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the compliance trilemma: challenges for ICOs

a research initiative by
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1 executive summary

Initial coin offerings (ICOs) continue to experience significant year over year growth, with 2018 on track to double the number of ICOs that took place in 2017. ICOs provide a novel way of funding projects through the sale of digital, cryptographic tokens (“digital assets”). The use of blockchain technology allows token issuers to efficiently gain access to global customers, partners and capital.

Over the past year, ICOs from both traditional companies and non-profit projects (such as EOS) have raised astronomical levels of capital. However, as issuers strive to meet the regulatory standards for issuing and tracking digital assets, they currently face significant barriers that result in tradeoffs that hinder the true potential of ICOs.

These challenges broadly stem from the cost of complying with regulation. In 2017 there was significant ambiguity surrounding whether and how digital assets were regulated, and many issuers neglected this dimension altogether. While many ICOs were well-intentioned, others could not resist exploiting the prospect of unlimited access to global investors. Early ICOs could often raise more with savvy marketing than a well-reasoned project plan, and a large number of early ICOs were little more than Ponzi schemes. Today, regulatory clarity and enforcement are essential if ICOs are to become a safe and legitimate fundraising mechanism. This has come to the attention of regulators around the world who have generally concluded digital assets issued by profit seeking companies to fund the development of a new application constitute security offerings.

While crucial, this regulatory classification of tokens has also meant that the cost of ensuring compliance in the primary sale and secondary trading of digital assets can be prohibitive. Many innovative projects by reputable actors have been put on hold as entrepreneurs and their advisors wait for further clarity on what constitutes a compliant ICO, and how this could be achieved in a cost-effective manner.

iComply Investor Services commissioned a study to better understand the challenges that ICO issuers face to meet the regulatory standards for issuing and tracking digital assets. Currently, these projects face significant barriers that result in trade-offs that hinder the true potential of ICOs. A research team from the University of British Columbia (UBC) conducted more than 45 interviews and dozens of observations from industry experts to explore the past, present, and expectations for the future of ICOs from diverse perspectives. The research collaboration was supported by Mitacs’s Accelerate program.

The study found that issuers currently face a *compliance trilemma*, whereby they can achieve only two of the following three goals in their ICO: cost-effectiveness, access to widely distributed investors, and regulatory compliance. While we focus here on ICOs, the compliance trilemma also holds more generally for other decentralized finance practices involving cryptoassets. To date, ICO issuers have adopted various approaches to addressing this trilemma including:

- Sacrificing compliance by directly defying regulators while hoping to remain under the radar
- Sacrificing the scope of investment by restricting token sales to a limited group of investors
- Compromising on all three dimensions in a hybrid approach
- Forgoing the ICO entirely until this becomes more cost-effective

However, each of these approaches are suboptimal, and it is clear that a more concrete solution is needed to address the compliance trilemma.

The study also explored predictions from industry experts about how they expected the compliance trilemma to be resolved, and found the majority tended to advocate new regulatory rules and definitions that could relax what is referred to as the “burden” of compliance on issuers. Such an approach places the onus squarely on regulators, who would need to coordinate within and across jurisdictions to reach a coherent regulatory framework that appeases the challenges and costs of compliance for issuers. However, we argue that holding regulators solely accountable for the compliance trilemma is incomplete and misguided, and that other approaches are needed to reduce the cost and uncertainties of regulatory compliance.

An alternate solution that would enable the market to realize the full benefit of ICOs can be made possible using RegTech (regulatory technology) to significantly reduce the cost of compliance for token issuance and in the secondary market. The key innovation lies in automated compliance technologies, such as the iComplyICO Prefacto dApp protocol, which uses algorithms to determine how digital tokens can be held and traded. Once these rules are coded into the tokens, non-compliant trades can be flagged or blocked, effectively resulting in *prefacto* (i.e. ‘before the event’) compliance. These rules are customizable across jurisdictions and can be updated as needed to reflect changes in regulation or in token status (e.g. from security to utility).

RegTech solutions can ensure automated compliance for the lifetime of digital assets, thereby dramatically reducing the ongoing cost of compliance. This dissolves the compliance trilemma by enabling issuers to reach widely-distributed investors across multiple jurisdictions in a highly cost-effective manner. Through the automation of compliance in digital asset issuance and trading, we envision a future where regulators can focus less on policing compliance through backwards-looking audits, and more on proactive, real-time monitoring.

This report elaborates the thesis above by tracing the past, present and future of ICOs through the eyes of multiple stakeholders and outlining how present challenges can be resolved to enable compliant, distributed, and cost-effective ICOs.

2

background & introduction

We must defend our own privacy if we expect to have any. We must come together and create systems which allow anonymous transactions to take place. People have been defending their own privacy for centuries with whispers, darkness, envelopes, closed doors, secret handshakes, and couriers. The technologies of the past did not allow for strong privacy, but electronic technologies do.

We the Cypherpunks are dedicated to building anonymous systems. We are defending our privacy with cryptography, with anonymous mail forwarding systems, with digital signatures, and with electronic money.

- Eric Hughes, 1993. *A Cypherpunk's Manifesto*¹

As the above statements from Eric Hughes's 1993 manifesto indicate, the notions of privacy, digital ownership, and disintermediated peer-to-peer trading have a rich ancestry spanning back to before the commercial internet. However, it was not until after 2009 that this began to truly break into the public consciousness, after the Bitcoin network enabled the organization of large networks of peer-to-peer value exchange between pseudo-anonymous individuals.

Bitcoin was the first mechanism that offered individuals the ability to store and transfer value at a low cost and without the authentication of a third party. The underlying blockchain technology enabled highly efficient transactions to take place between pseudo-anonymous individuals. For the first time in the digital realm, people could place their trust in technology when transacting, rather than turning to an intermediary. Moreover, these distributed ledger technologies can transcend national boundaries and accelerate the shift to a truly global virtual economy.

While Bitcoin represented a huge step in realizing the vision of the fringe Cypherpunk movement, the rest of the world began to take note of the significant benefits afforded by blockchain technology. Entrepreneurs realized that if they coupled blockchain technologies with smart contracts - self-executing protocols that can verify and settle an agreement between two parties once a given "if-then" statement is satisfied - they could build distributed applications (dApps) for all types of processes. To raise the initial capital to build dApps, entrepreneurs could issue and sell digital assets (cryptographic tokens) that could be used in their completed application; a process we now know as the initial coin offering (ICO).

However, if digital tokens are issued to fund a profit-seeking venture, they are likely to be defined as securities and regulated as such. Regulation exists to protect the investor, and the investor must therefore relinquish total anonymity if they are to invest in an organization. The drive for privacy and the mandated need for organizations to ensure investors are legally able to hold the digital assets they issue have manifested substantial complexity in the ICO space.

In this report, we unpack how we got to this point, how various actors in the ICO space currently perceive this, and propose a way forward that could enable the next stage of ICO evolution. We postulate that regulatory technologies such as iComplyICO's automated compliance protocols will be instrumental in unlocking the full benefits of ICOs, by dramatically reducing the costs of complying with regulation whilst still enabling widely distributed access to investors.

1 <https://www.activism.net/cypherpunk/manifesto.html>

2.1. Scope of this Report

At this point it is important to reiterate our focus: there are many kinds of token issuances and here we broadly distinguish between two types. We briefly outline each below to outline the scope of this report.

On the one hand, some of the biggest and most noteworthy ICOs have been issuances of tokens that support the creation and maintenance of highly decentralized, open-source protocols. These are generally supported by not-for-profit organizations such as foundations. Because there is no central enterprise, the supply and value of tokens are not directly controlled by any single actor these tokens are therefore less likely to be considered securities by regulators. For example, the SEC has suggested that Ether, the native token on the Ethereum blockchain, is not a security token due to the decentralized structure of the Ethereum network². While important, these non-profit token issuances comprise the minority of ICOs.

More commonly, ICOs are conducted by profit-seeking ventures, that issue cryptographic tokens to finance the development of new business offerings. Often, these offerings may be distributed applications (dApps) built atop one of the open-source protocols described above, in which case the tokens are typically intended to be used as units of currency once the application is operational. This is not the only purpose of a token issued by an ICO, and multiple other models are possible, including tokens issued for managed funds, tokens representing real-world assets that can be traded, and tokens that directly represent equity in an organization. Moreover, the venture at the centre of these projects could be either a startup or an established company entering the blockchain space. In each of these cases, tokens issued are far more likely to be subject to securities regulations, and must fulfil Know Your Customer (KYC) and Anti-Money Laundering (AML) requirements and other relevant obligations.

While the above categorization is by no means perfect, it is useful to clarify the focus of our discussion around the latter type: ICOs that raise capital for profit-driven companies. Accordingly, we are not speaking to those seeking to build the next Ethereum, EOS, or Bitcoin, but rather to typical start-ups and other organizations looking to harness the many benefits of blockchain technology to raise capital and run their business.

2.2. Overview of the Research Contributing to this Report

This report is based on research conducted by a team at the University of British Columbia (UBC). The research project was funded by iComply and Mitacs Canada, in which the team followed the ICO space closely over six months in 2018, focusing primarily on North America but also broadening to include other nations and regulatory jurisdictions. The research team conducted 45 in-depth, qualitative interviews with individuals from multiple organizations in the ICO space, including ICO issuers, prospective issuers, consultants, accountants, securities lawyers, exchanges, venture capitalists, investment bankers, academics, and self-professed “decentralists” acting on their own behalf. It is important to note that Canadian law requires the identities of interviewees in the research project remain confidential. Consequently, all direct quotes from interviews conducted in the study are anonymized.

2 <https://www.sec.gov/news/speech/speech-hinman-061418>

3

history: the emergence & regulation of ICOs

3.1. The Rise of the Initial Coin Offering

As a fundraising vehicle, ICOs have two significant benefits: (1) they enable unprecedented access to liquidity from a wide range of investors and customers at (2) relatively low cost. Ventures now have the option of issuing customized digital assets on an open, permissionless protocol and these can be bought and traded by individuals with unprecedented efficiency. Moreover, blockchain technologies naturally transcend national and jurisdictional borders by enabling secure payments between individuals without the oversight of a third party. In short, blockchain enables the highly efficient trading of digital assets between widely distributed individuals.

The first ICO was Mastercoin (OMNI), which raised \$500,000 in 2013, followed by Ethereum (which raised \$18.44 Million) and several other pioneering ICOs in 2014³. As with Bitcoin, the foundational principle of Ethereum is to enable the operation of distributed transactions and applications outside of third-party interference. The Ethereum Foundation's website describes it as follows: "Ethereum is a decentralized platform that runs smart contracts: applications that run exactly as programmed without any possibility of downtime, censorship, fraud or third-party interference"⁴.

By using accessible coding language and enabling smart contract programming, the Ethereum blockchain significantly reduced barriers to entry in ICO issuances and enabled a myriad of distributed applications to be built atop the public protocol. The emergence of Ethereum (and other permissionless blockchain protocols) has enabled developers everywhere to issue their own digital assets, and to sell these to individuals in the form of an "Initial Coin Offering" (ICO).

During these very early stages, ICO investors and audiences were relatively limited to true enthusiasts, and perhaps the first project to bring the extraordinary potential of ICOs into the public consciousness was "The DAO" in May 2016. An acronym for "Decentralized Autonomous Organization", The DAO was created by German company slock.it and claimed to be a "stateless" virtual organization. Its purpose was to be an investor-directed venture capital fund, and raised capital for this by issuing tokens on the Ethereum blockchain. The ICO rapidly attracted over \$150 Million USD from over 11,000 investors.⁵ At the time, there was rampant debate surrounding whether these tokens were securities or not - a debate that remained unresolved until more than a year later. In June 2016, vulnerabilities in The DAO's code were exploited by a user, who used this to siphon off around \$53 Million USD from the fund. This catalyzed a debate over whether this exploitation of the code was legitimate, and whether the tokens should be returned via a hard fork of the Ethereum blockchain. The community voted to hard fork Ethereum, resulting in the separation of Ethereum from "Ethereum Classic", and returning the stolen Ether to their original owners.

3 <https://hackernoon.com/the-ico-is-dead-long-live-the-ico-2-0-7bb269987513>

4 <https://www.ethereum.org/>

5 <https://www.americanbanker.com/news/the-dao-might-be-groundbreaking-but-is-it-legal>

The case of The DAO highlighted several issues with ICOs. Firstly, that it is possible for a virtual organization raise huge amounts of capital without anything tangible to show for it. Secondly, although coded smart contracts can enable highly efficient exchanges of value, these contracts need to be airtight. The significant incentives to exploit coding errors, and the low barriers to doing so, means that smart contracts on a public blockchain are subject to unprecedented scrutiny. Thirdly, The DAO was the one of the first opportunities to evaluate the relevance and application of traditional financial regulations in the blockchain space.

In the first half of 2017, ICOs as a fundraising mechanism for entrepreneurial projects began to gain steam. In line with the underlying ethos of decentralization and distributed trust, much of this took place outside of traditional financial networks. Individuals typically entered the ecosystem by buying Bitcoin or Ether, which could be bought using fiat currencies online or in person using cash. In the absence of established institutional channels, individuals worldwide suddenly had virtually unmitigated access to these new digital assets.

Figure 1 illustrates the overall growth in ICO funding up until the end of July 2018, as recorded by CoinDesk's ICO Tracker. Collectively, ICOs had raised \$5.78 Billion USD by the end of 2017, and \$20.07 Billion USD by the end of July 2018.



Figure 1. All-Time Cumulative ICO Funding⁶

The number of ICOs issued has also been steadily rising, as has the total amount raised via ICO per month. However, total figures and averages are heavily skewed by outliers. Figure 2 illustrates the number of ICOs issued per month in 2017-2018 (grey line), as well as the total amount raised per month (yellow bars). Important to note here is that the totals for March 2018 (\$2.382 Billion USD) and June 2018 (\$5.499 Billion USD) were increased heavily by Telegram (\$1.7 Billion USD) and EOS (\$4.2 Billion USD) respectively.

⁶ <https://www.coindesk.com/ico-tracker/>

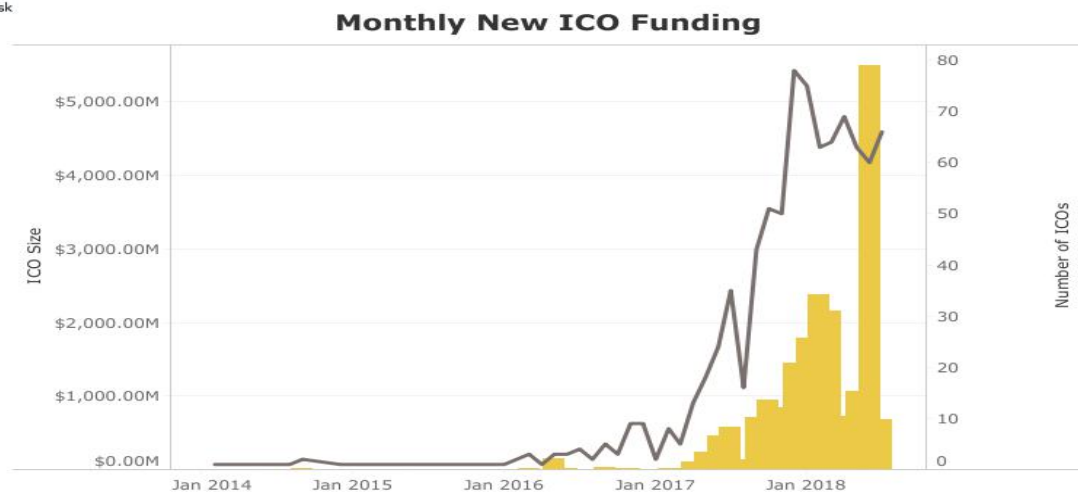


Figure 2. ICO Funding by Month⁷

3.2. The “Wild West”

Up until the latter half of 2017, regulators around the world were still preparing to clarify their position on ICOs and digital assets. In lieu of such clarifications, ICOs were often perceived as a way for new projects to raise millions with virtually no formal requirements. The consequences of this were both positive and negative. Although many of these ICOs were well intentioned, many observers saw opportunities for quick returns with limited effort. Given the novelty of the underlying technology and the concurrent growth in the price of Bitcoin and Ether in the months preceding ICO emergence, early ICOs benefitted from rampant, yet ill-informed, investor speculation, as the broader public sought to capitalize on “the next Bitcoin.”

The low entry barriers and potential to quickly raise significant amounts of funding through ICOs drew a huge number of entrepreneurs to the space. In the early days, investors were largely illiterate regarding blockchain technologies, and marketing campaigns could outweigh detailed technical specifications and a well-reasoned business case for raising capital through ICO. As an ICO consultant described:

Many projects that come to [our firm] make no sense. This is the biggest problem, and I think the media and so called “experts” make it even worse: that people don’t understand what blockchain or ICO really are, but all want to get in there.

Another ICO consultant put it even more succinctly:

There are so many projects out there where the founders are just trying to make a quick buck.

In a review of 1450 ICOs, aimed at English speaking audiences, The Wall Street Journal found 271 with red flags⁸. This included 111 technical white papers that contained:

- Entire sections of text that were copied word-for-word from others
- More than two dozen promises of guaranteed returns without any risk
- 121 ICOs that did not list a single employee

⁷ <https://www.coindesk.com/ico-tracker/>

⁸ <https://www.wsj.com/articles/buyer-beware-hundreds-of-bitcoin-wannabes-show-hallmarks-of-fraud-1526573115>

ICO websites that used stock images and fictional names for their founders and employees were commonplace, as was fraudulently listing prominent individuals within the crypto community as “advisors.”

A broader ecosystem also began to emerge around this get-rich-quick approach to ICOs. Generic technical white papers could be bought cheaply on online marketplaces or copied directly from past ICOs, and ICO consulting companies sprung up to help issuers gain the biggest returns possible. This exacerbated the spread of near-sighted and exploitative ICOs, and ICO consultants were generally regarded unfavorably by incumbent actors. As one lawyer reflected:

We are seeing more and more consultants, but to be honest with you, they don't know what they are doing. I call those consultants more “marketing companies,” unless they have done a bunch of ICOs. [...] [these firms] claim to be ICO consultants but what they are really doing is creating websites, creating wallets and creating marketing materials.

A study of just over 4000 ICOs from January 2017 to April 2018⁹ found that 11% of issuers became inactive on Twitter immediately after launching their ICO (likely indicating exit scams), while only 44.2% were still active on Twitter 120 days after their ICO, meaning that 55.8% of these likely failed or exited within the first four months. Inevitably, this combination of overwhelming initial success in fundraising with a relatively high failure rate over the subsequent months drew attention from governments and securities regulators worldwide.

3.3. The Not-So-Wild West

Throughout the second half of 2017, North American regulators began to indicate and clarify their stance of cryptographic tokens issued via ICO as securities offerings. One of the first such interpretations was provided by the SEC regarding The DAO's ICO¹⁰. The SEC classified DAO tokens as securities and thus they became subject to federal securities laws. This highlights one of the critical aspects of securities regulation: complying with the home jurisdictions of the *investors* is equally important as complying with the jurisdiction in which tokens are issued. **As such, it would not matter if The DAO was indeed a stateless organization; it still had to comply with all regulations where its investors resided.**

The SEC's decision did not necessarily reflect any inherent malice from regulators toward ICOs - the fact is that the SEC's fundamental priority is the protection of investors above all else. As SEC Chairman Jay Clayton explained in a press release:¹¹

We seek to foster innovative and beneficial ways to raise capital, while ensuring – first and foremost – that investors and our markets are protected.

Clayton reiterated this position during a speech in November 2017, stating that: “I have yet to see an ICO that doesn't have a sufficient number of hallmarks of a security”¹², and then again at a US Senate hearing in February 2018, stating that: “I believe every ICO I've seen is a security.”¹³

9 Benedetti, Hugo and Kostovetsky, Leonard, Digital Tulips? Returns to Investors in Initial Coin Offerings (May 20, 2018). Available at SSRN: <https://ssrn.com/abstract=3182169> or <http://dx.doi.org/10.2139/ssrn.3182169>

10 <https://www.sec.gov/litigation/investreport/34-81207.pdf>

11 <https://www.sec.gov/news/press-release/2017-131>

12 <https://www.wsj.com/articles/sec-chief-fires-warning-shot-against-coin-offerings-1510247148>

13 <https://www.coindesk.com/sec-chief-clayton-every-ico-ive-seen-security/>

Part of this UBC study focused on uncovering the perceptions and interpretations of prominent incumbents in the finance industry regarding the emergence of ICOs and the growing influence of regulation. Interviews revealed that those with a direct interest in the ICO space broadly fell into two camps: entrepreneurs that were perplexed at the imposition of securities regulation, and incumbents from finance and related industries who were not. A common theme amongst ICO issuers was surprise at the insurgence of overzealous regulators, bent on persecuting the heroic entrepreneur, who had until then enjoyed significant access to widely distributed investors. On the other hand, incumbent actors such as securities lawyers, accountants, investment bankers, and venture capitalists were far less surprised by growing regulatory scrutiny. As one informant elaborated, the fundamental objective of financial regulators is to prioritize investor protection over fostering market activity:

Regulators by their very nature are risk averse. There's no incentive to create a good market or create a thriving economy, but if something goes wrong, and when something falls apart, like we've seen with the Wall Street pump-and-dump days, then the regulators that are holding the bag are the ones to blame. Their nature and mentality of regulators in a risk-averse regime, is that when some of these ICOs could be either a utility, it could not be subject to security laws, they tend to favor security laws just by the nature of the beast.

Indeed, incumbents' surprise often went in the other direction, indicating that they expected regulators to be harsher rather than more lenient on ICOs. For them, it appeared reasonable that ICOs would attract regulatory scrutiny. As a securities lawyer reflected in early 2018:

To be honest, I'm really sceptical of ICOs at the moment[...] Given the extensive regulation and requirements for IPOs, it's hard to believe that regulators will just roll over and be fine with ICOs.

Many established actors and organizations were even heavily critical of the emerging cryptoasset space in general, and therefore hesitant to associate themselves with ICOs. As a finance expert commented:

Most ICOs are scams, and can be disregarded. Most of the rest are securities. Very small number of ICOs can be considered utilities. I am surprised that regulators have been so tame on this space so far, since so much bad practice is taking place, and people are getting ripped off.

This indicates that not everyone necessarily saw the ICO space as the “Wild West”, but rather a space that would (and should) be covered by established regulation. Securities lawyers and accountants tended to appraise cryptographic tokens and ICOs as they would any other financial asset and fundraising process. From the perspective of these incumbents, what was happening was more a progressive ‘clarification’ of existing regulation, rather than the ‘introduction’ of regulation as newcomers might claim.

By early 2018, most financial regulators had clarified their initial position on ICOs, and the results were mixed for issuers and other ICO advocates. While some jurisdictions indicated a favorable disposition toward ICOs, others signalled their intent to clamp down more severely, and some (such as China) even banned ICOs outright. Figure 3 presents a synthesis and comparison of ICO regulation across national jurisdictions, conducted by Bloomberg in March 2018¹⁴.

14 <https://www.bloomberg.com/news/articles/2018-03-19/is-this-legal-making-sense-of-the-world-s-cryptocurrency-rules>

Mapping the Crypto World

A visual guide to regulation in key countries

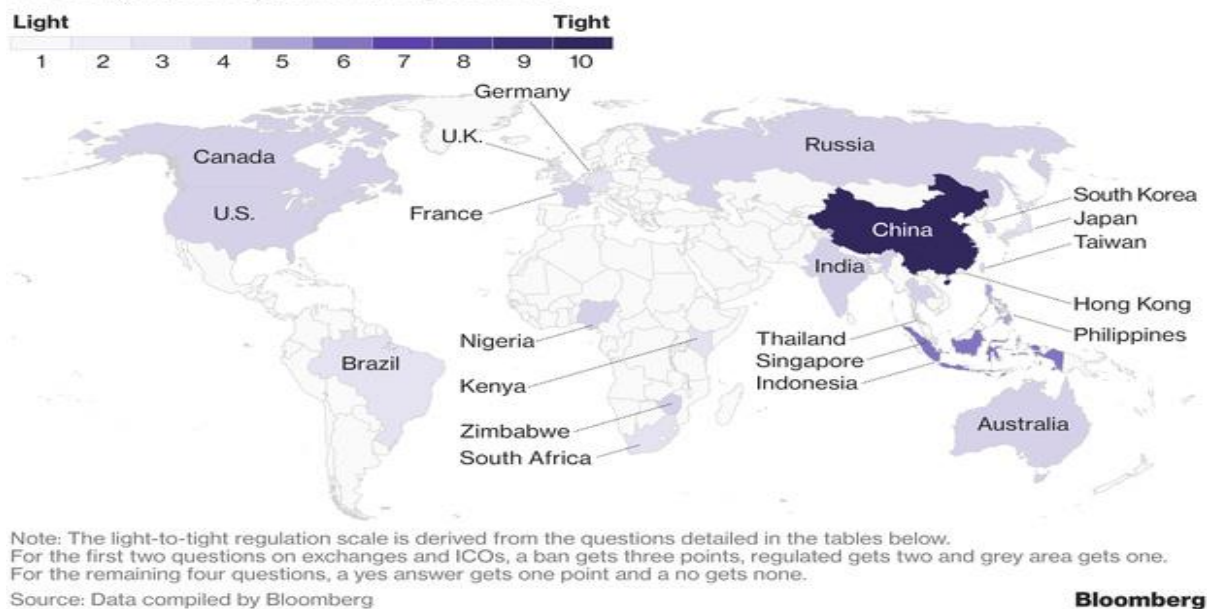


Figure 3: The regulation of cryptoassets across national jurisdictions

The map above reveals how regulators in key countries have approached cryptoassets (the scale includes the regulation of exchanges, crypto payments, conversions from virtual to fiat currencies, and any warnings issued by regulators regarding investing in cryptocurrencies). This illustrates how the regulation of ICOs and cryptoassets is part of a broader picture involving multiple dimensions. Nonetheless, even in jurisdictions deemed to be “light” in their regulatory approach - i.e. more favorable toward ICOs - authorities have by no means indicated that ICOs transcend regulation entirely.

Although ICOs were routinely painted by observers and in media as a “Wild West”, incumbents in the finance space see this as a misconception. Experts with prior experience in the finance industry often explained this misconception by suggesting that these entrepreneurs saw this avenue as fundamentally novel and separate from anything prior. If entrepreneurs in the space did not consult with lawyers, they became more likely to jump headlong into a regulatory minefield that they did not know was there. As a securities lawyer explained:

Laypeople often think that when you move into a new area, there are no laws, or that laws don't apply. So they're moving quickly, thinking they're waiting for the laws to be written. But all regulatory law is intentionally vague broad and open ended, so regulators can often catch whatever things come up.

Although many entrepreneurs felt blindsided by regulation, actors with prior experience in finance tended to paint the regulation of ICOs and digital assets as an inevitability. The introduction of regulation could dramatically increase the cost of compliance for issuers, and curtail some of the significant advantages of ICOs and other funding vehicles; i.e. the ability to reach a large, distributed pool of investors at very low cost.

4

challenges: the compliance trilemma faced by issuers

Although ICO issuers initially enjoyed cost-effective access to a broad scope of investors, the growing influence of regulation has created a web of interdependence between three dimensions. Issuers now face a trilemma (illustrated in Figure 4), whereby they can only fully address two of three goals simultaneously: (1) Having a *compliant* offering, (2) reaching a *distributed* pool of investors, in a manner that is (3) *cost-effective*.

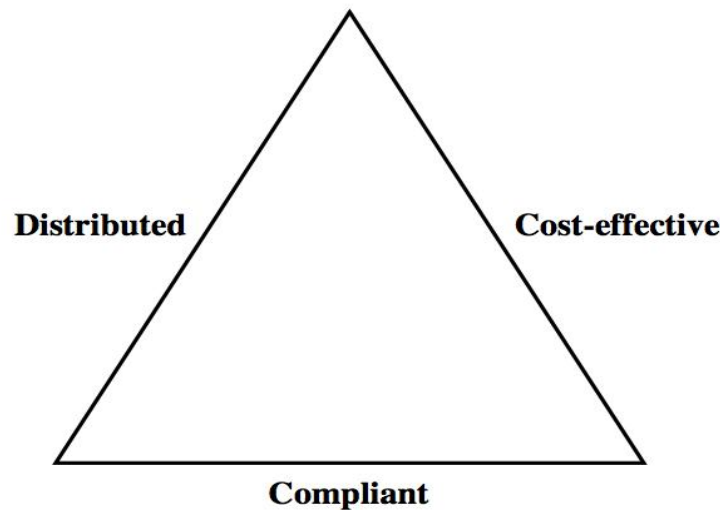


Figure 4. The Compliance Trilemma

This model is intended to be approached through the eyes of an ICO issuer. Thus, what exactly constitutes compliance, sufficiently distributed investors, and cost effectiveness are unique to the organization. We outline each of these dimensions below.

Compliance

By compliance, we mean adhering to regulation in the home jurisdictions of *both* the issuing organization and the investor. If a Canadian organization's digital assets are traded in Japan, then that organization must be compliant with both Canadian and Japanese regulation. There are multiple authorities and regulations that organizations need to comply with when issuing securities. For instance, to sell their digital assets in the USA, issuers must adhere to relevant rules set by the SEC (securities regulations), CFTC (commodities, derivatives, etc.), FinCEN (AML/KYC/BSA), IRS (taxation), and OFAC (sanctions). In this report "compliance" refers to all regulations relevant to ICO's and we acknowledge that what constitutes as compliant can vary significantly between ICOs until regulatory standards are set at the global level.

Distribution of Investors

Direct access to a widely distributed pool of investors and users, enabled by blockchain technology, is perhaps the principal benefit of ICOs as a funding vehicle. As outlined above, blockchain ledger technologies transcend national boundaries by enabling the highly efficient and secure transfer of value between parties (regardless of their location) without the authentication of a third-party intermediary. The end result is a larger initial market and greater liquidity for the asset.

Cost-Effectiveness

Cost-effectiveness is a fundamental requirement for any strategic decision, and the issuance of digital assets is no different. Issuers will only proceed with an ICO if they perceive that the outcomes will justify the costs of issuing and ensuring compliance in secondary market trading over time. In a recent article, *The Blockchain Review* estimated that legal and compliance costs for the issuance (i.e. the primary sale) to be anywhere from \$100,00 to \$400,000 USD,¹⁵ comprising roughly one quarter of the total cost of issuance. Moreover, the ICO process itself could take between 3-6 months from strategy to ICO, excluding the time required to build and launch the platform. This timeframe is faster than the 18-27 months that is typical for an IPO¹⁶, though nonetheless a deterrent for smaller ventures seeking to raise capital more quickly, and at lower amounts than a typical IPO.

The cost of ICO compliance also encompasses the costs of monitoring secondary market trading and ensuring compliance of the digital asset over its lifetime. If a token is issued under a regulatory exemption, such as for accredited investors, then all secondary trades of that token must also fit under that regulatory exemption. When the Ontario Securities Commission approved exemptive relief in the case of Token Funder and Impak token, they put in strict requirements for the issuer in regards to secondary trading.¹⁷

Due to the distributed nature of blockchain technologies, tokens do not necessarily require a centralized interface to facilitate transactions (such as an exchange), and so it is relatively easy for investors to sell their tokens to anyone in secondary markets. This presents significant challenges for issuers, who must keep track of their digital assets over time to remain compliant.

Bringing these together, we see that the cost of complying with financial regulation becomes much greater (and increasingly prohibitive) when the investor pool becomes more distributed. If issuers forgo these costs, the risk of being non-compliant rises significantly. The result is a *trilemma*, whereby issuers currently must forgo one of these goals to realize the other two, or to compromise on all three.

As outlined above, this report focuses primarily on tokens that have hallmarks of securities, though we acknowledge that our framework may be applicable outside of these as well. Such cases are very common, since even tokens intended to have utility function in the future may begin their life as securities.

15 <https://blockchainreview.io/cost-to-do-an-ico-initial-coin-offering-marketing-fees-budget/>

16 <https://www.pwc.com/us/en/services/deals/library/cost-of-an-ipo.html>

17 http://www.osc.gov.on.ca/en/SecuritiesLaw_ord_20170921_215_impak.htm

4.1. Current Strategies for Issuance in the Trilemma

The trilemma reveals four basic options available to ICO issuers: (A) The Maverick ICO, (B) The Private ICO, (C) The Hybrid ICO, and (D) no ICO at All. These four approaches are depicted within the compliance trilemma in Figure 5 and elaborated upon below.

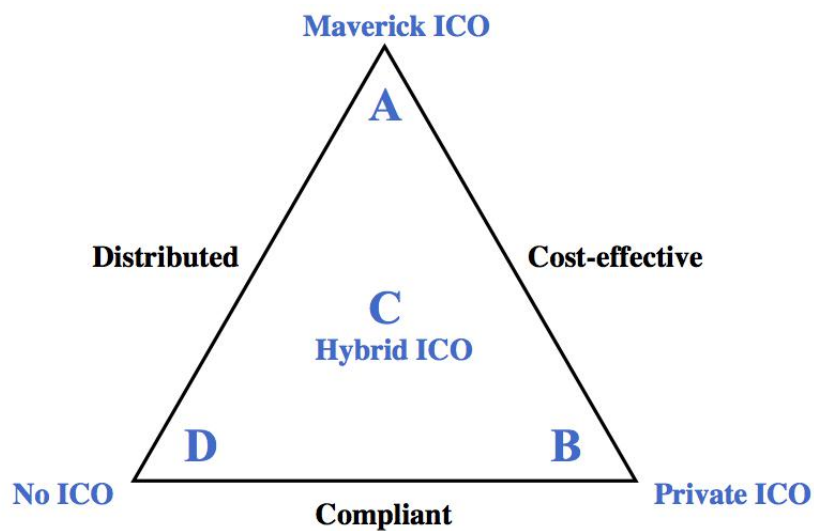


Figure 5. Four Current Approaches to the Compliance Trilemma

Important to note here is that these options are *archetypal* rather than finite, and a myriad of more detailed combinations are possible along these dimensions. Our goal in describing these options is to illuminate the underlying tensions at play, rather than providing an exhaustive list of options.

Table 1: Four Approaches to the Compliance Trilemma

| Typology of ICO | A. Maverick ICO | B. Private ICO | C. Hybrid ICO | D. No ICO |
|--|---|---|--|--|
| Description | Sacrifice compliance to maximize ICO reach and cost effectiveness | Sacrifice distribution to target only accredited and institutional investors | Compromise on all three dimensions by issuing in select markets, resulting in bounded cost effectiveness, compliance and investor scope | Don't issue because it's too costly to comply and reach sufficient investors |
| Characterizations | Exit scams, Ponzi schemes, pump-and-dumps | Restricted ICOs | Piecemeal issuance and compliance | The silent majority |
| Examples | Bitconnect | Telegram | RightMesh | Many legitimate enterprises and startups |
| Risks | Huge risk of regulatory enforcements, cease-and-desists, and legal filings. | May not raise enough to ensure cost-effectiveness. Challenges in controlling secondary market trading | A combination of all risks: Limited access to investors, challenges in controlling secondary market trading, which means a risk of sanctions | Risk missing out on access to funding |
| Supporting Actors | ICO "consultants" | Large law firms, accountants, consultants, VCs, incumbent exchanges | Service providers in select jurisdictions | Mid-sized law firms, accountants, legitimate blockchain and ICO consultants |
| Social and Economic Externalities | Investor fraud | Financial elitism: Retail investors are omitted; this option is only available to very large firms | Regulatory arbitrage: Entire jurisdictions are omitted | Ventures and economies do not fulfil their potential |

4.1.a. Option A: The Maverick ICO

First, an organization can eschew compliance entirely and strive to reach the broadest possible investor pool for the lowest cost. This closely describes the early ICOs, and some issuances still happen in this way.

Ventures that adopt this option in its entirety are often little more than exit scams. Issuers adopting this strategy have a short-term orientation, seeking only to raise as much as possible by creating as much hype as they can. One prominent example was the meme-worthy Bitconnect, which raised a significant amount whilst being roundly condemned as a Ponzi scheme, before shutting down in early 2018¹⁸.

A common ploy for ICO issuers and marketing consultants during 2017 and the early stages of 2018 was to downplay the importance of regulation by positioning their token as a utility, rather than a security. However, experts with direct experience in issuing and advising ICOs during this period suggested that many of these efforts were more symbolic than material. As an ICO marketing consultant described:

We're very careful not to tell people that they're going to make a profit off of this. Because today all of our tokens, at least from the perspective of the companies behind them, they've always tried to consider them utility tokens. Whether or not that's true, and it obviously varies based on the jurisdiction, but they've all attempted to claim utility tokens.

Maverick issuances masked as “utilities” became so commonplace in 2017 that issuers who were trying to comply with regulation by issuing demonstrable utilities felt pressured to follow this emerging practice. One such ICO issuer recounted their experience as follows:

We launched a utility token [in 2017]. And the tricky part with that is you have to be conscious that you're launching a utility token, in the way that you promote it, in the way that you position it, in the way that you build your ecosystem, in everything that flows out from that. Because yes, you do an ICO and you get the money from that, but you can't then go and inflate the value of your token, because that would be the direct opposite of what you're trying to do with utility tokens. This is what a lot of people are doing, and it's terrible. And I can tell you it was really weird, and that after the ICO a lot of people in the community were expecting us to do that, because that's par for the course. You want your token, and then you want to get in with these pump and dump groups, build the hype, ride the wave. It was so weird, because we said: “we're not going to do this”, and a lot of people got really ticked off, because the price of the coin was not inflating the way they wanted it to.

ICO issuers themselves were not solely responsible for these short-term ploys. The online and distributed nature of the nascent blockchain space prompted the rise of a nascent ecosystem of marketing consultants and other service providers that advise and market ICOs prior to issuance. These actors are typically paid, at least in part, in the tokens being issued, and so have a vested interest in inflating the price. However, they often have little interest in the platform succeeding, or even being built, beyond the ICO itself.

One example of Maverick ICO practices are the ‘bounty programs’ often run by external marketing consultants on behalf of issuers. Bounty programs originated in online gaming platforms, where developers in the community beyond the organization were rewarded for participating in game development. Marketers realized that bounty programs could be well suited to marketing ICOs, where prevalent social media influencers can be rewarded with tokens for promoting an ICO. The problem is that influencers who are rewarded with token bounties can become *investors* through this process, and so securities regulation comes into play. As one ICO consultant, who ran bounty programs for ICOs, described:

If you're compensating someone [such as an influencer] in a token that's basically a form of payment, then legally speaking, if an individual cannot participate by contributing financially themselves, they should not be contributing their work either. But we kind of look the other way on that, as do a lot of projects. Otherwise, sure, you could exclude the United States, but you're excluding a lot of English speakers when you do that, which is very problematic.

18 <https://techcrunch.com/2018/01/16/bitconnect-which-has-been-accused-of-running-a-ponzi-scheme-shuts-down/>

This shows how the incentives of ICO consultants to maximize the amount raised in an ICO, combined with their lack of accountability for regulatory compliance, resulted in the emergence of marketing practices that could directly contravene securities regulations. However, even if an external marketer is aware of this, they may persist anyway, because the organization issuing the ICO is ultimately responsible for regulatory compliance of their digital assets. Ultimately, this resulted in short-sighted external service providers working against the longer-term interests of their clients, and served to exacerbate the overall level of noncompliance via Maverick issuances.

Maverick ICOs lead to many of the social and economic problems described in the previous section; among them investor fraud and economic volatility. Moreover, eschewing compliance when issuing digital assets serves to undermine and stigmatize ICOs overall, thereby hindering the legitimization of the ICO as a viable funding process. As one business consultant lamented in an interview:

The reality is that the bulk of those things that are going on are legitimate. The problem is that we kind of get overwhelmed by the constant barrage of the negative things going on, just because they tend to be more newsworthy more clickable from the media's perspective. But this overshadows all the other great things that are going on in the industry.

In sum, the Maverick approach is not only highly risky, it is damaging to economies, societies, and the practice of ICOs more generally. In line with the compliance trilemma, the more 'successful' the ICO (i.e. the higher the amount raised), the more likely it is to attract attention from authorities. Even less prominent ICOs will likely be sanctioned at some point, as regulators continue to carefully sift through the multitude of offerings. Only the very careless would do this today, as regulators continue to make examples of prominent ICOs.

4.1.b. Option B: The Private ICO

A second option is to heavily restrict the scope of investors to accredited and institutional investors, perhaps with the intention of opening up trading to the general public later on once the platform has been built (and the token reaches utility status). Although this can simplify compliance in the primary issuance, it sacrifices the ability to reach a vast pool of investors, and still runs significant risk of non-compliance in secondary trading. Moreover, with a limited pool of investors, and correspondingly a relatively high cost of issuance per investor, these limited token offerings closely resemble more traditional private offerings, and fail to take full advantage of the distributed potential of blockchain technologies. A prominent recent example of this is the Telegram ICO, which raised \$1.7 Billion from token sales to fewer than 200 private investors via direct invitation in the first few months of 2018.

The main upside of this approach, and indeed the driving rationale, is that the issuer is better able to ensure compliance, since it can more easily keep track of its tokens by limiting the pool of initial investors to a carefully curated group.

However, there are several downsides and significant risks associated with this approach. First and foremost, such heavy centralization of investment fundamentally flies against many of the core principles of blockchain technology, such as the decentralization of power and wealth, and the empowerment of individuals. Telegram had initially planned a public sale to accompany its private issuance, but then backpedaled in May 2018 likely due to concerns of investigation by the SEC. Without reaching distributed markets, these private token sales by large organizations begin to look very similar to how equity is issued in traditional finance.

Restricted issuances also pose a risk to the issuer, since they become heavily reliant on a limited pool of investors. To help mitigate this risk, organizations may seek to appeal to large, incumbent venture capitalists and accredited investors. The outcome could be that compliant ICOs via private offerings retain, rather

than overcome, the exorbitant overhead and inefficiencies of the current financial system, and that only large organizations can afford to issue in this way. Recall that ‘cost-effectiveness’ is relative to the size of the organization and the size of the issuance – smaller ventures will simply not find private issuances a viable option.

Furthermore, even if the primary sale succeeds, the issuer may not be able to remain compliant over time. There remains a huge risk that tokens could fall into the hands of non-accredited investors through secondary market trading. Although Telegram’s tokens are not publicly listed on crypto exchanges, TechCrunch has uncovered an unofficial secondary market, about which the company can do very little to stop¹⁹. Consequently, a restricted issuance may only guarantee compliance in the primary sale, and the costs of compliance becomes significantly greater during secondary market trading (whether official or unofficial).

Overall, this option is arguably undesirable and unsustainable because it fails to take advantage blockchain’s true potential. As argued above, it contravenes many of the fundamental economic and social benefits of blockchain technologies, and perpetuates the inefficiencies and social inequities of the established financial system. Moreover, tight manual controls in the primary sale, such as invite-only investments, do nothing to ensure compliance in secondary market trading. A core tenet of blockchain is that it enables the secure transfer of value between two parties, without the need for a trusted intermediary. Consequently, although a token issuer can take steps to manually control the secondary market trading of its digital assets, such steps are not built in to this approach and incur significant ongoing cost.

4.1.c. Option C: The Hybrid ICO

A third option is to compromise to some extent on all three objectives when issuing an ICO. While there are a myriad of possible combinations here, we review some of the common types that illustrate the potential benefits and pitfalls of this approach.

The compromises made in this approach can be made more apparent by contrasting it with Options A and B above. This hybrid approach can be distinguished from Option A (maverick ICO), in that the issuer takes practical (rather than merely symbolic) steps to comply with regulation. This approach can also be distinguished from option B (private offering) in that issuers take greater risks of non-compliance in an attempt to reach a broader set of investors.

The hybrid approach can take many forms. The experience RightMesh and the RMESH token is an excellent example of what is required when a company wants to be compliant with securities regulation, yet wants to have as wide a distribution of their token as possible. The RightMesh team set up a Swiss entity and structured their token in a way that under Swiss law it would be categorized as a payment token and not a security. The RightMesh team ensured rigorous compliance with KYC/AML requirements by hiring a law firm to manually screen investors. In order to ensure that RightMesh was not selling tokens into jurisdictions where they would be considered securities, the company excluded certain geographical areas, performed their own regulatory research, and received legal opinions on the classification of the token in more than 27 jurisdictions²⁰. This manual verification of investors, research of regulatory jurisdictions, and selective issuance is a great example of how a company can engage with regulators to craft a compliant token distribution, though it is also illustrative of the enormous costs in terms of finances, time, and human resources currently required to do so. RightMesh has conducted its token issuance with admirable diligence, though has nonetheless had to compromise on degree of distribution and cost-effectiveness, and faces ongoing challenges to remain compliant.

19 <https://techcrunch.com/2018/05/03/telegrams-billion-dollar-ico-has-become-a-mess/>

20 <https://medium.com/rightmesh/our-lessons-learned-on-ico-governance-and-regulatory-restrictions-e11601370a18>

As exemplified in the RightMesh case, a common element of the hybrid approach is regulatory arbitrage in the primary issuance. Issuers pursue a compromise between compliance, distribution, and cost effectiveness by issuing their tokens in carefully selected regulatory jurisdictions. This enables issuers to reach a reasonably diverse pool of investors in a compliant and cost-effective manner. As one informant in the UBC study surmised:

Moving an internet company, or a blockchain company, or a technology company, from one country to another is a very easy thing to do. So if you're moving a manufacturing plant from Detroit to China, then that's an expensive, CAPEX-heavy thing to do. When you look at a tech company, whose property is software and can be moved on a USB stick from A to B, it's a very easy move. So what we're seeing now is that these Fintech jurisdictions, or havens, or tax-friendly places, like to compete for businesses that can move easily.

This regulatory arbitrage has corresponded to some competition between regulatory jurisdictions that compete to host ICO issuers. This pertains to securities regulations, but also includes tax laws and other regulations concerning digital assets. For instance, Switzerland, Singapore, and the Cayman Islands are generally seen as particularly favourable regulatory domains for issuing ICOs, attracting entrepreneurs who wanted to avoid the red tape of other jurisdictions. As one informant described:

So this is creating the competitive landscape, we're having jurisdictions compete for this type of business worldwide, trying to give preferential treatment. Before we saw different jurisdictions competing with different tax treatment, and now we're seeing different regulatory jurisdictions trying to create user-friendly regimes to attract these blockchain companies. I think Switzerland and Gibraltar are the two most successful places to do that.

This is nonetheless a compromise, since the limiting token sales to selected jurisdictions precludes large markets of investors that could have otherwise participated. Consider the statement from the ICO marketing consultant above (under Option A), who admitted that they tend to deviate from full compliance when marketing ICOs through bounty programs if it enables them to generate more distributed interest in the offering.

As noted above, issuing tokens in a favourable jurisdiction does not guarantee regulatory compliance for the lifetime of the asset. Issuers must comply with regulation not just in their home jurisdiction, but all regulatory jurisdictions where their *investors* are located. Blockchain technologies enable the sale of tokens without the authentication of an intermediary, and so secondary market trading could therefore enable tokens to fall into the hands of investors from all over the world. Thus, as with Option B (private offering), simply limiting the primary issuance to a particular location does not address secondary market trading, and issuers face the risk of non-compliance in secondary trading.

In sum, Option C involves some degree of compromise in each dimension, resulting in an ICO that is not as distributed nor cost effective as it could be, and that still runs the risk of non-compliance in future.

4.1.d. Option D: Forgoing ICO

A final option is to consider an ICO, but ultimately decide to forgo this. Our research indicates that a substantial number of established and startup organizations could fall into this category. We discussed with multiple actors that have seriously considered raising capital for new ventures via token issuance but have thus far held back, deciding that the costs (both known and unknown) of achieving a compliant ICO that reaches a sufficient pool of distributed investors are currently too high to go ahead.

Some of these actors might turn to alternate means of financing, while others might put their venture on hold until they feel that the cost of compliance is low enough to justify an ICO. The benefit of a “wait and see” approach is that regulation is becoming increasingly clear over time, and it allows the firm to sit back

and watch others take the risk of being first movers. As some of the uncertainty around ICOs is reduced, the costs of compliance will diminish, enabling more of these actors to issue their own digital assets. However, the downsides are similarly apparent: that ventures miss out on significant access to funding, customers, and partners that other fundraising vehicles cannot match.

Several securities lawyers in the UBC study reported having clients interested in issuing an ICO approach them. These actors are perhaps the most risk averse, since they look longer term and across issuances. As one described:

We've had several clients interested in doing an ICO, but none of the issuances went ahead. The issuers were discouraged by the regulatory burdens and decided not to proceed.

Another securities lawyer elaborated during February 2018:

The biggest concern we have at the moment is the regulation. We need regulatory clarity. We may be more conservative than other law firms, but we wouldn't recommend to anyone that they do an ICO yet.

The decision to forgo an ICO may therefore be made more likely by the presence of professional services firms such as securities lawyers and accountants. These actors are more long-term focused and risk averse than the entrepreneurial ventures themselves, and tend to advise caution and restraint when ventures come to them seeking counsel.

The fixed costs of issuing tokens is relatively low and so the decision to hold back from conducting an ICO for many new ventures is more likely to reflect the current climate of regulatory uncertainty and risks associated with ongoing compliance, rather than any practical or technological impediments. If the compliance trilemma were to be resolved, we anticipate an influx of entrepreneurial ventures that could take advantage of cheap, compliant access to widely distributed investors.

How then, could the compliance trilemma be resolved to enable more entrepreneurs to benefit from this funding process? Part of the UBC study involved synthesizing the opinions made by blockchain community members on how ICOs could become fully legitimized, both from primary interviews and from public statements made in media, industry reports, and other outlets.

4.2 Pathways Advocated by the Community for Resolving the Trilemma

The UBC study found that a large part of the community believes that the responsibility lies primarily with the relevant regulatory authorities. Interviewees in the study routinely called for amendments to regulation, ranging from clarifications of existing regulation, to the creation of fundamentally new regulatory definitions and frameworks.

Some experts simply called for greater clarification to existing regulations, so that issuers can more easily find ways to reduce the cost of compliance. One example of this was regarding securities tokens that might later become utilities, where several actors are calling for greater clarity around *when* this transition occurs. As one lawyer explained:

We all know that the guideline that Canada uses is the Pacific Coin test, and that leaves a lot of room for interpretation. Almost anything could be a security under our security laws, which is right, but these tokens that are being launched are really close to going either way. When a lot of these ICOs start off, undoubtedly it's a security. And at some moment in time, they become a utility. At exactly what moment do they become a utility? What are the characteristics of becoming a utility?

Other onlooking professions such as accountants have remained hesitant to jump into any token offering that sought to avoid security status. As a white paper published under the CPA Ontario Thought Leadership Series in June 2018 (p5)²¹:

Given the current securities regulatory environment, Ontario CPAs should refrain from participating in any offering that does not treat a token as a security. CPAs should educate ICO issuers to the realities and risks of the current environment, and encourage them to work with the OSC and other applicable securities regulators to find the most expeditious route to a fully compliant issuance. As existing securities regulations evolve, or as new ones emerge, CPAs should remain abreast of changes and advise their clients and businesses accordingly.

Other actors have made more revolutionary calls for regulators to fundamentally revise established definitions and even create new asset classes to accommodate ICOs. For instance, William Mougayar, author of *The Business Blockchain*, wrote an open letter to the Ontario Securities Commission (OSC) and Canadian Securities Administrators (CSA) claiming that regulations are overbearing and stifling innovation in Canada, and encouraging them to tailor new regulation to ICOs rather than forcing entrepreneurs to comply with established categories²². In this, he argues:

Instead of painting with a broad brush and classifying every token as a security, why not be specific about the different types of tokens at various stages of development, with different regulatory approaches for each?

[...] It is our hope that you don't erect unnecessary barriers for Canadian consumers, entrepreneurs, fund managers and investors. As it stands, it appears that your stance even runs contrary to the Federal Government's efforts and agenda to endorse innovation to allow Canada to become a more competitive global technology player.

While these suggestions range from incremental to revolutionary changes to regulation, they all fundamentally assume a similar pathway to the legitimization of ICOs: one that puts the onus squarely on regulators. Underpinning each view is the need for regulation to change first (or at least in tandem with innovation), which will in turn stimulate further entrepreneurship and innovation.

4.3. Why Waiting for Fundamentally New Regulation is Unfeasible

Broadly, there are two reasons to step back from placing all the weight on regulators for resolving the compliance trilemma. First, regulators seek continuity with past rules, making drastic overhauls to these rules less likely. Second, any regulatory changes are likely to unfold over a relatively long timeframe. To elaborate, we consider the *temporal orientations* through which each group tends to view the ICO space, which further reveals why a strategy of waiting for new regulation alone is unfeasible. By “temporal orientations”, we mean how they incorporate the past, present, and future when viewing ICOs. From this perspective, we can view this as an impasse between entrepreneurs that want to detach from the past, regulators seeking to adhere to it, and complementing service providers located at various places in between.

First, consider how entrepreneurs and regulators tend to look forward and backward in time when interpreting ICOs and making decisions. On the one hand, entrepreneurs are notoriously short-term oriented when looking forward, and tend to disregard the past entirely. This is most clearly illustrated in the proliferation of exit scams and ponzi schemes, but is also visible in the more revolutionary calls from the entrepreneurial community for regulators to completely disregard their existing definitions and create

21 <https://media.cpaontario.ca/stewardship-of-the-profession/pdfs/Navigating-the-Brave-New-World-of-Cryptocurrency-and-ICOs.pdf>

22 <https://www.change.org/p/canadian-tech-community-sign-the-osc-open-letter-on-icos-regulation>

entirely new asset classes to accommodate their activities. Many of the entrepreneurs and ICO service providers in the UBC study did not see the need to harmonize the regulation of ICOs with existing securities regulation, and indicated a preference to break from past laws and build entirely new regulation around ICOs. As one interviewee described:

We're kind of forced to look at this brand-new technology, that is a hybrid of different characteristics, and then looking at these "ancient laws"; if I want to call them that, in the Pacific Coin Test or the Howey Test and say: "what do these new mechanism most look like from the past?"; and trying to reconcile old laws with the new technology, especially in the grey area, or the tipping point, between utilities and securities.

On the other hand, regulators tend to view regulation as a continuous process, rather than a discontinuous string of decisions, and adopt a long-term orientation toward ICOs and financial markets. As SEC Chairman Jay Clayton explained in a CNBC interview in June 2018²³:

We are not going to do any violence to the traditional definition of a security that has worked for a long time. We've been doing this a long time, there's no need to change the definition. [...] A digital asset where I give you my money and you go off and start a venture, and in return for giving you my money you say you know what, I'm going to give you a return, or you can get a return on the secondary market by selling your token to somebody – that is a security, and we regulate that. We regulate the offering of that security, and we regulate the selling of that security. [...] If you have an ICO or a stock, and you want to sell it in a private placement, follow the private placement rules. If you want to do any IPO with a token, come see us. File financial statements, file disclosure, take the responsibility our laws require.

Consequently, regulators tend to feel that their existing frameworks can at least somewhat incorporate ICOs and digital assets, making significant overhauls to the regulatory framework more unlikely. New regulatory categories have emerged in some jurisdictions, though these do not diminish the importance of established regulation. For instance, the Swiss Financial Market Supervisory Authority, or FINMA, has introduced the new category of *payment tokens* (e.g. bitcoin, litecoin, etc.), to add to utility tokens (e.g. ether) and asset tokens, with only the latter being subject to securities laws²⁴. However, this new asset class covers only a relatively narrow range of tokens, and issuances by profit-seeking companies are still likely to be categorized as securities.

Next, consider the speed at which entrepreneurs and regulators tend to make and implement decisions. Whereas entrepreneurs are urgently seeking to capitalize on this fundraising process here and now, regulators operate over relatively long timeframes and are much more comfortable approaching this more carefully and systematically. This long-term view of regulation as an ongoing, coherent process, was reiterated in comments by former SEC enforcement attorney Timothy Peterson to CoinDesk in March 2018²⁵:

For ICO issuers, the main thing to understand is that this is a marathon, not a sprint. The SEC will not go away with a simple response. The process is iterative.

From this we can infer two things. First, dramatic regulatory changes are highly improbable, and more incremental changes are far more likely. Second, significant changes are unlikely to happen within any timeframe that might satisfy entrepreneurs and innovators, who tend to have much shorter temporal horizons and a far greater sense of urgency than regulators. Together, this means that if entrepreneurs and other actors plan on waiting for regulators to simply change regulation to accommodate their activities, they could be waiting a long time by their standards.

23 <https://www.cnbc.com/2018/06/06/sec-chairman-clayton-says-agency-wont-change-definition-of-a-security.html>

24 <https://www.finma.ch/en/news/2018/02/20180216-mm-ico-wegleitung/>

25 <https://www.coindesk.com/sec-going-saft/>

In sum, rather than place the burden squarely on regulators, we argue that industry could take a more active role in resolving the trilemma and legitimizing ICOs. Although we concur with the general consensus that regulation will need to be updated to fit ICOs, and that over regulation can create significant burdens, we argue that these changes could be initiated and enabled by innovation rather than by direct decisions by regulators. In the ensuing section, we outline such an alternate pathway – one that dissolves the compliance trilemma by dramatically reducing the cost of distributed compliance.

5

solutions:

realizing the full value of ICOs through streamlined issuances and automated compliance

Rather than resolving the compliance trilemma by directly changing regulation, we propose that regulatory technologies can dramatically reduce the costs of complying with existing regulation whilst reaching distributed investors. iComplyICO is among a growing group of innovators in the RegTech space who see regulation as an opportunity, rather than a threat or burden. In this section, we describe how RegTech can allow issuers to harness the full benefits of ICOs, and illustrate this using the iComplyICO platform and Prefacto protocol, which is currently the only such solution ready for deployment.

5.1. Streamlining Primary Issuances

The iComplyICO platform streamlines the primary sale of tokens by simplifying client onboarding and trade management for platforms and issuers - while stringently conforming to multi-jurisdictional best practice KYC procedures. The iComplyICO product is an end-to-end token issuance platform built for private and public blockchains, which provides the ability to onboard, whitelist (including wallet ownership verification and blockchain forensics), and manage the primary issue and secondary trading of security, utility, and non-fungible tokens.

Through the iComplyICO platform's issuer dashboard, issuers can collaborate with their own legal, compliance, business, and financial advisors to structure their offering, build a whitelist, and monitor compliance during live secondary trading. This process can substantially reduce the cost and timeline of the primary issuance, since issuers and their partners can collaborate in the token creation process. This is combined with the ability to restrict secondary trading, while automating the rules by which parties are able to transact with one another on a global basis.

5.2. Coding Compliance in Secondary Market Trading

Using iComplyICO's Prefacto dApp technology, issuers can code rules for how digital tokens can be held and traded. The outcome is *prefacto* (i.e. 'before the event') compliance; a new approach to regulatory compliance made possible by blockchain technology, which we elaborate below by comparing it to the *post hoc* ('after the event') approach monitoring compliance in crypto-investments to date (illustrated in Figure 6).

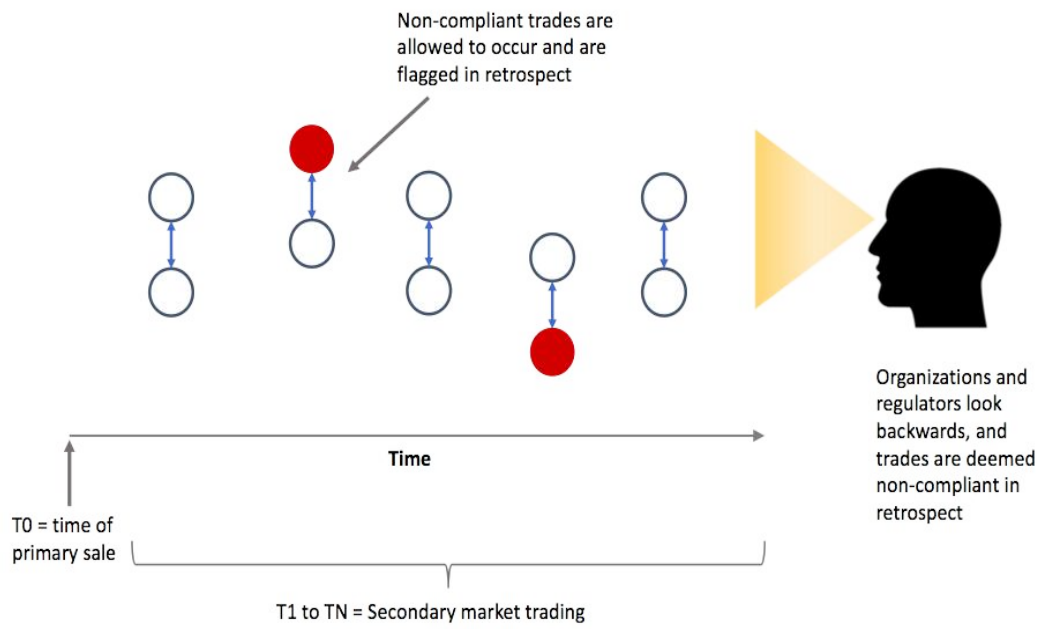


Figure 6. Post Hoc Compliance in Digital Asset Trading

Currently, regulators police compliance in crypto-investing by looking backward at issuances and trades of digital assets that have already happened. Under this system, trades that are permitted to occur in real time run the risk of being flagged by regulators later on (illustrated in Figure 6 as trades to *red* circles), leaving the issuer responsible. Furthermore, given the core characteristics of blockchain technology, it is unrealistic to expect third-party intermediaries (such as cryptocurrency exchanges) to be able to ensure the compliance of trading, since these actors can be easily circumvented. Together, retrospective compliance generates huge risks and costs for issuers, many of whom may not even discover they have broken finance laws until years after the fact.

In comparison iComplyICO enables what we call *prefacto compliance*, whereby the ownership and trading of the digital token is automatically bounded to any rules that are coded into it at the outset. In this way, compliance is proactive, since issuers can set whatever rules they wish for who can hold the tokens and how they can be traded. This model is illustrated in Figure 7 and elaborated below.

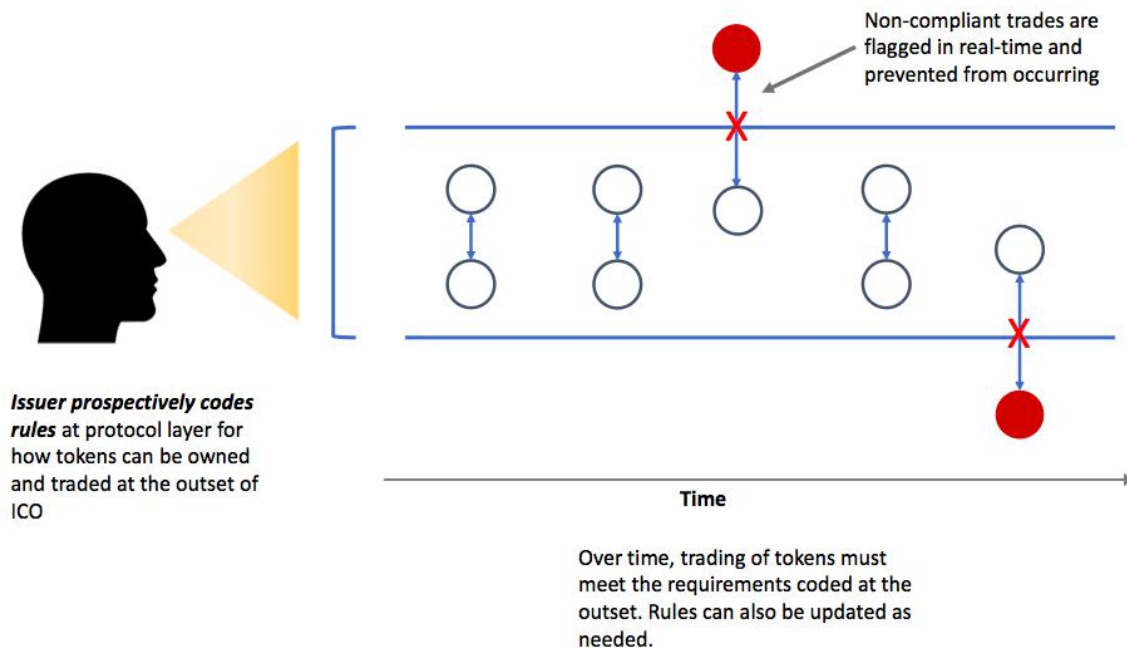


Figure 7. Automated, Prefacto Compliance

Before the coin sale of the ICO begins, rules are coded into the digital tokens for who can hold and trade them. To buy the tokens, individuals must prove that they meet these requirements by verifying their identity according to the relevant multi-jurisdictional guidelines, and then whitelisting their wallet. This verification can occur either on the iComplyICO platform directly or via the issuer’s interface using the white labelled iComplyICO tool. The user may then buy and trade tokens with other whitelisted wallets (illustrated in Figure 7 as successful trades between the white circles). If they attempt to sell their tokens to a wallet that does not meet the coded requirements, the trade will be flagged for manual review and/or blocked automatically, depending on settings established by the issuer. Restrictions can also apply to the trades themselves. For instance, if users attempt a non-compliant trade (e.g. the trade size is too large), the trade would be flagged and/or rejected even if both users are verified investors.

The rules for how tokens are held and exchanged can be updated as needed, which is important due to potential for changes in both regulation and token status over the lifetime of the asset. Because cryptographic tokens can be seamlessly exchanged across jurisdictional boundaries, issuers need the ability to adjust the rules for their digital assets if one or more of relevant jurisdictions update or introduce new regulation. Moreover, many issuers create digital assets that begin as security tokens and are intended to evolve into utility tokens once their offering is operational. iComplyICO provides the issuer with full control over when to relax the rules around their digital assets. This means that once issuers are confident that their tokens have achieved a sufficient utility function, they can easily update the rules to reflect this new asset categorization.

This approach enables the issuer to be confident that their financial assets will fulfil the regulatory requirements of those jurisdictions. Issuers can ensure that their digital assets will only be held by verified investors and traded in a compliant manner for the lifetime of the assets.

5.3. How Streamlined Issuances and Prefacto Compliance Dissolves the Compliance Trilemma

Streamlined issuances and automated, Prefacto compliance can dramatically reduce the cost of regulatory compliance, both in the primary sale and in secondary market trading. Prefacto compliance can therefore dissolve the Compliance Trilemma, and enable further decentralization of the investor pool.

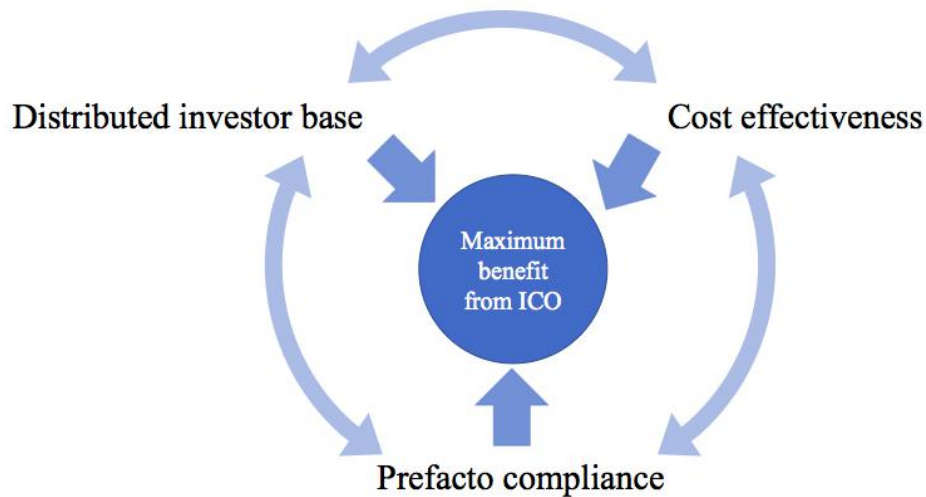


Figure 8. Prefacto Compliance Enables ICOs to Reach Their True Potential

In sum, Prefacto compliance enables ICOs to reach their full potential as a fundraising vehicle, by facilitating cost-effective access to a widely distributed pool of investors in an assuredly compliant manner. Figure 8 illustrates how these dimensions reinforce one another over time. Automated compliance via rules coded at the protocol layer enables significantly reduced cost for the issuance and ongoing tracking of digital assets, thereby expanding investor pools to more regulatory jurisdictions. Within all jurisdictions, secondary trading will be compliant for the lifetime of the asset. Consequently, these three dimensions now reinforce one another rather than conflict, and ICO issuers no longer have to compromise on compliance, cost effectiveness, or the decentralization and distribution of investment.

6

conclusion: towards legitimate, self-regulating ICOs

To date, the ICO has been hampered by a trilemma that has substantially limited its potential. Costs of manually complying are overbearing, unless the issuer wishes to conduct a heavily limited offering, compromise on compliance and the spread of investors, or eschew regulation entirely. Many actors with legitimate ventures that could benefit from ICOs are likely holding back, due to combination of confusion over how exactly they might comply with financial regulations within and across jurisdictions, and the prohibitive costs of doing so manually. Automated compliance, such as the iComplyICO Prefacto product, presents a viable solution to this, opening up significant potential for a much broader range of issuers and investors to benefit from this novel and important funding practice.

Prefacto compliance significantly simplifies processes of regulatory oversight by enabling proactive self-regulation by token issuers. Digital tokens can now be coded to adhere to the rules in advance of their initial sale and secondary market trading, instead of the issuer needing to prove this post hoc. Regulators can have transparent access to the full history of token ownership and transactions, which are recorded on immutable blockchain ledgers. If there are changes to regulation, corresponding changes can be quickly and easily made to the coded rules for owning and trading digital tokens using iComplyICO. Over time, we suggest that this technology could facilitate the widespread proliferation of ICOs as a legitimate, safe and cost-effective fundraising vehicle for new ventures, and induce a fundamental shift in how compliance is monitored and enforced throughout capital markets around the world.

By relaxing the administrative burdens currently placed on regulators, automated compliance could also pave the way for eventual regulatory reform. Once issuers can effectively self-regulate their digital assets, the roles of regulators can change from policing compliance through backwards-looking audits to the real-time monitoring of investor protection. ■