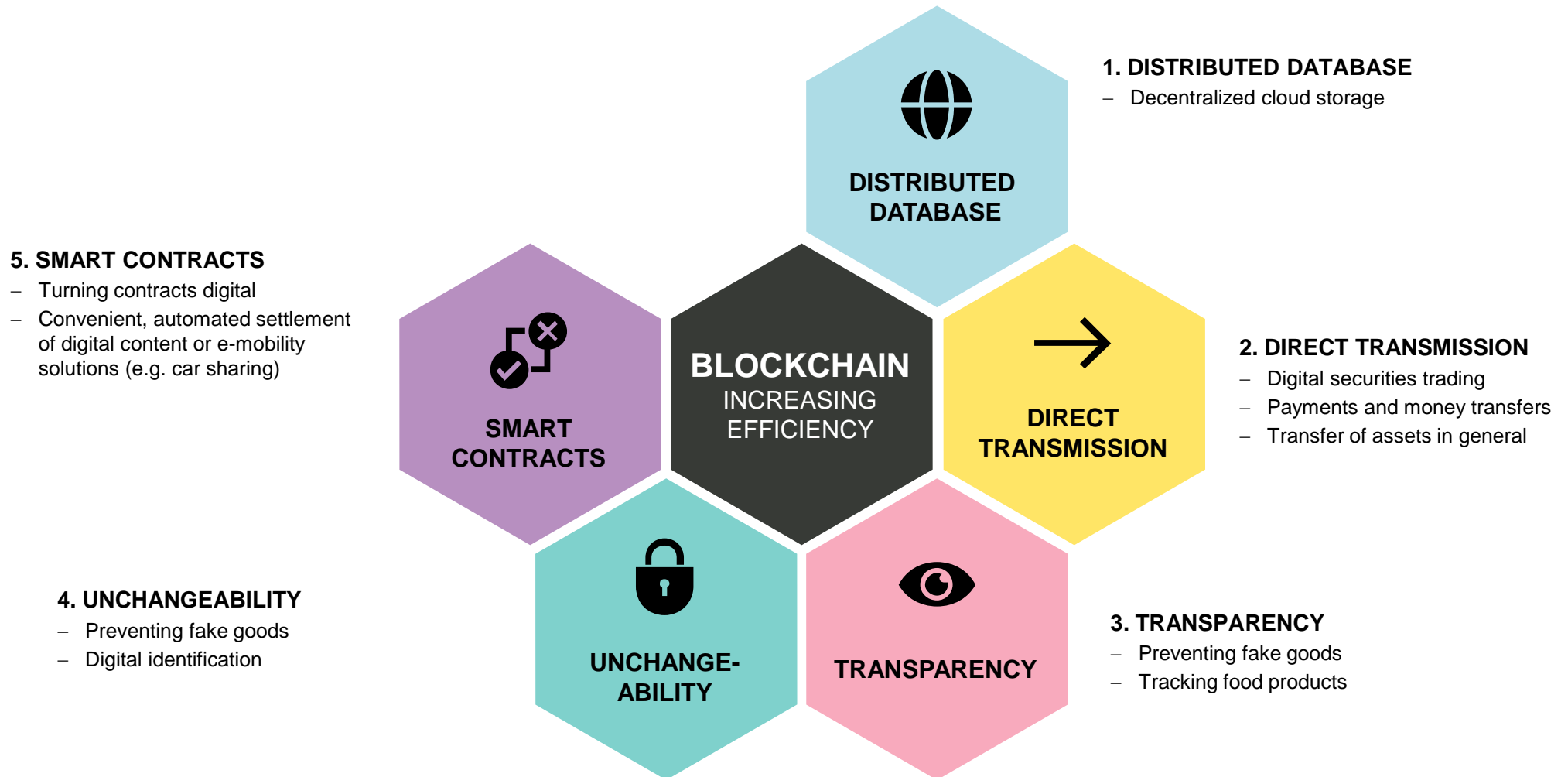
Source: 1: Frankfurt School Blockchain Center; working paper “Blockchain Technology: from Hype to Reality”; Thomas Rappold, Index Advisor at I&S Internet & Security Consulting GmbH, entrepreneur and author of “Silicon Valley Investing”

Please note: Thomas Rappold is paid by Vontobel for his services as Index Advisor.

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Possible future uses of blockchain technology

Clients and producers come together directly, cutting out the middle man.



Solactive Blockchain Technology Performance Index

A rules-based index for efficient investing in current and future blockchain technology.

Solactive Blockchain Technology Performance Index

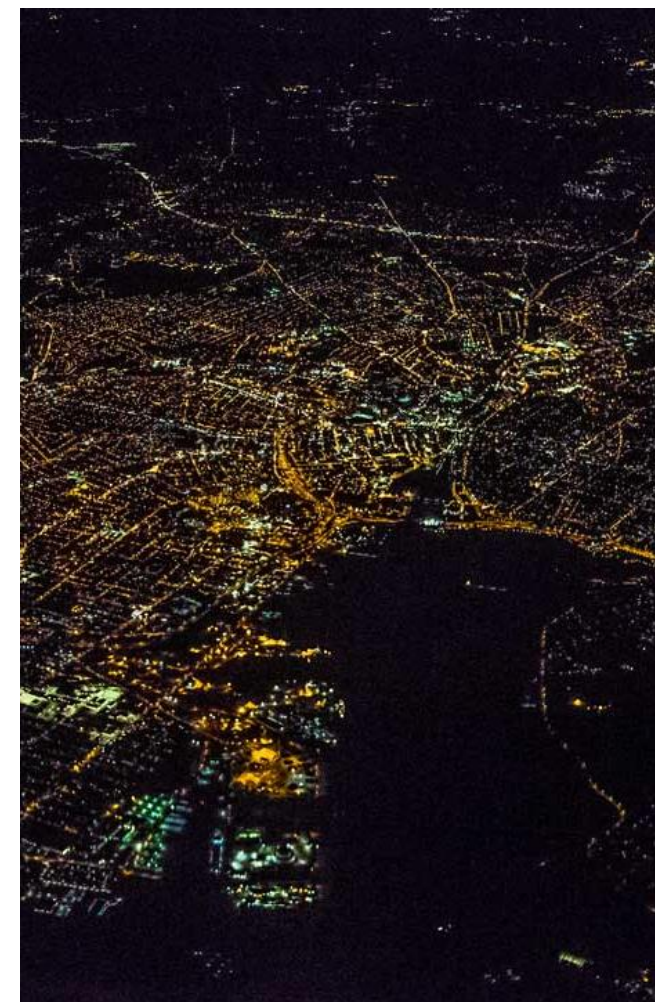
Diversified, transparent and strictly rules-based

[Index Guidelines](#)[Blog post](#)

An efficient way to invest in blockchain technology

- Since blockchain technology is at a relatively **early stage of development**, we can expect to see a lot of changes.
- This will make it all the more important to employ a **dynamic investment concept**.
- The dynamic Solactive Blockchain Technology Performance Index ensures that **the theme is replicated in a diversified, transparent and strictly rules-based manner at all times**.
- It contains companies that are already generating or expected to generate revenues with blockchain technology in the defined (sub)sectors.
- The blockchain technology theme certificate could represent an efficient means of investing in the theme of current and future blockchain technology.

→ The index comprises up to 20 companies from blockchain technology subsectors.

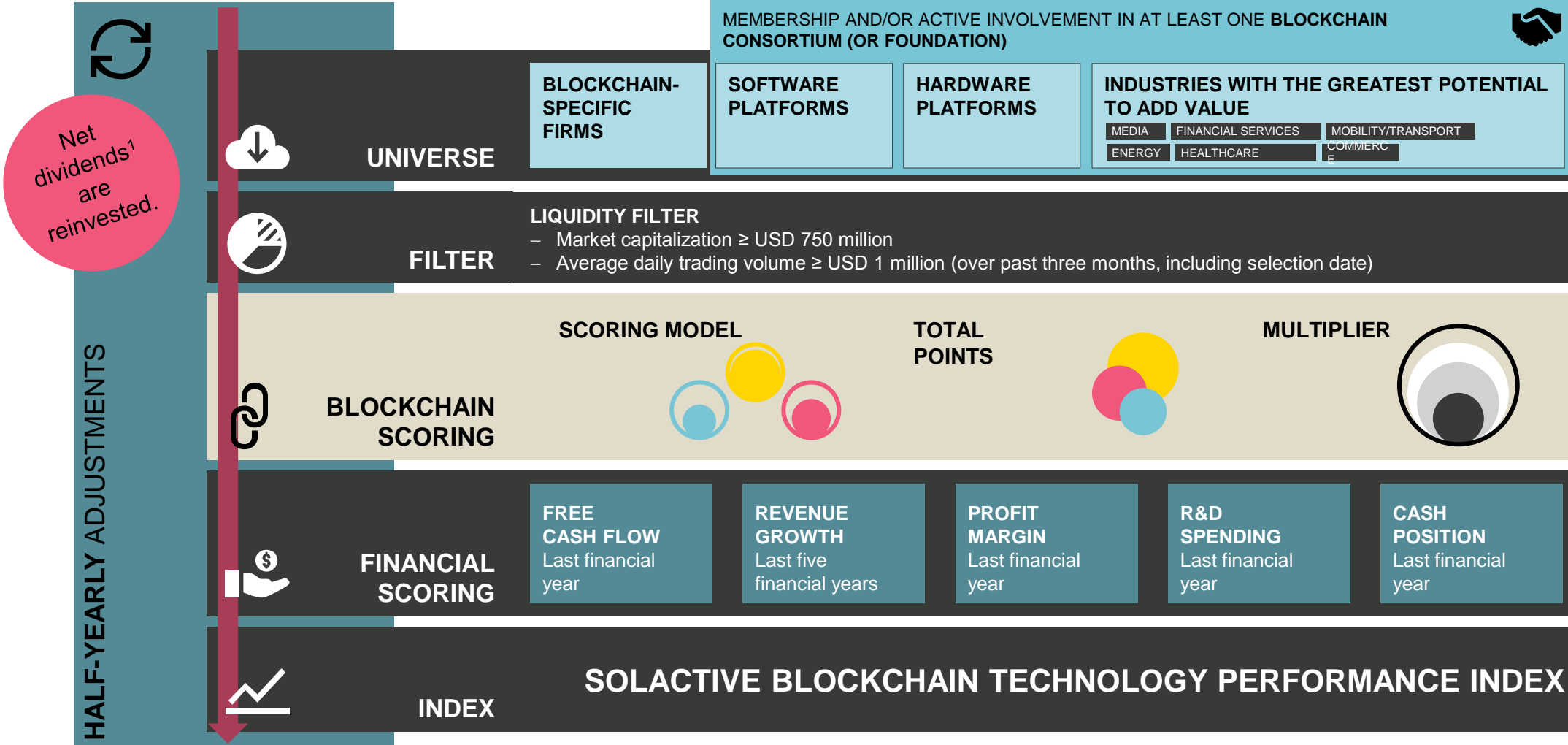


Index concept

Solactive Blockchain Technology Performance Index

Index Guidelines  [Blog post](#) 

Half-yearly review of index composition with subsequent rebalancing



¹ After deduction of country-specific withholding taxes
 Source: Solactive Index Guidelines; illustration: Vontobel

Blockchain scoring model

Selection of relevant companies

Blockchain scoring model

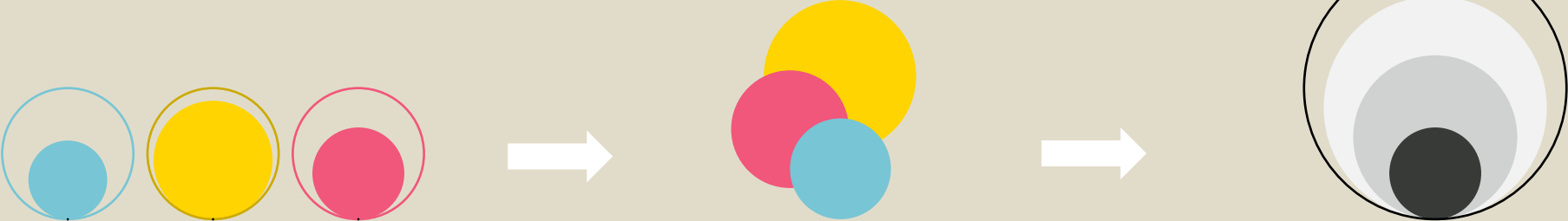
Points are awarded based on three criteria.

Total score

The points for the three criteria are added together to give the total score.

Industry multiplier

A multiplier specific to the industry category is applied to the total score.



BLOCKCHAIN PATENTS

How many patents has the company registered in connection with blockchain technology?
 → **The more patents, the higher the score**

VENTURE CAPITAL INVESTMENTS

How many venture capital deals have been done?
 → **The more deals, the higher the score**

BLOCKCHAIN CONSORTIA

How many consortia is the company an active or associate member of, and how many was it involved in founding?
 → **The more consortia, the higher the score**

INDUSTRY CATEGORIES			MULTIPLIER
BLOCKCHAIN-SPECIFIC FIRMS	SOFTWARE PLATFORMS	HARDWARE PLATFORMS	
5x	4x	3x	
INDUSTRIES WITH GREATEST POTENTIAL TO ADD VALUE			
MEDIA	MOBILITY/TRANSPORT	COMMERCE	
ENERGY	FINANCIAL SERVICES	HEALTHCARE	2x



Indicative initial composition

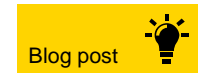
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COMPANY	CATEGORY	CURRENCY	COUNTRY	WEIGHTING
Overstock.com, Inc.	A	USD	US	5%
Intel Corporation	B	USD	US	5%
Cisco Systems, Inc.	B	USD	US	5%
NEC Corp.	B	JPY	JP	5%
Hitachi, Ltd.	B	JPY	JP	5%
Microsoft Corporation	C	USD	US	5%
Oracle Corporation	C	USD	US	5%
International Business Machines Corporation	C	USD	US	5%
Baidu, Inc. Sponsored ADR	C	USD	CN	5%
Cognizant Technology Solutions Corporation	C	USD	US	5%
Accenture Plc	C	USD	US	5%
Red Hat, Inc.	C	USD	US	5%
Infosys Limited Sponsored ADR	C	USD	IN	5%
Wipro Limited Sponsored ADR	C	USD	IN	5%
Mastercard Incorporated	D	USD	US	5%
CME Group Inc.	D	USD	US	5%
Bank of America Corporation	D	USD	US	5%
SBI Holdings, Inc.	D	JPY	JP	5%
Thomson Reuters Corporation	D	USD	CA	5%
Banco Santander S.A.	D	EUR	ES	5%

A: blockchain-specific firms; **B:** hardware platforms; **C:** software platforms; **D:** industries with the greatest potential to add value

Indicative initial composition

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Overstock

- The company has diversified to become a full financial service provider for cryptocurrencies and blockchain technology with its own platform called tZero.
- The platform has been approved by the US Securities and Exchange Commission (SEC) as an alternative trading system (ATS).
- In addition, Overstock is planning an initial coin offering (ICO) worth USD 250 million, with USD 100 million already subscribed.
- The online retailer hopes that its proprietary blockchain platform will make a substantial contribution towards taking its e-commerce activities to the next level.

IBM (International Business Machines)

- IBM's extensive blockchain activities have earned it the nickname "International Blockchain Machines".
- The company is a member of such leading consortia as [Digital Asset Holdings](#) and the [Hyperledger Foundation](#).
- According to market researcher Juniper Research's Blockchain Enterprise Study, IBM is working more successfully with blockchain technology than any other company.
- It has strong ties to financial services firms and industrial conglomerates.
- It also has a strong influence over the implementation of successful blockchain projects.

Accenture

- The world's largest IT services provider is very well positioned in promising fields such as blockchain technology.
- It is capable of carrying out mission-critical projects with financial service providers, exchanges and industry.
- The company is a member of such Blockchain consortia as [Digital Asset Holdings](#) and the [Hyperledger Foundation](#).
- It traditionally has a high affinity with the financial sector.
- It offers various blockchain services for reinsurers and payment solutions based on the Ripple cryptographic protocol.

Bank of America

- It has the most blockchain patents (even more than IBM and Microsoft).
- The bank holds key patents for a crypto-exchange and a blockchain-based settlement platform.
- It is represented in such key blockchain consortia as the [R3 Consortium](#) (standardized cross-border payments).
- BoA hopes that its use of blockchain technology in B2C and B2B will result in major savings over the longer term (due to efficiency gains) and streamline its business processes (via smart contracts).

BLOCKCHAIN SCORES	NUMBER
Patents	0
Consortia	1
VC	5

BLOCKCHAIN SCORES	NUMBER
Patents	27
Consortia	3
VC	0

BLOCKCHAIN SCORES	NUMBER
Patents	11
Consortia	4
VC	1

BLOCKCHAIN SCORES	NUMBER
Patents	43
Consortia	1
VC	0

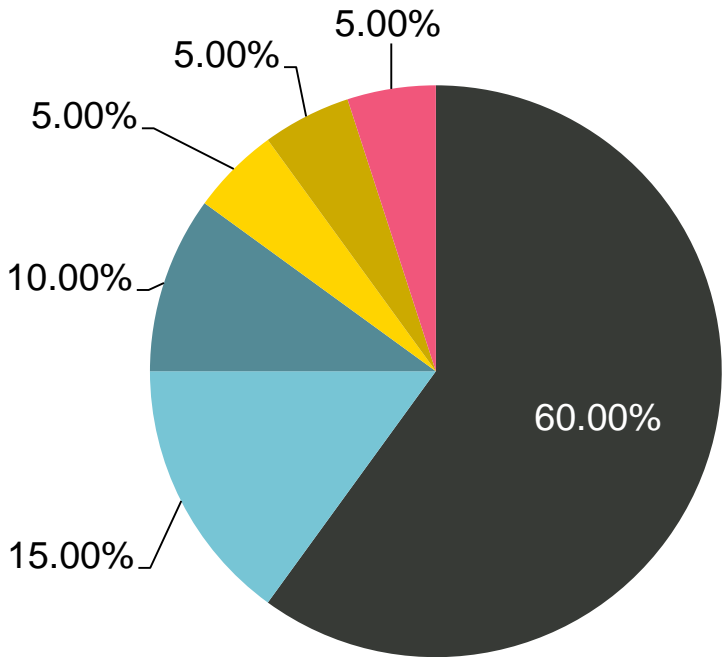
Source: Thomas Rappold, Index Advisor, entrepreneur and author of "Silicon Valley Investing". All information is from Thomas Rappold and does not necessarily reflect Vontobel's opinion. VC = venture capital

Initial categories and index weightings

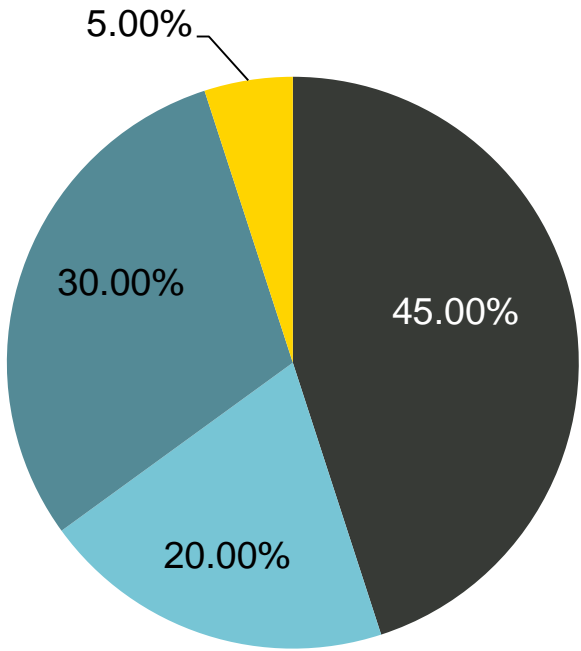
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Weightings by country



Weightings by category



■ US ■ Japan ■ India ■ China ■ Canada ■ Spain


■ Software platforms
■ Hardware platforms
■ Sectors with greatest potential to add value
■ Blockchain-specific companies

Product details

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Solactive Blockchain Technology Performance Index

Index currency USD

In subscription until 4pm CET on 6 April 2018 

PRODUCT DETAILS

SSPA product type	Tracker Certificate (1300)
Underlying	Solactive Blockchain Technology Performance Index
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Management fee	1.20% p.a.
Issuer	Vontobel Financial Products Ltd., DIFC Dubai (is not subject to any prudential supervision and has no rating)
Guarantor	Vontobel Holding AG, Zurich (Moody's A3)

	 CHF	 USD	 EUR
Currency	CHF	USD	EUR
ISIN / symbol	CH0405452274 / ZSOCBV	CH0405452266 / ZSOUBV	CH0405452290 / ZSOEBV
Issue price	CHF 101.50 (CHF 1.50 front-load fee included)	USD 101.50 (USD 1.50 front-load fee included)	EUR 101.50 (EUR 1.50 front-load fee included)
Spot reference price (index level)	USD 100.00	USD 100.00	USD 100.00

Details page 	Term sheet 	Details page 	Term sheet 	Details page 	Term sheet 
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Term sheets with the legally binding information and other details can be downloaded at any time from www.derinet.ch. All information is indicative and subject to change.
Please note: The Solactive Blockchain Technology Performance Index is an index provided and calculated by Solactive AG.

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 - (2) where no consideration is or will be given for the transfer;
 - (3) where the transfer is by operation of law
 - (4) as specified in Section 276(7) of the SFA; or
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