A strategic perspective: Initial Coin Offerings
Global and Switzerland
Executive Summary

Overall assessment

- The number of Initial Coin Offerings (ICOs) increased substantially in 2017 and investment amounts still grow exponentially
  - Point in case: alone in Oct/Nov 2017 5 additional ICOs in the Top 15 summed up to 494mn USD
  - In total, in 2017 alone a volume of 4.6bn USD has been raised through ICOs (up from 0.2bn USD in 2016)
  - However, some of the larger ICOs have also run into roadblocks, be it dysfunctional governance, cybersecurity issues or capacity limits
- Globally, Switzerland and Singapore/ Hong Kong are emerging as the leading ICO hubs, with a rapidly growing ecosystem around blockchain, crypto and ICOs
- Regulation is catching up: many jurisdictions around the globe have issued their respective guidelines and crypto-regulation
- Strategically, ICOs are gradually disrupting traditional VC funding – hybrid models are ‘en vogue’ as they combine smart money & crowd support
Overview

Spotlight Crypto Valley Switzerland

Emerging ICO Regulation

Outlook
The number of Initial coin offerings (ICOs) exploded in 2017 and investment amounts still grow exponentially

Definition & characteristics

Initial coin offering ("ICO", also token launch or token generation) is a term describing a limited period in which a company sells a predefined number of digital tokens (crypto coins) to the public, typically in exchange for major crypto-currencies (as of today, mostly Bitcoins and Ether).

ICOs are still largely unregulated to date, and, depending of their particularities, they can take different forms including a security, utility token or digital currency. Prospectively, ICOs can be established as an alternative to classic debt/capital-funding as performed today by Venture Capital/Private Equity firms and banks.

Average ICO characteristics

<table>
<thead>
<tr>
<th>Year</th>
<th>Ø duration / ICO (days)</th>
<th>Ø volume / ICO (USDk)*</th>
<th># ICOs</th>
</tr>
</thead>
<tbody>
<tr>
<td>2013</td>
<td>41</td>
<td>381</td>
<td>2</td>
</tr>
<tr>
<td>2014</td>
<td>68</td>
<td>3'814</td>
<td>8</td>
</tr>
<tr>
<td>2015</td>
<td>33</td>
<td>1'101</td>
<td>9</td>
</tr>
<tr>
<td>2016</td>
<td>41</td>
<td>4'816</td>
<td>57</td>
</tr>
<tr>
<td>YTD 2017</td>
<td>30</td>
<td>11'726</td>
<td>438**</td>
</tr>
<tr>
<td>All</td>
<td>32</td>
<td>10'114</td>
<td>514**</td>
</tr>
</tbody>
</table>

Global ICO volume (USDmn)¹

YTD 17 4'596

Y 16 236

Y 15 10.54

Y 14 31.25

Y 13 0.76

¹) Calculations based on currency exchange rates on end date of ICO. As Ether and Bitcoin exchange rates are highly volatile, actual and current market capitalization of the companies today may differ significantly from figures shown in the table. ICO funding amount until 29.11.2017 considered.

Source: PwC Strategy& analysis
### Five recent ICOs in October & November rank among top 15

#### Overview: 15 biggest ICOs

<table>
<thead>
<tr>
<th>Date: 29.11.2017</th>
<th>Total raised amount (USDmn)¹</th>
<th>Status</th>
<th>End of ICO</th>
<th>Duration (days)</th>
<th>Industry</th>
<th>Focus</th>
<th>Country</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Filecoin</td>
<td>257.0</td>
<td>Past</td>
<td>07.09.2017</td>
<td>28</td>
<td>Technology</td>
<td>Data storage network</td>
</tr>
<tr>
<td>2</td>
<td>Tezos</td>
<td>238.1</td>
<td>Past</td>
<td>14.07.2017</td>
<td>13</td>
<td>Fintech</td>
<td>Smart contract platform</td>
</tr>
<tr>
<td>3</td>
<td>EOS</td>
<td>159.2</td>
<td>Past</td>
<td>01.07.2017</td>
<td>5</td>
<td>Technology</td>
<td>IT Infrastructure</td>
</tr>
<tr>
<td>4</td>
<td>Bancor</td>
<td>156.6</td>
<td>Past</td>
<td>12.06.2017</td>
<td>&lt;1</td>
<td>Fintech</td>
<td>Trading platform</td>
</tr>
<tr>
<td>5</td>
<td>Polkadot</td>
<td>145.2</td>
<td>Past</td>
<td>27.10.2017</td>
<td>12</td>
<td>Technology</td>
<td>Completely decentralized web</td>
</tr>
<tr>
<td>6</td>
<td>The DAO</td>
<td>142.5</td>
<td>Past</td>
<td>27.05.2016</td>
<td>28</td>
<td>Fintech</td>
<td>Venture capital</td>
</tr>
<tr>
<td>7</td>
<td>QASH</td>
<td>106.4</td>
<td>Past</td>
<td>08.11.2017</td>
<td>2</td>
<td>Fintech</td>
<td>Accessible financial services</td>
</tr>
<tr>
<td>8</td>
<td>Kin Kik</td>
<td>97.5</td>
<td>Past</td>
<td>26.09.2017</td>
<td>14</td>
<td>Social Media</td>
<td>Ecosystem for digital services</td>
</tr>
<tr>
<td>9</td>
<td>Comsa</td>
<td>95.4</td>
<td>Past</td>
<td>06.11.2017</td>
<td>35</td>
<td>Fintech</td>
<td>One-stop ICO platform</td>
</tr>
<tr>
<td>10</td>
<td>Status</td>
<td>95.0</td>
<td>Past</td>
<td>20.06.2017</td>
<td>&lt;1</td>
<td>Technology</td>
<td>Messaging platform</td>
</tr>
<tr>
<td>11</td>
<td>TenX</td>
<td>83.1</td>
<td>Past</td>
<td>24.06.2017</td>
<td>&lt;1</td>
<td>Fintech</td>
<td>Modern bank</td>
</tr>
<tr>
<td>12</td>
<td>Press.one</td>
<td>82.0</td>
<td>Past</td>
<td>19.07.2017</td>
<td>7</td>
<td>Technology</td>
<td>Content publishing platform</td>
</tr>
<tr>
<td>13</td>
<td>WAX</td>
<td>80.0</td>
<td>Past</td>
<td>29.11.2017</td>
<td>14</td>
<td>Entertainment</td>
<td>Virtual goods marketplace</td>
</tr>
<tr>
<td>14</td>
<td>Tron</td>
<td>70.0</td>
<td>Past</td>
<td>02.09.2017</td>
<td>2</td>
<td>Entertainment</td>
<td>Free entertainment system</td>
</tr>
<tr>
<td>15</td>
<td>DomRaider</td>
<td>67.2</td>
<td>Past</td>
<td>09.10.2017</td>
<td>27</td>
<td>Fintech</td>
<td>Real time auctions</td>
</tr>
</tbody>
</table>

1) Calculations based on currency exchange rates on end date of ICO. As Ether and Bitcoin exchange rates are highly volatile, actual and current market capitalization of the companies today may differ significantly from figures shown in the table. ICO funding amount until 29.11.2017 considered.

Source: PwC Strategy& analysis
**ICOs disrupt traditional VC funding – hybrid models are ‘en vogue’ as they combine smart money & crowd support**

Archetypes of fundraising

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**Traditional VC funding**
- **Seed**
- **Series A**
- **Series B**
- **Series C**
- **IPO**

**Pros & cons**
+ Investors cautiously validate ideas before committing funds
+ Founders cautious with spending money
- Founders often focused on next funding round (hinders innovation)

**Funding rationale**
- Receive initial funding after business plan, prototype and team validation
- Additional funding for promising KPIs & market and improved product

**Initial Investors**
- Business Angels
- Venture capitalists

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**Hybrid funding**
- **Seed**
- **Series A**
- **ICO**
- **Series optional**

**Pros & cons**
+ Founders get “smart money” as well as crowd support (first customer)
+ VCs validate seriousness of business, crowd validates idea & market potential
+ Founders are free to innovate

**Funding rationale**
- Receive initial funding after business plan, prototype and team validation
- Receive ICO funding after proofing concept and potential of idea

**Initial Investors**
- Business Angels
- Venture capitalists
- Tech-savvy
- BC/ crypto-Anonymous community investors

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**Pure ICO funding**
- **ICO**
- **Add. ICO**
- **Add. ICO**

**Pros & cons**
+ Founders get crowd support
+ Founders are free to innovate
- Governance risks if no framework
- Transparency risks on use of proceeds and product development

**Funding rationale**
- Receive funding based on whitepaper, founder team and idea
- Additional TGE (Token Generating Events) only if necessary

**Initial Investors**
- Tech-savvy
- BC/ crypto-community
- Anonymous investors

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**Note:**
Anonymous investors only at ICOs that do not provide KYC/AML procedures (assumption: regulation will increasingly target ICOs that do not provide KYC/AML process)

**Source:** PwC Strategy& analysis
**ICO**s remain a challenge from several angles: legal status, tax, cybersecurity and regulation

### Key challenges

#### Legal nature of ICOs and legal status of ICO-related claims

Tokens (coins) can have different functions, which triggers the way how to treat them from a legal perspective. Four main forms exist to date (incl. many hybrid combinations). Open questions are predominantly around applicability of local laws, legal competence and enforceability.

<table>
<thead>
<tr>
<th>Security token</th>
<th>Digital currency</th>
<th>Asset-backed token</th>
<th>Utility token</th>
</tr>
</thead>
<tbody>
<tr>
<td>Tokens with security character, e.g., debt, equity or derivatives, with income generating component and potential rights vis-à-vis the issuer, e.g., governance, participation, ownership</td>
<td>Tokens with an attributed value for exchange/transactions, asset/value storage and/or unit of account</td>
<td>Tokens that provide underlying exposure to real world assets (e.g. gold, diamond, securities, cash, real estate, etc.)</td>
<td>Tokens used for supporting services/functionalities on blockchain-based platform</td>
</tr>
</tbody>
</table>

#### Tax

As ICOs are a nascent phenomena, **most tax authorities do not have specific regulations in place yet**. Whilst many ICOs tried to position themselves as a “foundation” or “non-profit” in the early days, way fewer are exploring such models today opting instead for a for profit model. The recent rise in Bitcoin and other cryptocurrencies has caught the attention of tax authorities around the world as well (e.g. the recent U.S. IRS case against Coinbase).

#### Cybersecurity

Many **ICOs still lack proper cybersecurity** which can represent a major threat for investors. As most ICOs raise money in the form of cryptocurrencies (e.g., Ether and Bitcoins), high-volume transactions provide an attractive target for criminals. E.g. **Veritaseum** was attacked by hackers, who got access to ca. USD 4.5mn (July 23, 2017) and **CoinDash’s ICO campaign** had a similar incident where USD 7.4mn were withdrawn illegally (July 17, 2017). Beside ICOs, several cryptocurrency wallets (where tokens/coins get stored) have been hacked. E.g. hackers seized ca. USD 32mn benefiting from a protocol security gap in **Parity wallets** (July, 2017).

#### Regulation

Worldwide, regulators started to look into ICOs, and took different approaches. While some jurisdictions are mainly positive towards the new funding method (e.g. Switzerland, Hong Kong, Singapore), others are rather concerned (e.g. EU) or intervene actively (e.g. USA, China).

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*Source: PwC Strategy& analysis*
In the light of issues encountered by many ICOs, upcoming trends and new approaches can be identified

**Upcoming Trends in doing ICOs**

- **Stronger focus on governance** and legal entity set-up
- **Lock-up period for tokens** requires investors to more carefully weigh benefits/risks of investment decision
- **Pre-registering requirement** for investors combined with **KYC/AML investor identification** limits max. purchase by investor solving distribution problem (e.g. Sybil attacks) without need for an uncapped ICO
- **Structured fundraising rounds with caps** of funding increase transparency and need-based funding of projects
- **Interactive protocol** to solve certainty of participation and certainty of valuation problem by specifying desired purchase quantity at each valuation via smart contract techniques
- **Staggered release of funds** to development team including voting mechanisms ensures appropriate use of funds and increases accountability for efficient allocation of resources
- **Combination with VC-Funding** to diversify funding sources and validate project with professional investors (e.g. offering pre-sales to VCs)
- **More focus on cybersecurity** pre- and post-ICO

Source: PwC Strategy& analysis
Overview

Spotlight Crypto Valley Switzerland

Emerging ICO Regulation

Outlook
Switzerland has emerged as a hub for several successful ICOs in 2017 – thanks to the vibrant Crypto Valley ecosystem

ICO hub Switzerland

Success Factors

Traditionally, attractive financial market also for non-Swiss companies: Many Fintech start-ups focusing on blockchain are attracted by Switzerland’s reputation of being a welcoming environment for companies and tech firms.

Talent pool within ecosystem: Several universities are researching blockchain and resp. market impact including education and attraction of highly educated talent.

Democracy and neutrality: It is a very powerful statement to build and market the “democratic” blockchain technology in the country which stands for direct democracy and neutrality.

Supportive governments: Swiss executive and legislative branches support blockchain technologies on several levels.

Historic involvement in technology development: Some compare the significance of blockchain with the ones of the World Wide Web. This was developed at CERN in Geneva. Switzerland’s high-educated workforce is believed to be able to achieve comparable milestones with blockchain.

Tax system: Switzerland’s tax system is attractive for financial service firms, to which many blockchain start-ups count.

Ecosystem

Universities & Research Institutions

Several universities are actively researching blockchain and its impact in the market.

Governments & Regulators

Governments on canton and community level are supportive, and the federal government is monitoring closely.

Providers, Partners & Corporates

Many large companies within Tech, FS and Legal and position themselves on blockchain in Switzerland.

Start-ups

Thanks to an ideal ecosystem environment, several key blockchain start-ups have chosen Switzerland as their home.

“Switzerland has always been open to blockchain technology and cryptocurrencies. There are no alternative locations that offer these opportunities in the same way”

– T. Gerring, Director of Technology, Ethereum Foundation

“Today the Crypto Valley has attracted a large number of companies and organizations both big and small. Founding members include ConsenSys, UBS, PwC, Thomson Reuters, Luxoft, Lykke, Canton of Zug, Lucerne University of Applied Sciences and Arts and the legal firm MME. Crypto Valley is also home to the Ethereum Foundation, Xapo and the Cardano Foundation, among many others.” – O. Bussmann, President Crypto Valley Association

Source: PwC Strategy& analysis
Overview

Spotlight Crypto Valley Switzerland

Emerging ICO Regulation

Outlook
Globally, diverse ICO regulation is emerging – different approaches by geographies identified

Overview emerging regulation

**Europe**
- Wary reactions and reliance on existing regulation
- Application dependent on classification of ICO
- Several countries released their own ICO guidelines/regulations
- Recently released warnings by European Securities and Markets Authority (ESMA) addressing both investors and firms

**Asia**
- Difference in local regulatory approaches
- China, South Korea and Vietnam issued ICO bans
- Hong Kong and Singapore with wary reaction applying existing regulation
- Japan with strong footprint in bitcoin (~40-60% of trading volume), yet no stance on ICOs

**America**
- The Securities and Exchange Commission (SEC) released ruling that some of the tokens are subject to securities regulation (esp. DAO)
- SEC investor bulletin warns investors from high risks of ICOs
- Limited SEC guidance – lawyers required to contact SEC for specific requests
- IRS issued notice on virtual currencies as property for U.S. federal tax purposes

Most regulators did not determine the precise nature and asset class of cryptocurrencies as the basis for ICO regulation. The recent wave of ICOs might push regulators to act faster than planned on cryptocurrencies
US entrepreneurs tend to go overseas to conduct their ICO, as regulators becomes more restrictive

US regulation

Starting to intervene in and regulate the cryptocurrency space

Tokens treated as commodities or securities

Cryptocurrency & exchange
- 50 states can have their own regulations (e.g. BitLicense)
- CFTC regulates cryptocurrency derivatives
- FinCEN requires all exchange to register

ICOs
- Definition of security very broad (e.g. Howey Test)
- Recently created a cyber unit dedicated to policing “violations involving DLT technology and ICOs”

Implications
- Many US entrepreneurs going overseas to conduct their ICO
- Alignment of regulations at state and federal level required

SEC’s most recent interventions in ICOs

SEC filed charges against organizers of PlexCorp ICO (4 Dec 2017)
- SEC declared PlexCorp as a “full fledged cyber scam”
- Two organizers charged with violating US security law and defrauding investors
- Obtained an emergency asset order for USD 15mn from +1’000 investors

SEC to stop Munchee ICO for security violations (11 Dec 2017)
- SEC halted ICO, because of registration violations (no claims of fraud)
- Tokens were ultimately deemed a security regardless of their "utility" when the sale took place, as tokens were regarded as “investment contracts”
- No penalty was imposed as company stopped ICO quickly and refunded investors (USD +15mn)

SEC statement on cryptocurrencies and ICOs (11 Dec 2017)
- Chairman Jay Clayton warns investors to put money into cryptocurrencies
- Trading cryptos and ICO activity may be in violation of federal security law
- Many platforms trading in cryptocurrencies may also be in violation of laws
- Calling a token a “utility” does not prevent token from being a security
- The disruptive potential of cryptocurrencies and blockchain is recognized

Note: SEC = Security and Exchange Commission; CFTC = Commodity Futures Trading Commission
Source: PwC Strategy& analysis
European Union regulators issued warnings on ICOs directing at both investors and participating businesses

European Union regulation

Investors
ESMA alerts investors of the high risk of losing all of their invested capital due to the nature of speculative investments and emphasizes:

- **High volatility** of the token value
- **Limited applicability of EU law** and **regulation** including protection benefits
- **Vulnerability** to the risk of fraud or money laundering

Companies
ESMA reminds companies involved in ICOs of their **compliance duties** with regards to **regulated investment activities**, especially:

- the Prospectus Directive
- the Markets in Financial Instruments Directive (MiFID)
- the Alternative Investment Fund Managers Directive (AIFMD)
- the Fourth Anti-Money Laundering Directive

Companies involved in ICOs should give **careful consideration** as to whether their activities constitute regulated activities.

Cryptocurrency & exchange
- EU governments and ECB planning to regulate cryptocurrencies, due to potential terrorism financing and tax evasion
- EU-wide plan for exchanges to carry out due diligence on buyers

ICOs
- ESMA concerned that investors may be unaware of high risks of ICO investing
- ESMA concerned that firms involved in ICOs conduct activities without complying with relevant applicable EU legislation

Implications
- Europe (including UK and Switzerland) as the most thriving ICO ecosystem

Source: PwC Strategy& analysis
Asia, Singapore and Hong Kong impose favorable regulations – China banned crypto exchanges and ICOs

### Asian regulation

<table>
<thead>
<tr>
<th>Country</th>
<th>Overall attitude towards crypto-currencies</th>
<th>Cryptocurrency &amp; exchange</th>
<th>ICOs</th>
<th>Implications</th>
</tr>
</thead>
<tbody>
<tr>
<td>Hong Kong</td>
<td>![thumbs up] Positive attitude</td>
<td>![thumbs up] Exchanges are considered as Money Service Operators and regulated by Customs and Exercise Department on AML/CTF (2014)</td>
<td>Distributed tokens may be considered as securities (Sep 2017)</td>
<td>Has become a jurisdiction of choice for ICOs</td>
</tr>
<tr>
<td>Singapore</td>
<td>![thumbs up] Positive attitude</td>
<td>![thumbs up] Favorable regulatory clarification on cryptocurrencies &amp; exchanges (2014)</td>
<td>The Monetary Authority of Singapore (MAS) will continue to monitor ICO industry and consider more targeted legislation if necessary</td>
<td>Has become a jurisdiction of choice for ICOs</td>
</tr>
<tr>
<td>China</td>
<td>![thumbs down] Negative attitude</td>
<td>![thumbs down] Tokens treated as non-monetary digital asset</td>
<td>The People Bank of China (PBoC) imposed a nationwide ban on cryptocurrency exchanges in Sep 2017</td>
<td>Expected to resume ICO market eventually but with regulatory framework</td>
</tr>
</tbody>
</table>

**Tokens treated as:**
- Virtual commodity in Hong Kong
- Security in Singapore
- Non-monetary digital asset in China

**Cryptocurrency & exchange:**
- Offices are considered as Money Service Operators and regulated by Customs and Exercise Department on AML/CTF (2014)
- Distributed tokens may be considered as securities (Sep 2017)

**ICO:**
- If security token, under exiting securities regulation
- If utility token, no regulator involvement required

**Implications:**
- Has become a jurisdiction of choice for ICOs
- Established service provider eco-system

Source: PwC Strategy& analysis
Overview

Spotlight Crypto Valley Switzerland

Emerging ICO Regulation

Outlook
More ICO regulation expected in near future – best-in-class ICOs and areas of excellence will shape industry

Future of ICOs

**Institutional mind-set**
- Best-in-class ICOs are setting up new standards ranging from proper KYC and AML to governance and focus on legal entity set-up
- Teams behind those industry-shaping ICOs generally have a long-term business building mindset and work together with top tier partners, advisers and service providers

**Focus areas**
- Key areas like governance will gather more attention in the upcoming months following recent public scandals
- KYC and AML are important focus areas – should go beyond blocking token purchasers from certain countries and ensure transparency on token holders in general
- Following recent hacks, cybersecurity will continue to remain high on priority list

**Shift to Asia**
- Areas of excellence, like Hong Kong, Singapore and Switzerland, are shaping ICO space, since clarity on regulation is given and communicated clearly
- Those areas of excellence further have established ecosystems of service providers and a broad talent pool
- New jurisdictions with promising ICO positioning are emerging – less ICOs in US expected due to restrictive IRS and SEC

**Fund raising**
- Fund raising may become a bigger challenge in the upcoming months due to issues during recent token sales – many investors are deciding to stay on the sideline
- Further regulatory clarity, the media buzz around Bitcoin and the entry of more traditional players in the crypto space should encourage more institutional investors to warm up to ICOs

**Regulatory**
- Regulators are expected to continue issuing ICO statements
- Enforcement cases where regulators seek to set examples of questionable ICO transactions are likely to increase (e.g. as SEC’s most recent actions)
- Regulations around ICOs and crypto exchanges would be welcomed by many in the crypto community, as it gives additional comfort to the public but also facilitates business for crypto & blockchain companies

Source: PwC Strategy& analysis
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