

UNDERSTANDING INITIAL COIN OFFERINGS

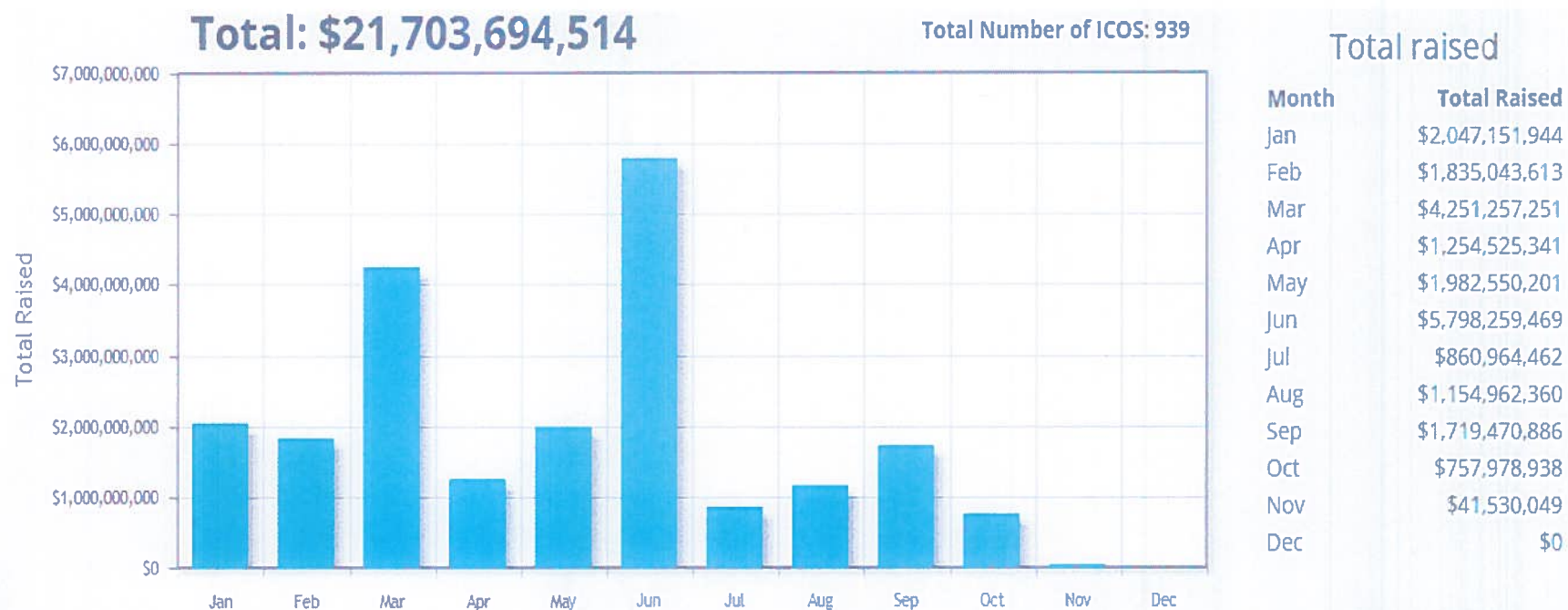
Capital Markets Board Of Turkey

Intermediary Activities Department

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ICO Market

- Organizations have raised over \$21 billion through initial coin offerings (ICOs) since January 2018.
- It was \$6 billion in 2017.



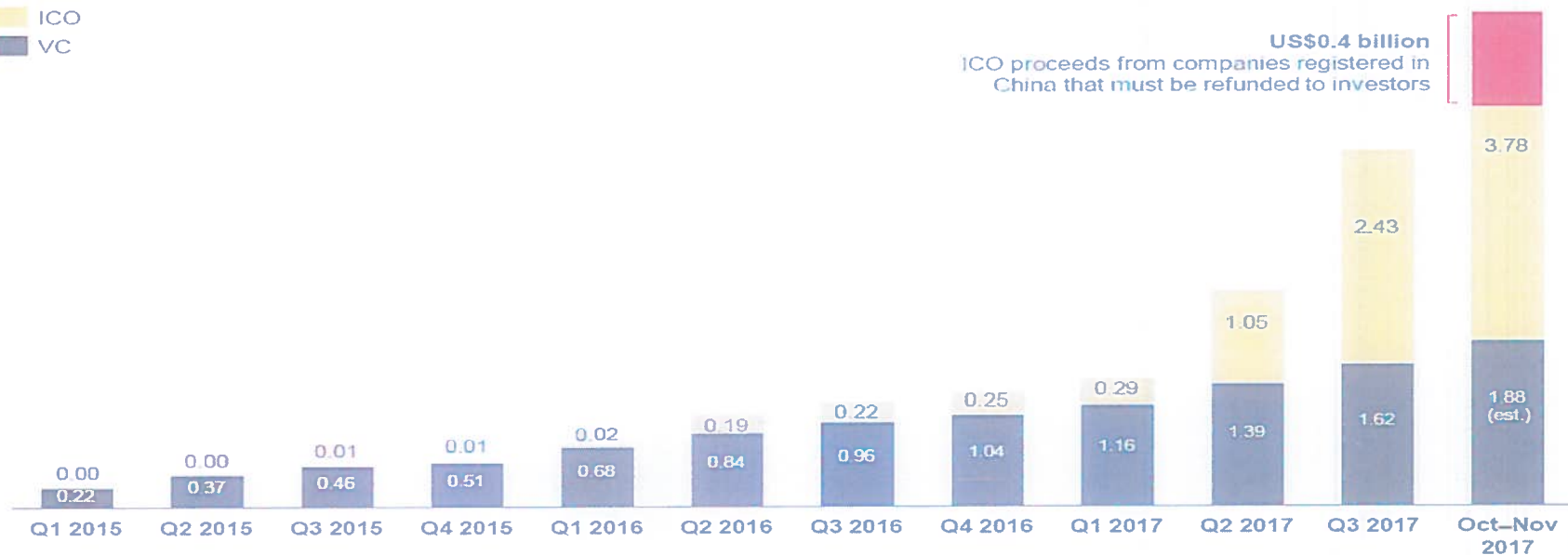
Totals raised are grouped by the ICO closing date and are valued using BTC exchange rate at that time. Data last updated on 7th November 2018 10:19 UTC

ICO Market

- Total ICO proceeds are approaching US\$4 billion and have exceeded venture capital investments in blockchain projects

Cumulative ICO/VC funding
US\$ billion

ICO
VC



Data based on open sources – ICO market is not regulated, there is no standardized reporting and volatility is high.

Sources: CoinDesk, CB Insights, IFCERT

Technical Attributes of ICOs

- **Blockchain:** A blockchain is a distributed digital ledger in which bundled records of transactions (“blocks”) are chronologically linked and cryptographically secured.
 - **Github:** Github is a webbased repository for code and collaboration.
 - **Cryptocurrencies:** Cryptocurrencies (sometimes referred to as virtual currencies) are digital assets that use cryptography to validate transactions.
 - **Platform:** An ICO platform is a software platform in which an ICO can be conducted and token transactions can be validated.
 - One technical specification, ERC20, has become a de facto standard for Ethereum ICOs.
 - own native blockchains
 - **ERC20:** A technical standard featuring a list of software functions that tokens on the Ethereum blockchain should implement.
 - **Turing-complete:** A programming language is said to be Turing-complete if it can theoretically be used to express all tasks accomplishable by computers.
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Technical Attributes of ICOs

- **Smart contracts:** An automatically executing program in a blockchain or distributed ledger.
 - **Exchange:** A marketplace in which cryptocurrencies and tokens are traded.
 - **Decentralized exchange:** A decentralized exchange is an exchange that does not rely on one central party to hold and transact the customer's cryptocurrencies.
 - **Mining:** Mining is the process in which transactions are cryptographically validated and securely added to the blockchain.
 - **Proof of work:** The most common mining mechanism. requires miners to expend significant computational resources to find a solution to a mathematical problem.
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What are ICOs

- **An initial coin offering (ICO), also known as a;**
 - token sale,
 - token generating event,
 - or initial token offering,
 - ICO is an event in which an organization sells digital tokens for the purpose of obtaining public capital to fund software development, business operations, business development, community management, or other initiatives.
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What is Token ?

- **A token is a cryptographically secured digital representation of a set of rights.**
 - Depending on the token, this could include the right to;
 - access and use a network or software application,
 - redeem the token for a unit of currency or a good,
 - receive a share of future earnings,
 - vote on decisions made by the organization, or more.
 - After ICO, Some tokens gain usage value
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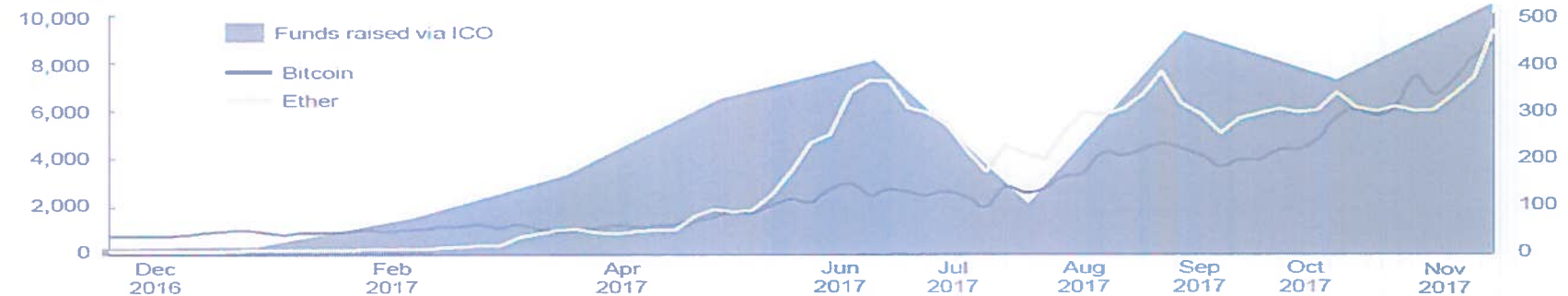
Key features of ICOs

- Organizations that conduct ICOs tend to be small blockchain-based startups who hope to grow significantly using the funds obtained.
 - Prior to the actual token sale, organizations issue white papers describing their plans and mission, as well as the technical characteristics of the token.
 - Many organizations may also have an opensource code base that is available for review on Github.
 - During an ICO, token buyers generally contribute fiat currency (e.g., USD) or cryptocurrency (such as ether (ETH) or bitcoin (BTC)) to a specified cryptographically generated address.
 - In a public sale, anybody who has the capacity to purchase, transmit, and store cryptocurrencies can be a token buyer.
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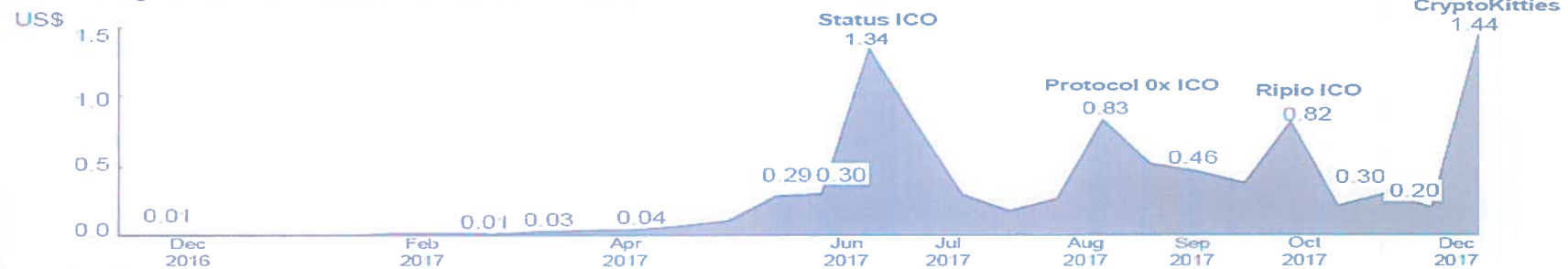
Contribute Cryptocurrency

- ICOs fuel demand for Ether and bitcoin (BTC); growth of Ether price leads to an increase of transaction costs on the Ethereum network

Growth in BTC ETH price/funds raised
BTC/US\$



The average cost of transactions in Ethereum network
US\$

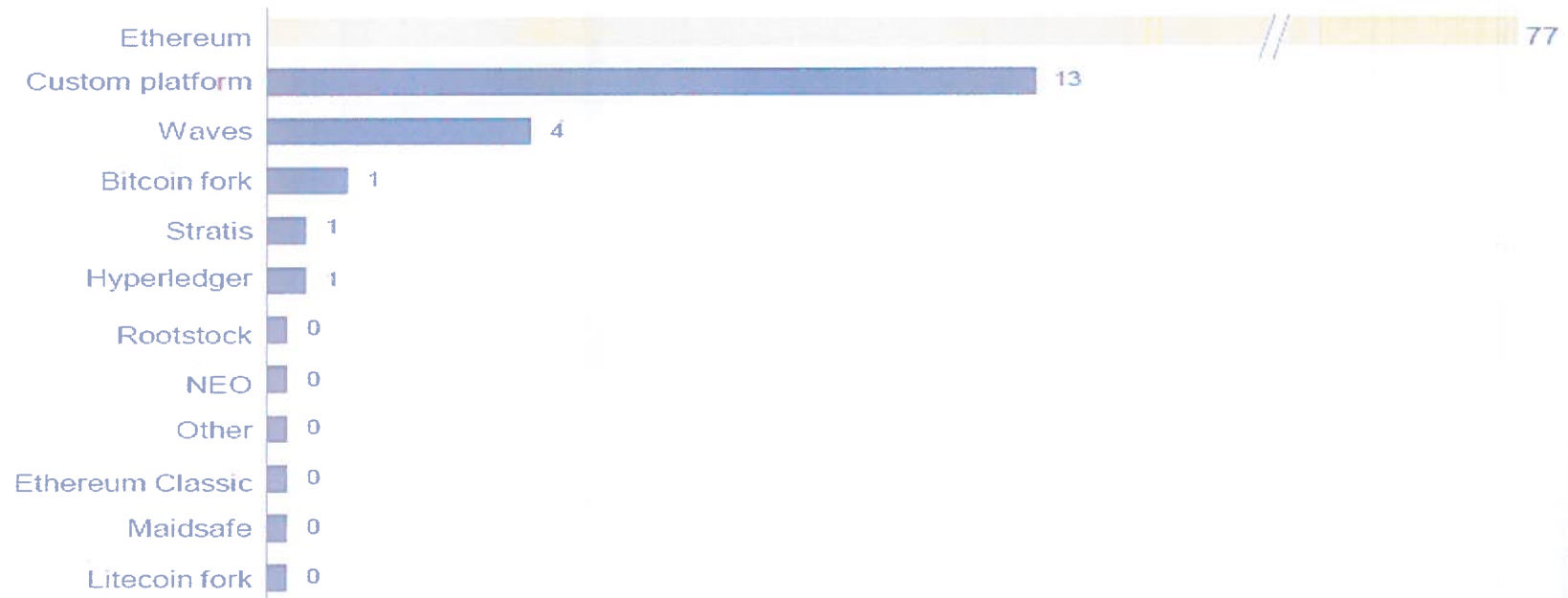


Sources: CoinMarketCap, CoinDesk, BitInfoCharts

ICO Platform

- Ethereum – leader among platforms for ICOs

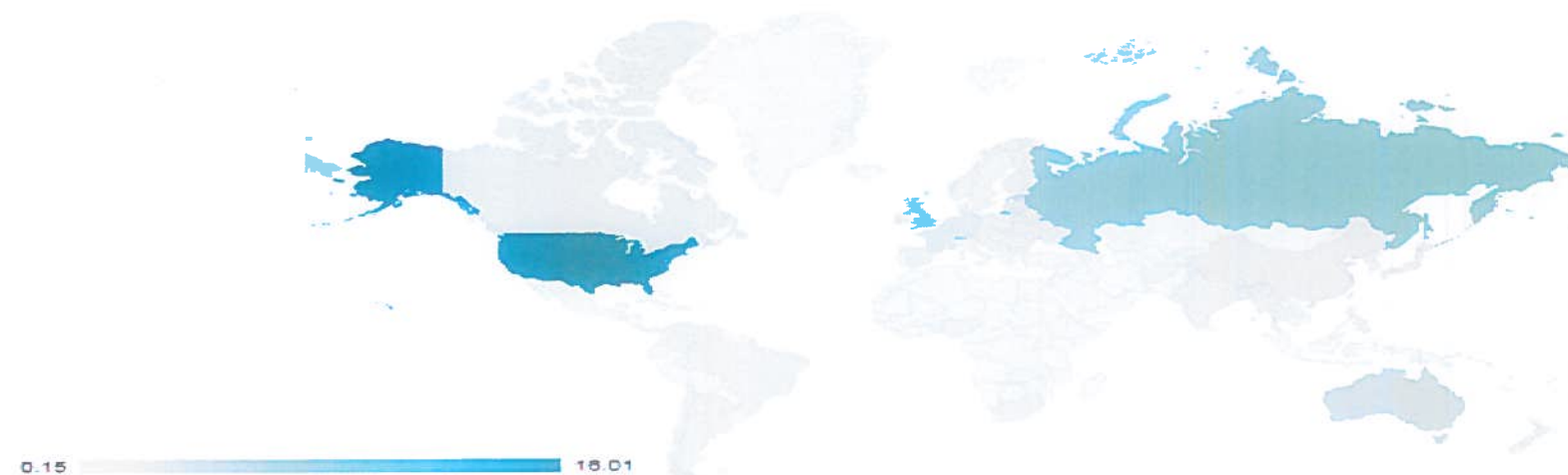
Market share of blockchain platform for ICOs
% of total number of projects



Source: ICO Watch List, December 2017

ICO Projects By Country

- Most ICO projects originate in the US, UK and Singapore



Country	% Of Projects	Total Raised
United States	18.01%	\$875,335,669
United Kingdom	9.54%	\$184,881,953
Singapore	8.37%	\$349,652,530
Russian Federation	7.05%	\$1,003,216,724
Switzerland	6.61%	\$547,125,825
Estonia	4.11%	\$34,717,899

Source: ICO Watchlist

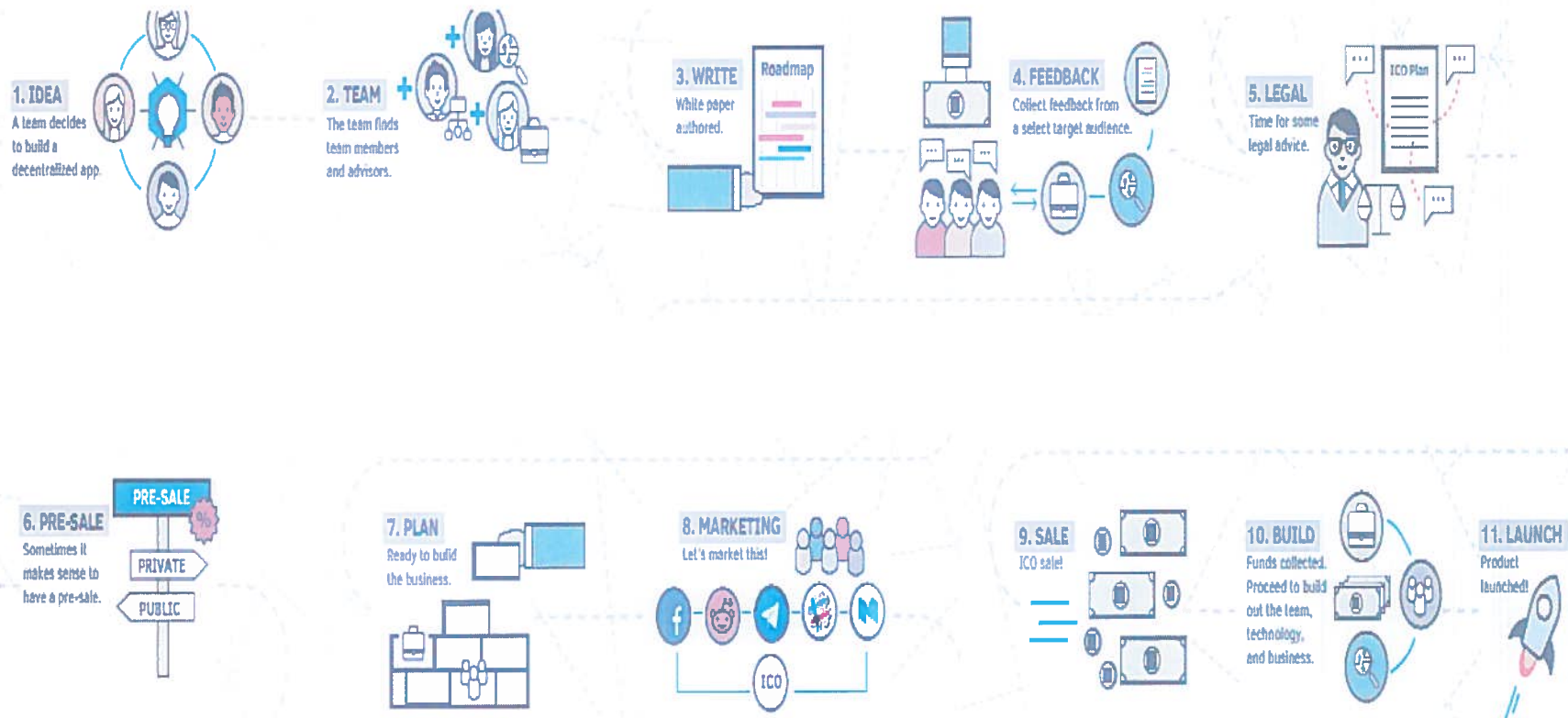
ICO Projects By Industry

- Segment leaders by volume: blockchain infrastructure, network/Communication finance and payment

Category	% Of Projects	Total Raised
Network/Communications	2.32%	\$4,640,447,641
Blockchain Platform	5.64%	\$1,688,474,626
Finance	12.16%	\$453,615,006
Drugs/Health	3.76%	\$276,868,999
Payments/Wallets	6.66%	\$247,955,940
Commerce/Retail	5.64%	\$193,172,700
Content/Advertising	2.75%	\$120,550,000
Media/Content	3.91%	\$117,510,000

Source: ICO Watchlist

Representative Steps for an ICO



Contribution Value Caps (Ceilings)

- **Hard Cap:**

- is a limit on the total contribution value that will be accepted,
- the organization will refuse to accept additional contributions once it reaches the hard cap.
- Also hard cap on the maximum contribution amount per user can be set.
- E.g: Civic ICO (Hard Cap: \$33 million, maximum contribution amount per user \$25k.)

- **Soft Cap**

- is a total contribution amount which, once exceeded, will trigger a time limit on the remaining token offering period.
- E.g: Status ICO (Soft Cap: 12 million Swiss Francs, Time Limit: 24 hours)

- **Hidden Cap**

- which are hard or soft caps that are not disclosed to the public.

- **Uncapped**

- Anyone who wishes to contribute to the sale may contribute within a certain time limit.
 - E.g: Tezos ICO (contribute within the span of two weeks)
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Token Sale Models

- Organizations have varying approaches to pricing and allocating tokens. Some organizations have implemented auction mechanisms so that the price of the token can be wholly or partially set by community demand.
 - Different auction mechanisms may feature different advantages in terms of
 - (1) how efficiently the price of the token can reflect the economic utility of the token,
 - (2) certainty about what percentage of tokens would be received for a unit of contribution, and
 - (3) whether everyone who wishes to participate in the token sale will have the chance to participate
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Token Sale Models (Cont.)

- **Fixed exchange rate:**

- A buyer exchanges cryptocurrency or fiat currency for tokens at a fixed ratio.
- E.g: Tezos ICO (5,000 tezzies per bitcoin, early bird bonus of 20% additional tezzies.)

- **Dutch auction:**

- Bidders bid the max price that they are willing to pay and the quantity that they would be willing to buy at that price.
- All bids are collected and sorted from highest to lowest;
- the highest bids are accepted until the sum of the desired quantities is enough to sell all offered tokens.
- After the last bid is accepted, all bidders with an accepted bid will get the last bid's price for each token.

- **Hybrid capped sales:**

- The organization sets both a hard cap and a soft cap.
 - Once the token sale meets the soft cap contribution amount, then the remaining token sale period is limited to a short period of time.
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Token Ownership Distribution

- During an ICO, the organization normally does not sell all its tokens.
 - Some organizations conduct a token pre-sale (also called the pre-ICO) before a full ICO.
 - Early buyers, often at a discount.
 - **No Mining (or “Completely Premined”):**
 - No new tokens are generated through mining
 - **Partially Pre-Mined:**
 - Partially Pre-Mined: All tokens are generated through mining, but a central organization has already “premined” a significant percentage
 - **Mining:**
 - All tokens are generated through mining.
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Benefits of ICOs

- ICOs have the potential to be a powerful catalyst for the development of open-source blockchain technologies.
 - ICOs could also prove to be significant drivers for financial access and inclusion by democratizing access to investments.
 - ICOs are popular for multiple reasons:
 - For organizations that issue tokens
 - For investors and donors
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Benefits of ICOs (organizations)

- **A built-in customer base:** a token sale is a way to gather a committed group of customers
 - **Positive network effects:** generates positive network effects that can vitalize and strengthen decentralized applications
 - **A new model of financing for open-source projects:** encourage growth in open-source development and innovation.
 - **A fast and easy fundraising mechanism: Anyone can initiate and participate an ICO.**
 - **Primarily online marketing:** Tokens can be marketed over the internet to a large, general audience.
 - **Settlements over the blockchain:** a public ledger would enable the organization to easily track the reference of tokens.
 - **A warm reception from retail investors:** Retail investors and donors are currently enthusiastic
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Benefits of ICOs (investors)

- **Easily transferable:** It is frictionless to send and receive tokens
 - **Liquidity:** Popular tokens have liquid markets on cryptocurrency exchanges.
 - **The network effect of value creation:** Widely distributing tokens incentivizes token holders to support the growth and development of the organization and network, since holders wish to maximize their token value.
 - **Democratizing investment:** The ICO method generally allows anyone in any geography to raise money.
 - **Potential for gains:** Cryptocurrencies can appreciate quickly in price.
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Token Characteristics and Economics

- Most tokens have intrinsic utility and carry a variety of underlying rights. Four common types of tokens are:
 - **Usage tokens:**
 - Usage tokens can be redeemed to access and use a product or service provided by the organization. (Filecoin)
 - **Asset tokens:**
 - Tokens that are backed by a real-life asset. (Tether)
 - **Payment tokens:**
 - Payment tokens (synonymous with cryptocurrencies) are tokens which are intended to be used, now or in the future, as a means of payment for acquiring goods or services or as a means of money or value transfer.
 - Cryptocurrencies give rise to no claims on their issuer.
 - **Security tokens:**
 - Tokens that entitle the holder to equity-like benefits, such as profit sharing and voting.
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Risks of ICOs

- ICOs may involve a variety of risks:
 - Consumer Protection
 - Market Risks
 - Regulatory Compliance
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Risks of ICOs (Consumer Protection)

- **Lack of due diligence:** There is no formal process for auditing organizations conducting ICOs.
 - **Smart contracts may have vulnerabilities which permit unexpected transfers:** Token transactions and usage abide by self-executing programs called “smart contracts.”
 - **Uncertain basis for token valuation:** Token prices may not be based upon their fundamental value.
 - **Education:** Consumers are currently tempted to invest in ICOs as they promise high returns.
 - **Unsophisticated token consumers may not be able to maintain or secure keys:** Consumers may lose control of their tokens.
 - **Phishing scams:** A scammer may fraudulently impersonate an organization.
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Risks of ICOs (White-paper)

- The most commonly used phrases in white papers:

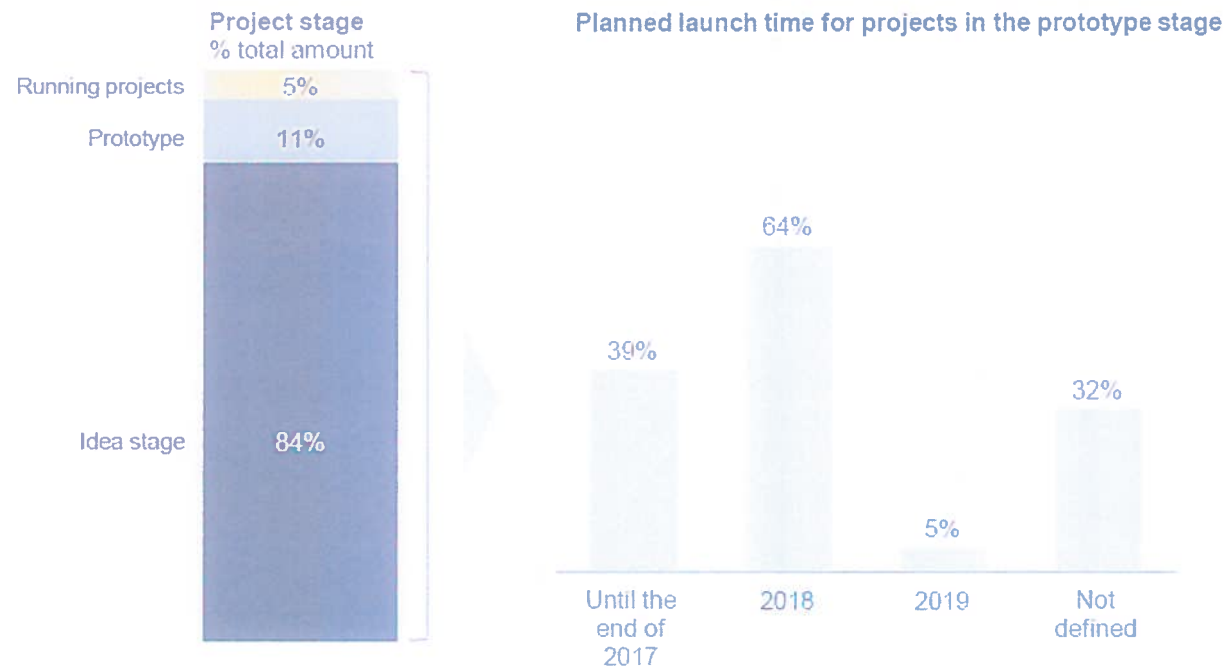
- ▶ Next-generation platform
- ▶ First project to unlock multibillion market of < ... >
- ▶ Decentralized network that puts users in control/the driver's seat
- ▶ We are creating a community/ecosystem/economy
- ▶ No corrupted central authority
- ▶ Creating a Web3
- ▶ Most undervalued token
- ▶ Making the world a better, "blockchained" place ¹
- ▶ The next decentralized worldwide cryptocurrency ... to broaden the possibilities of uses and to increase the number of users by simplifying the process of managing cryptocurrency to the maximum ²

¹ "Silicon Valley" (TV series)

² PlexCoin, assets frozen by the FBI Sources: companies webpages

Risks of ICOs (Token valuation)

- Selling the idea is easier than selling an actual service:



Source: projects' white papers, Bloomberg, Token Report, Coinschedule, RBK

Risks of ICOs(Programming)

- Smart contract code can contain hidden terms

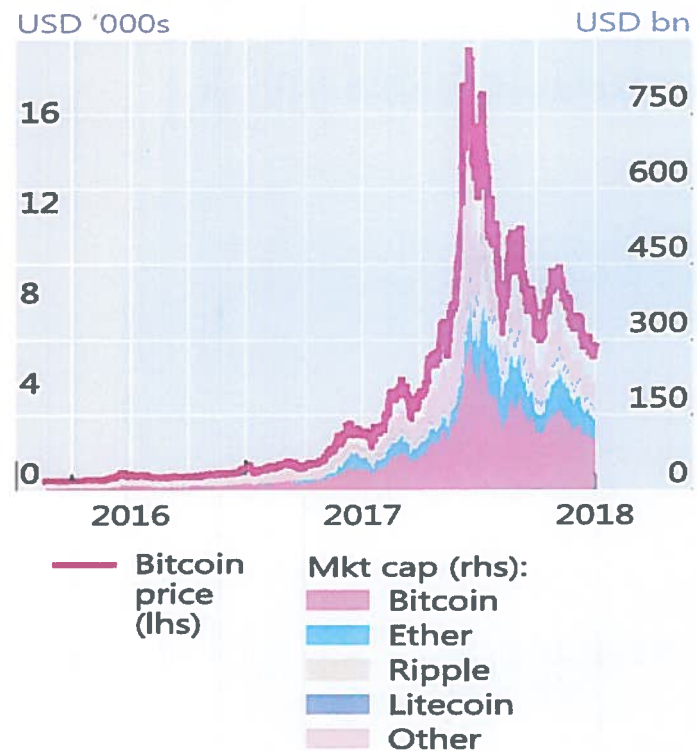
```
456 {  
457     return processContribution();  
458 }  
459  
460 /**  
461     @dev handles contribution logic  
462     note that the Contribution event is triggered using the se  
463  
464     @return tokens issued in return  
465 */  
466 function processContribution() private  
467     active  
468     etherCapNotReached(msg.value)  
469     validGasPrice  
470     returns (uint256 amount)  
471 {  
472     uint256 tokenAmount = computeReturn(msg.value);  
473     assert(beneficiary.send(msg.value)); // transfer the ether  
474     totalEtherContributed = safeAdd(totalEtherContributed, msg  
475     token.issue(msg.sender, tokenAmount); // issue new funds t  
476     token.issue(beneficiary, tokenAmount); // issue tokens to  
477  
478     Contribution(msg.sender, msg.value, tokenAmount);  
479     return tokenAmount;  
}
```

Risks of ICOs (Market Risks)

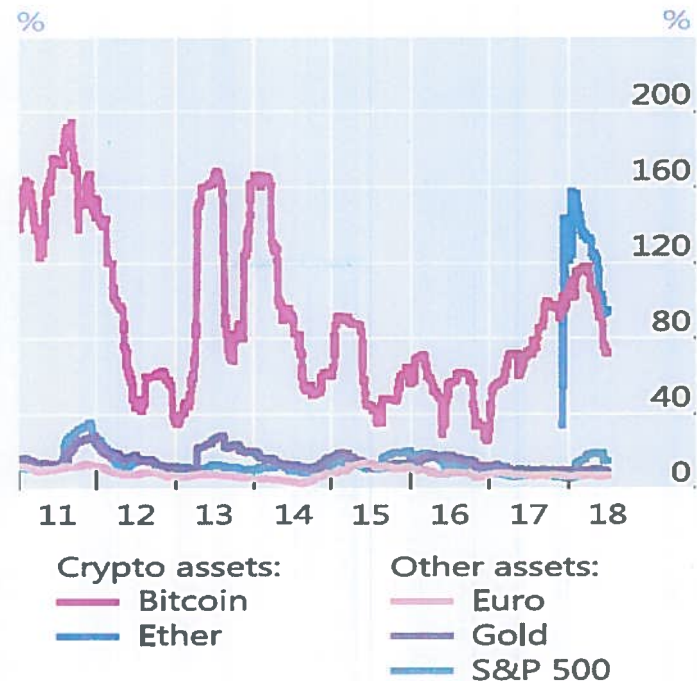
- **High price volatility:** The prices of tokens are highly volatile.
 - **Market movements attributed to ICO cash outs:** Organizations that have amassed large stores of ETH or BTC during ICOs will cash them out for fiat currency .
 - **Market manipulation:** (Whales, Pumping and dumping, Spoofing, Front running)
 - **Network lag during large ICOs:** Some token transactions may not be able to be confirmed in a timely manner at certain times.
 - **Token distribution mechanisms:** The methods through which tokens are distributed to contributors can be erratic, unpredictable, and exclusive.
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Risks of ICOs (Volatility)

Closing price and market capitalisation



Price volatility¹



¹ Ninety-day moving standard deviation of daily returns.

Source: FSB

Risks of ICOs (Regulatory Compliance)

- **Anonymous or pseudonymous token buyers:** Since tokens are sent to and from cryptographically generated addresses, token buyers cannot be easily identified.
 - **Tax evasion:** Consumers may not know about the tax implications associated with buying and selling tokens.
 - **Uncertain regulatory schema:** Organizations conducting ICOs may be subject to the financial regulations of multiple jurisdictions.
 - However, the regulatory landscape is still in a larval and ambiguous stage. Most governments have not issued a definitive statement on how ICOs will be regulated.
 - **Potential money laundering:** There is increasing concern that ICOs could be used to finance terrorist organizations, or to launder criminally- derived money and reintroduce it into the system.
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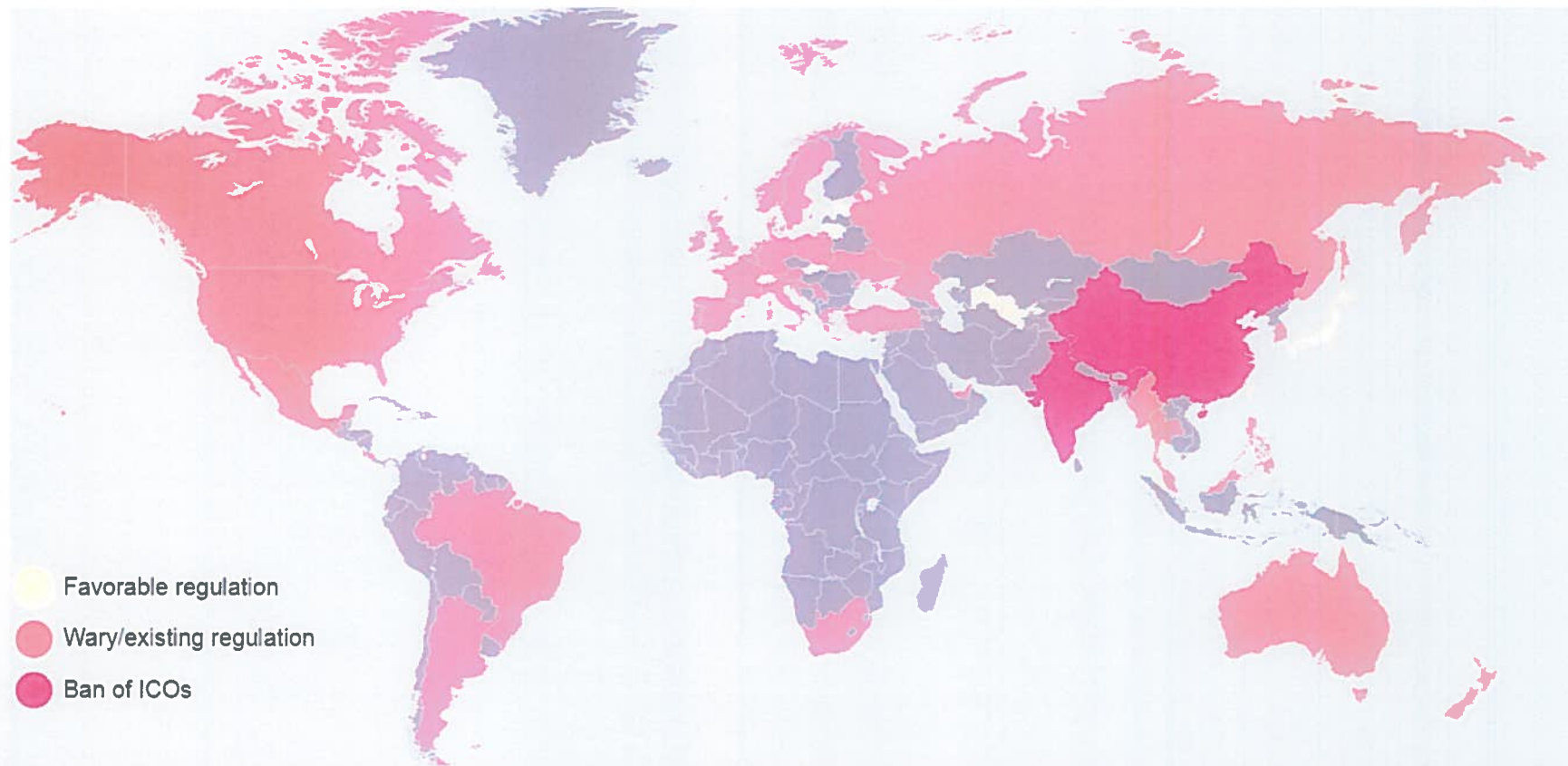
ICOs v. IPOs

	ICOs	IPOs
Stage	Generally early stage.	Generally late stage.
Asset	Tokens.	Shares of equity.
Legal/Regulatory Environment	Ambiguous & developing.	Complex.
Underlying Rights	Customized.	Share of ownership and/or profits.
Organizations	Primarily blockchain/distributed ledger organizations.	Companies in any industry.
Liquidity	Centralized & decentralized cryptocurrency exchanges.	Securities exchanges.
Filings	White paper & blog posts.	Registration statement, annual & quarterly reports, & other disclosures.

Regulatory Considerations

- Regulators around the world ;
 - are starting to monitor this phenomenon
 - and are expected to take formal positions in the coming weeks or months.
 - To ensure investor protection, many national authorities have begun to issue guidelines for investors seeking to invest in ICOs.
 - More and more countries are starting to Express;
 - concerns regarding the token instrument
 - and the risks associated with token transactions, distributions, usages, and education.
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Global ICO Regulatory Treatment



Source: PWC

Global ICO Regulatory Treatment

Global ICO hubs

 USA	 Switzerland	 Singapore
<p>  Overall positive attitude, but market still awaits more clarity on protectionary regulations </p> <p>  All tokens treated as securities as per current communications </p> <p>Cryptocurrency & exchange</p> <ul style="list-style-type: none"> • Each of the 50 states can have their own regulations (e.g. BitLicense) • SEC retains jurisdiction over ICOs and definition of security tokens • FinCEN requires all exchange to register <p>ICOs</p> <ul style="list-style-type: none"> • Definition of security very broad (e.g. Howey Test) • Strict SEC rules have dissuaded international issuers from raising capital from participants in the US to date <p>Implications</p> <ul style="list-style-type: none"> • ICOs are increasingly beginning to register with the SEC • Market awaits further regulatory clarity and alignment of state and federal rules 	<p>  Overall positive attitude towards cryptocurrencies </p> <p>  Tokens treated as assets </p> <p>Cryptocurrency & exchange</p> <ul style="list-style-type: none"> • No special license required for cryptocurrency businesses • Favorable treatment in line with Swiss Anti-Money Laundering Act <p>ICOs</p> <ul style="list-style-type: none"> • Swiss Financial Market Supervisory Authority (FINMA) reviews new ICOs on a case-by-case basis • Focus on AML and security regulations • Regulations depend on function of tokens (payment, utility or asset/ security tokens) <p>Implications</p> <ul style="list-style-type: none"> • Zug/ Zurich well known as "Crypto Valley" with established ecosystem • Favored choice for many ICOs, especially EU and Asia based projects 	<p>  Overall positive attitude towards cryptocurrencies </p> <p>  Tokens treated as assets </p> <p>Cryptocurrency & exchange</p> <ul style="list-style-type: none"> • Overall favorable regulatory treatment • Monetary Authority of Singapore (MAS) report (Nov 2017) issued guidelines and will not regulate virtual currencies, but rather the involved activities • MAS mandated that intermediaries of cryptocurrency transactions (incl. ICO) need to implement stricter due diligence and AML procedures <p>ICOs</p> <ul style="list-style-type: none"> • MAS continues to monitor ICO industry • More targeted legislation may be issued if necessary <p>Implications</p> <ul style="list-style-type: none"> • Become a jurisdiction of choice for ICOs • Established crypto/ Blockchain ecosystem

Source: PwC Strategy& analysis

Global ICO Regulatory Treatment

- **FSB:**

- in collaboration with CPMI, has developed a framework and identified metrics to monitor the financial stability implications of crypto-assets markets

- **CPMI:**

- has conducted significant work on applications of distributed ledger technology, and is conducting outreach, monitoring, and analysis of payment innovations

- **IOSCO :**

- has established an initial coin offering (ICO) Consultation Network to discuss experiences and concerns regarding ICOs
- and is developing a Support Framework to assist members in considering how to address domestic and cross-border issues stemming from ICOs that could impact investor protection

- **BCBS :**

- is quantifying the materiality of banks' direct and indirect exposures to crypto-assets
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The Situation in Turkey

- Currently there is no specific legislation in Turkey on ICOs.
 - A working group is established
 - Treasury, CMB, BRSA, Central Bank
 - To work on legal characterization and regulation of cryptocurrencies.
 - Regulatory declaration from CMB, including ICOs and crowdfunding
 - The risks related to an ICO Project are emphasized
 - Pointed out that the token sales may have certain similarities with public offerings and crowdfunding schemes
 - CMB,assesses new financing tools such as ICO in accordance with the existing legal basis for financial markets
 - Work is in progress regarding the issuance of secondary regulations on the principles and procedures regarding crowdfunding activities to be carried out under the capital market legislation
 - Continue monitoring and analysing the implications of international developments on crypto-assets
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Thank you for your attetion!
