# 1AC

### Blockchain---1AC

#### Advantage 1---BLOCKCHAIN

#### Blockchain development is inevitable, but beyond the scope of antitrust---the law’s narrow focus on the ‘firm’ is fundamentally inapplicable, creating an anticompetitive environment that’ll centralize applications and limit uptake

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5 A WIN-WIN THEORY

The creation of a legal fiction around blockchain nuclei will benefit both antitrust and blockchain communities. By facilitating the enforcement of the rule of law, blockchain participants will indeed be able to enforce antitrust laws or be sanctioned when infringing them.

5.1 A Win for Antitrust

The theory of granularity helps create a legal fiction for public permissionless blockchains and private ones (whose governance is not vertical). Surely, other legal fictions will be proposed in the coming years. Regardless of its name, creating a legal fiction is a prerequisite for applying the rule of law to blockchain layer 1. The ability to do so is crucial.

First, the creation of a legal fiction ensures that blockchains do not escape antitrust enforcement for theoretical reasons. This is a prerequisite before discussing the technical barriers to enforce antitrust against illegal practices (see the following chapters). Second, assigning liability to the right entity ensures that whoever controls blockchains will have a strong(er) incentive to comply with legal requirements. The urge to play by the rules is always stronger when one knows that the rules could actually be enforced. As such, antitrust will not only protect actors that lie outside of blockchain ecosystems; it will also protect those inside the blockchain who cannot stop the anticompetitive practices. Antitrust will free blockchain layer 1 from these practices.

5.2 A Win for Blockchain

Creating a distinct legal fiction centered on blockchains’ nucleus will present an important step forward for related ecosystems. First, the creation of such fiction will attribute rights to blockchains’ nuclei. This will legitimize collaboration between blockchain participants in the nucleus that would otherwise have been prohibited. Indeed, I have explained that antitrust law defines a legal fiction (e.g., the firm) and then applies only to the effects that occur outside of it. Decisions that produce an effect outside of the blockchain nucleus will be submitted to antitrust law. In contrast, decisions taken by the nucleus whose effects are purely internal to that entity will be exempt from antitrust scrutiny.98

Second, creating a legal fiction will increase legal certainty pertaining to the application of antitrust law and regulation. Decades of research suggest that doing so will encourage investments,99 and will make entrepreneurs want to “embark” on the creation of innovative products and services.100 Blockchain communities say so themselves: regulatory issues and accompanying legal uncertainty are the most important reasons preventing greater investment and adoption of blockchain technology.101 The sooner a legal fiction is created, the better for the ecosystem. In its absence, one could imagine court decisions holding all blockchain participants liable for wrongdoings, even though most of them will not have the power to prevent these illegal practices.

Finally, the creation of a legal fiction will give the nucleus the right to institute legal actions and claim damages in cases of antitrust violation, whether caused by another nucleus or a non-blockchain entity. Going back to Christopher Stone’s writing, blockchain’s legal fictions will be able to institute legal actions in their name; courts will calculate injury to them, and relief will be run to their benefit. For example, one could imagine that a blockchain layer 1 (illegally) excluded from the market by another blockchain that engaged in predatory pricing could introduce a valid claim before the courts or antitrust agencies. In the following chapters, I will explain how this will play out when it comes to collusion and monopolization practices.

For all these reasons, creating an antitrust-related legal fiction will be invaluable for blockchain ecosystems and, ultimately, for decentralization. It will protect them from illegal practices that could hinder blockchain’s capacity to decentralize the economy. There is no doubt that centralized companies will multiply illegal behaviors toward blockchain ecosystems in the years to come, as we will see in the coming chapters. Being recognized as a legal entity will allow them to protect their interests and innovate toward decentralization.

6 CHAPTER SUMMARY AND BEYOND

In this chapter, 1 have used the theory of granularity to open the blockchain “black box.” First, I have discussed blockchain governance and shown how the influence of different participants neutralize their position. As no block- chain participant can control the blockchain by itself - and ensure its survival - I have explained that a group of participants may want to come together to achieve common goals. By doing so, they free themselves from other participants’ constraints and end up forming the blockchain nucleus.

The blockchain nucleus gives rise to an entity that should benefit from rights, but could also be held liable for illegal conducts. I have shown how this would work by analyzing relevant markets and market power, evaluating anticompetitive practices and assigning liability.

#### Anticompetitive exclusions and lack of legal certainty over the applicability of antitrust dry up investment and innovation, artificially centralizing digital ecosystems---applying antitrust solves

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2 THE SPECTER OF NEUTRALIZATION

I hope to have convinced readers that antitrust law and blockchain contribute to similar, if not identical, objectives (i.e., preserving agents’ ability to act freely in the market, which entails the decentralization of decision-making processes).42 For that reason, one might expect that both communities would work hand in hand to achieve decentralization. And yet, despite pursuing a common goal, blockchain and antitrust may end up canceling each other out. Here’s why.

2.1 One Goal, Two Methods

Blockchain seeks the decentralization of decision making by eliminating intermediaries, while antitrust aims to achieve it by eliminating anticompetitive practices. They converge toward the same objective. That said, one should not be candid about how easy it will be to make them cooperate. First, the Sherman Act is concerned with trusts43 - hence the name “anti-trust”. Since there is no trustee in the sense of a third-party fiduciary in blockchain’s first layers, the target of antitrust laws is absent.44 Blockchain may thus undermine the *raison d'etre* of antitrust law, which will trigger epidermal reactions.

Furthermore, blockchain and antitrust may at times attack each other. Blockchain may be used to implement anticompetitive practices and be enforcement resistant, while antitrust may reinforce the role of intermediaries in the economy (by protecting them from different forms of anticompetitive exclusions) and label various blockchain behaviors as anticompetitive - regardless of the overall usefulness of these blockchain features.

In fact, antitrust law and blockchain ecosystems seek decentralization at two different levels. Antitrust law prohibits certain categories of conduct, creating tensions with tech communities without focusing much on digital architectures. Blockchain, on the contrary, seeks to decentralize by providing its users with a specific digital architecture. It does not prohibit (anticompetitive) practices where code allows. This creates tensions between them, as I show in Part 2 of this book. Their cooperation will require the identification of ways to deal with these mutual provocations, as I will explain in Part 3.

As things stand, both of these communities exhibit what Veblen called “trained incapacity” - the difficulty to think beyond a set of constraints and assumptions. Policymakers tend to believe that the law should be the most important constraint organizing our lives. For that reason, legal rules are often applied without looking for ways to coordinate with other constraints, including digital architectures.45 In the meantime, blockchain communities tend to view legal enforcement as an adversary, and not as an ally. As John Perry Barlow stated in 1996: “I ask you of the past to leave us alone. You are not welcome among us. You have no sovereignty where we gather.” After all, the law liberates, but it also implies illegality, lawsuits, liability assignment and sanctions. The antitrust and blockchain communities will gain from over- coming these biases.

2.2 The (Long) Road Ahead

If we want antitrust and blockchain to collaborate on a long-term basis, we need to talk about the problems that their cooperation will encounter along the way. The challenge before us is intricate.46 On the one hand, it is a matter of getting legal minds to recognize that technology can help achieve objectives that the law cannot achieve on its own. There are three reasons for this. First, blockchain provides a technical approach to the subject. It serves as a framework for decentralizing the economy by default, while antitrust mostly applies ex post by correcting past behaviors.47

Second, antitrust agencies’ detection rate remains low, meaning that illegal behavior often goes unpunished.48 And enforcement is costly, which makes it impossible to pursue all potentially illegal practices. This is particularly problematic in a world where illegal practices can be implemented through coding that quietly and immediately affects billions of users. Also, the rule of law is (unfortunately) inapplicable in some places. This is the case when the state bypasses legal constraints,49 and when jurisdictions are mutually unfriendly and do not enforce foreign laws.50 For example, enforcement of U.S. court judgments abroad can prove especially difficult in light of divergent rules on jurisdiction, requirements for special service of process, reciprocity and some foreign countries’ public policy concerns,51 including in Europe.52

Finally, antitrust law is complex and cannot be fully mastered by all companies - the compliance costs are high and many firms unwittingly infringe the law. Blockchains could therefore supplement antitrust by creating an architecture that leads to fewer anticompetitive practices.

On the other hand, blockchain communities would gain from working with (not against) antitrust law enforcers. That is because antitrust would eliminate practices that artificially centralize blockchain ecosystems and that blockchain architecture cannot stop or prevent. 1 will analyze them in Part 2. Doing so would also provide legal certainty, thus fostering investments and benefiting all the actors involved in commercial activities that rely on blockchain. For these reasons, one should think of antitrust and blockchain as allies - not enemies - as they both seek the same objective, while presenting complementary strengths and defects. Doing so would lead policymakers to promote and implement a new “law + technology” approach that recognizes that the benefits of cooperation outweigh those of one-off confrontations. A game theorist would represent that approach as illustrated in Figure 5.1.

#### Decentralizing the blockchain allows scalable transaction validation

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2 BLOCKCHAIN INTERNAL FACTORS

The evolution of blockchain also depends on internal balances in terms of design and governance. Overall, choices that will be made within each blockchain will prove important for their evolution. As I show, it all comes down to human interactions.

2.1 The Trifecta: Intra-blockchain Evolution

A blockchain trilemma has emerged in the literature over the last several years. It can be summed up as follows: ensuring blockchain’s decentralization, scal- ability and security entails tradeoffs, at least in the short term. Although this makes sense on a technical level, it does not capture the entirety of our subject. Let us take a closer look. I have discussed decentralization at length through- out this book. It is blockchain’s central feature, in terms of both architecture and philosophy. “Scalability” refers to the ability to validate large volumes of transactions rapidly. Last, blockchain’s security hinges upon its ability to maintain integrity: that only desirable transactions take place - for example, by preventing double spending.42

To a certain extent, we have seen together that the mechanisms that ensure decentralization at different blockchain layers may conflict with security.43 This is what Awemany’s story in Chapter 1 revealed. Decentralization implies the distribution of power, limiting the ability to act unilaterally in case of an emergency. At the same time, decentralization can also affect the scalability of blockchain: Proof of Work is decentralized by nature, but it prevents the rapid validation of large transaction numbers. Conversely, a private blockchain can restrict access to the ledger or certain functions, raising security and scalability issues.44

In the long run, however, these three objectives are mutually reinforcing. The more a blockchain is decentralized, the more it stands out from the centralized platforms and services that readers know only too well. By differentiating themselves, blockchains attract users by offering a different value proposition. In turn, this generates scalability. The same goes for security, as the more participants use a public blockchain, the harder it becomes to alter the registry or perform a 51 percent attack. The blockchain trilemma is thus useful for thinking about what needs to be done, but it cannot provide a coherent analytical framework in the long term. It will become less relevant with technical advances, to the point where some blockchains will maximize these three objectives. Those who manage to do so will prosper.

#### Scaling blockchain unlocks its use for energy, waste, and supply chain sustainability---extinction

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Two years ago nobody talked about blockchain. Now the distributed ledger technology behind cryptocurrencies like bitcoin is suddenly everywhere.

Enthusiastic experts predict that in the coming 10 years, blockchain will change the way we do everything, from financial markets to health records to supply chain management, and so much more. It's near impossible to name all the applications for the new technologies, but here are a few that will contribute to making our world a better place (or even save the planet).

Energy

Most visible for average users will be the impact of blockchain on the energy sector. The power grids of today are usually centralized oligopolies dependent on a very small selection of power sources (i.e. a few nuclear plants, augmented by oil and gas).

That means long distribution lines, bad management of demand, and susceptibility to power outages during earthquakes and other natural disasters.

A peer-to-peer blockchain-based energy system would reduce the need to transmit electricity over long distances. It will certainly reduce the need to store energy in inefficient ways, which means fewer batteries, for example, which are expensive and need a lot of raw materials whose extraction often causes massive pollution. Imagine if every house had a solar panel and a wind turbine, or produced electricity from new smart materials on the outer walls.

Add road surfaces that produce kinetic or solar energy, and add in all the existing infrastructure like nuclear plants, oil or coal. Now imagine every one of these sources could trade with every other source, all managed automatically by a computer system, with unfalsifiable records based on blockchain. And everyone gets paid for it into their digital wallet. This is the future of energy.

Waste Recycling

Current systems for recycling are often cumbersome and don't give enough incentives to participate. Even the best intentions fall foul to human greed and laziness.

Here then is the future of recycling: you identify yourself with your smartphone at any recycling station and deposit your empty bottles (or batteries etc.). The system scans what you deposit and credits your electronic wallet.

If done right, this system could enable users in countries without local recycling industries to get paid the same way as users in locations with large recycling operations.

Companies could set up recycling plants and literally collect garbage from anywhere in the world. It would make it easy to transparently track data like volume, cost, shipping data, and profit, and to evaluate the impact of each location, company, or individual participating in the program.

Think one step further and the recycling containers could be fitted with solar drone technology and fly themselves to the recycling center when full.

Supply Chain Management

The way we transport goods around the world is wasteful and damages the environment. Industry 4.0 is bringing us a revolution of already connected devices; 3D printing means more decentralized manufacturing in much smaller batches.

Blockchains can be used to track products from the manufacturer to the shelf and help prevent waste, inefficiency, fraud, and unethical practices by making supply chains more transparent.

They improve shipping ways, volumes, avoid empty shipments and will thus allow for fewer ships and trucks. Combined with drones and solar-powered airships we could even see pollutant-free solar shipments of individual consignments over long distances, secured, tracked and paid for through blockchain technology.

Or think about this: a blockchain enabled 3D-printer as a public service, secured, tracked, and monetized through blockchain.

The food industry is forging ahead hear with the tracking of origin and transportation paths of food.

Environmental Protection

From waste and transportation, it is an easy jump to the overall enforcement of environmental protection. Blockchain is ideally suited to manage records and incentives.

In can be difficult to track the real impact of environmental protection plans, agreements, or even international treaties. Very often incentives are misaligned, or corporate interests and even criminal elements prevent successful implementation.

Blockchain could discourage stakeholders from reneging on their commitments, misreporting progress, or giving in to pressure from nefarious players, because the technology would allow the reliable tracking of important environmental data.

After all, data in the public ledger of the blockchain is transparent and traceable forever. Environmental protection is at its core a contractual problem. Just like blockchain will revolutionize the storage and manipulation of legal records, it will reduce or eliminate fraud and manipulation of environmental schemes.

Development programs

Like environmental protection, development programs are contracts between remote parties that need to be enforced.

When you donate to a charity, non-profit, development program or similar entity, you hardly ever know what really happens with your money. Bureaucracy, corruption, and inefficiency are still common in the charity space. Blockchain technology can ensure that money intended to be a reward for conservation, or a payment to a specific cause, does not disappear into unintended pockets through bureaucratic labyrinths.

Blockchain-based money could even be released automatically to the correct parties in response to meeting specific environmental targets. This is particularly relevant in countries without modern banking structures. In particular, there are several schemes under consideration for the tracking of water usage in very dry areas of the planet.

Carbon Tax

In the current system, the environmental impact of each product is difficult to determine, and its carbon footprint is not factored into the price.

This means that there is little incentive for consumers to buy products with a low carbon footprint, and little incentive for companies to sell such products.

Tracking the carbon footprint of each product using the blockchain would protect this data from tampering, and it can be used to determine the amount of carbon tax to be charged on at the point of sale. If a product with a big carbon footprint is more expensive to buy, this would encourage buyers to buy products that are more environmentally friendly, and would therefore encourage companies to restructure their supply chains to meet the demand for such products.

Such a blockchain-based reputation system would compute a score for each company and product. This would make manufacturing more transparent, and discourage wasteful and environmentally unfriendly practices.

You could automatically see (e.g. by scanning a barcode on a product), if it was made by an environmentally sound low-carbon facility, or a wasteful polluter.

Access to credit

Just as it tracks financial payments and all the data mentioned above, blockchains could be configured to manage access to credit.

This would enable millions of people to escape poverty, by giving them easy access to small amounts of money and start their own business. Unlike the micro-finance banking model, such a credit blockchain would be entirely transparent and thus safe from abuse.

Summary

In short, blockchain technology allows the management of incentives.

Consumers, companies, and governments would immediately see the direct effects of their actions on the planet. The blockchain can be used to transparently track a variety of data like the carbon footprint of each product, the greenhouse gas or waste emissions of a factory, or a company's overall history of compliance to environmental standards.

Companies and individuals can be incentivized to act in an environmentally sustainable way through the availability of information, tokenized credits being issued for taking certain actions, or blockchain-based reputation systems.

There are many hurdles to overcome. We still do not know if the blockchain is really as safe and unhackable as promised. As a cybersecurity consultant I spoke to for this article said: "sooner or later, everything will be hacked."

There are still doubts about the usability of blockchain for micro-transaction, due to the time proof-of-work takes, and the energy cost associated with computing.

The final hurdle is the willingness of governments to change, and the willingness of participants to live in such a transparent world.

But I believe that managing incentives on the micro-level with blockchain could completely change the drivers of our economy, and benefit not only us but the future generations living on our planet.

#### Federal antitrust signals a balanced, light-touch approach that reinvigorates U.S. global leadership on blockchain

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The internet is what it is today—with its ability to connect people across countries, time zones, and cultures—thanks to the friendly regulatory climate it was born into. Sadly, the regulatory climate of 2021 is far less welcoming to disruptive technologies. This is bad news for the future of U.S. innovation and the emerging blockchain industry.

Whether Washington takes a heavy-handed or a light-touch approach to crypto regulation over the next few months could make a multitrillion-dollar difference over the next few years. To understand how much we stand to lose as a result of bad blockchain policy, it’s first important to understand just how much we have gained as a result of good internet policy in the ’90s.

It’s easy to forget that the success of today’s internet behemoths was anything but certain in the early years of the tech boom. During the Dotcom Bubble of the late '90s, for example, many companies were dismissed as scams (and some of them were). But even the most promising companies were still seen as speculative bets, and their stock prices were subject to extreme volatility.

It’s also easy to forget that the very concept of the internet was foreign to most people in its early years. By today’s standards, it was slow, overly complex, and difficult to use by anyone without a strong technical background. Many dismissed the internet as a fad, including Nobel Prize-winning economist Paul Krugman, who made this prediction in 1998: “By 2005 or so, it will become clear that the internet’s impact on the economy has been no greater than the fax machine’s.”

Noted.

“A scam,” “a fad,” “a bubble,” “overly complex,” “too volatile.” Does any of this sound familiar? History doesn’t rhyme so much as it plagiarizes. And it’s impossible to ignore that the crypto skeptics of today use the same vocabulary as the internet naysayers of yesteryear.

Now imagine if U.S. policymakers had heeded the words of the internet’s critics in the mid-to-late ’90s. Imagine if they had cracked down on e-commerce, digital publishing, and fledgling social media platforms to preserve the old way of doing things. Imagine if they had shaped regulations to stem the free flow of physical goods, ideas, and information made possible by the internet.

The American people would have missed out on trillions of dollars in economic opportunity—and the bounties of the digital age would have gone to countries with more tech-friendly policies.

This is the risk we face today.

We find ourselves at the dawn of a new age of American innovation. Like the internet before it, crypto has the potential to redefine everything we know about how business, politics, media, finance, and even relationships work. But if legislators give in to crypto’s critics by taking a draconian approach to regulation, the U.S. will fail to reap the economic rewards of this world-changing technology—and entrepreneurs will flee to friendlier shores.

Even now, the stage is being set for a blockchain brain drain. Take the Senate-passed infrastructure bill, which includes a provision that would define crypto miners, validators, and even software developers as “brokers,” requiring them to report information to the IRS about anonymous blockchain participants that they would have no way of obtaining. In effect, this provision would kill the nascent DeFi (decentralized finance) industry and make it almost impossible for everyday Americans to invest in new cryptocurrencies. In other words, this latest move sends a hostile message to blockchain advocates: “We don’t want you here.”

At best, the Senate proposal belies a gross misunderstanding of how cryptocurrencies work; at worst, it exposes regulatory capture and the willingness of legislators to give in to special interests.

Sadly, the threat of bad regulation doesn’t end there. SEC Chair Gary Gensler has expressed his belief that many digital assets are not commodities but securities and should be regulated as such. Following this same logic, he’s signaled his intent to crack down on the use of stable coins—cryptocurrencies pegged to the value of the U.S. dollar. Americans are using stable coins to earn 4 to 8 percent APY on their savings through various lending programs. But the SEC wants to put a stop to these lending programs, ostensibly “to protect investors.” (What’s unclear is which government agency will protect investors from the unlimited money printing that is devaluing their dollar savings at a rate of 5.3 percent per year.)

Washington has gotten off on the wrong foot when it comes to crypto. But it’s not too late to correct course.

Regulation of crypto is not necessarily a bad thing. In fact, it’s a key step on the path to mainstream adoption. It’s critical, however, that policymakers shape regulation in a way that minimizes the risks of this new technology without eliminating its benefits. Congress found a way to do this with the internet in the ’90s. Section 230—while far from perfect and in need of reform today—paved the way for a flexible regulatory environment that allowed for many online companies to thrive. In the famous words of Jeff Kosseff, Section 230 contains “the 26 words that created the internet” (and, it’s worth adding, “trillions of dollars in economic wealth”).

Indeed, regulatory clarity is key to extracting maximum value from the emerging crypto economy, whether that value comes from DeFi protocols, decentralized forms of social media, tokenized assets, NFTs, or some other application of blockchain technology that we can’t even imagine today.

As policymakers seek to find the right balance on regulation, they should remember that the U.S. didn’t become the tech capital of the world by choking innovators with red tape. The U.S. became what it is today by taking a prudential approach to regulation—one that enabled the entrepreneurial spirit.

This is the same entrepreneurial spirit that inspired the private sector technological advances that made the Apollo moon landing possible. It’s the same spirit that brought about smartphones millions of times more powerful than the Apollo 11 guidance computers. And it’s the same spirit that has motivated a group of visionaries to push the boundaries of the digital frontier through blockchain technology.

Will Washington’s leaders stifle that spirit to the detriment of our economy and our reputation as a global leader in innovation? Or will they nourish that spirit to usher in the next chapter of the digital revolution?

Let’s hope they choose the latter.

#### That allows international standard-setting that leverages it for public benefits internationally

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Despite the striking fact that most of the programmers the U.S. has ever known are alive and working today, despite the fact that the U.S.’s technical capabilities are growing exponentially, despite that, the vast stretches of the unknown and the unanswered and the unfinished still far outstrip our collective comprehension.

No man can fully grasp how far and how fast we have come, but condense, if you will, the 50,000 years of man’s recorded history in a time span of but a half-century. Stated in these terms, we know little about the first 40 years, except at the end of them man had learned to use the skins of animals to cover them. Then 10 years ago, under this standard, man emerged from his caves to construct other kinds of shelter. Five years ago man learned to write and use a cart with wheels. The printing press came this year, and two months ago, the steam engine provided a new source of power. Last month electric lights and telephones and automobiles and airplanes became available. Only last week did we develop penicillin and television. Two days ago the internet browser was introduced. And earlier today, Satoshi wrote his white paper.

This is a breathtaking pace, and such a pace cannot help but create new ills as it dispels old, new ignorance, new problems. Now, when refer to “Crypto”, I mean the four technologies (blockchain, cryptocurrency, smart contracts, and zero knowledge proof), which collectively enable decentralization, all fueled by community. Surely these technologies promise disruption and high reward.

So it is not surprising that when it comes to Crypto our government would have us stay where we are a little longer to rest, to wait. But this city of New York, and this country of the United States was not built by those who waited and rested and wished to look behind them. Technological breakthroughs are driven by those who move forward — and we will continue to do so.

If this capsule history of our progress teaches us anything, it is that man, in his quest for knowledge and progress, is determined and cannot be deterred. The development of Crypto will go ahead, whether the U.S. regulators joins in or not. And I believe Crypto is one of the great adventures of all time, and no nation which expects to lead the world in technology can expect to lead while staying behind in the development of Crypto.

Our forefathers made certain that the U.S. rode the first waves of the industrial revolutions, the first waves of modern invention, and the first wave of the internet. This generation does not intend to founder in the backwash of the coming age of Crypto. We mean to be a part of it — we mean to lead it. For the eyes of the world will increasingly look at Bitcoin and blockchain and beyond. And those of us in Crypto are working to see it governed by a banner of freedom. We have vowed that we shall not see Crypto filled with scammers, but with scalable protocols that make the world a better place.

Yet the promise of Crypto can best be fulfilled if we in this Nation are there, and leading the way. In short, our leadership in technology, our hopes for a better future, our obligations to ourselves as well as others, all require us to make this effort, to solve these mysteries, to solve them for the good of all men, and to become the world’s leading Crypto nation.

We set sail on this new sea because there is new knowledge to be gained, and new rights to be won, and they must be won and used for the progress of all people. For Crypto, like all of technology, has no conscience of its own. Whether it will become a force for good or ill depends on [hu]man[s], and only if the United States occupies a position of pre-eminence can we help decide how this new technology evolves. I do not say that we should or will go unregulated against the misuse of Crypto any more than we go unprotected against the hostile use of cyber warfare. But I do say that Crypto can be developed and mastered without repeating the mistakes of past regulatory overreach.

Crypto’s development deserves the best of all [hu]mankind and its opportunity for community. But why, some say, Crypto? Why choose this as our next computing platform? And they may well ask why climb the highest mountain? Why, 75 years ago, fly the Atlantic?

We choose to to develop Crypto, and do the other things, not because they are easy, but because they are hard, because the goal of decentralization will serve to organize and measure the best of our energies and skills, because that challenge is one that we are willing to accept, one we are unwilling to postpone, and one which we intend to win.

It is for these reasons that I’m concerned by the inaction of our government to provide greater regulatory clarity. In the last months, we’ve seen progress in scaling like the Lightning Network. We’ve seen securities infrastructure like Templum and OpenFinance and Polymath being built.

To be sure, from a regulatory standpoint, we are behind. But we should not stay behind. This year, we should make up and move ahead. The growth of our science and education will be enriched by new knowledge of Crypto, by new decentralized governance mechanisms, by new token economics.

The Crypto community itself, while still in its infancy, has already created a great number of new companies, and tens of thousands of new jobs. Crypto is generating new demands in investment and skilled personnel, and New York and the U.S. can share greatly in this growth.

To be sure, all this comes with uncertainty of the role of government and fiat in the future. I recognize that the belief in Crypto’s potential is in some measure an act of faith , for we do not now know what benefits await us.

But I believe that we can develop a decentralized currency that can be used as a means of exchange. I believe we can leverage blockchain technology to provide identity for the 23 million children on this planet without identity papers. I believe we can use these technologies for voting purposes, and ensuring our elected officials follow through on their promises.

However, if we’re going to do all those things, and countless other positive things for mankind, then we must pass accommodating regulations. I‘m encouraged that New York and the United States are playing a big part in the development of Crypto,. With more regulatory clarity, we can solidify our leading position in Crypto, the greatest adventure on which [hu]man[ity] has ever embarked.

#### Globally collaborative blockchains prevent nuclear war from miscalc, accidents, and arms racing AND build global co-op, stopping existential threats

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New and maturing technologies are often seen as possible drivers of conflict, not least in the context of rising nuclear risks. In 2019, for example, the UK House of Lords Select Committee on International Relations concluded, “The risk of the use of nuclear weapons has increased, in the context of rising inter-state competition, a more multipolar world, and the development of new capabilities and technologies.” In a recent policy report published by the Centre for Science and Security Studies at King’s College London, I explored the flipside of that coin. The trust machine: blockchain in nuclear disarmament and arms control verification looks at how blockchain technology could help to reduce nuclear risks, by strengthening systems to verify the dismantlement of nuclear warheads.

The ‘trust machine’

Blockchain is best known as the technology that underpins the cryptocurrency Bitcoin, but it already has a wide range of alternative uses in areas such as medicine, transport, manufacturing, finance and governance. During the COVID-19 crisis, blockchain was used to produce a cheap, reliable solution for contact tracing. In Syria, blockchain is being used to create a permanent record of potential war crimes, increasing the security and integrity of the data and strengthening its admissibility as evidence in future war crimes prosecutions.

Contests of legitimacy and value: the Treaty on the Prohibition of Nuclear Weapons and the logic of…

Blockchain is a de-centralized, digital record-keeping technology. It combines cryptography and social/economic incentives to build a shared, permanent, and virtually un-hackable record of events, without needing to trust a third party authority to manage the data. Unlike Bitcoin, which is a ‘public’ network that allows anyone to interact with it, a private blockchain creates a ‘permissioned’ network of participants who collectively store and manage data in a way that allows them to maintain extremely high confidence in the integrity of the data. The result is a shared, digital record of events — a blockchain — that is practically immutable, establishing a single, collective, and irrefutable ‘truth’ about the nature and sequence of events within the network. In a post-truth world, blockchain thus offers an invaluable technical foundation for cooperation among parties that have a limited basis to trust each other, leading to its nickname, ‘the trust machine’.

Blockchain as a disarmament mechanism

At present, extremely low levels of international trust hamper efforts to advance nuclear disarmament. The ongoing development of new nuclear weapons, warheads and increasingly capable ballistic missile defences are undermining the theories and practices of deterrence, and point to the resurgence of a spiral of mistrust that characterized the Cold War nuclear arms race. Developing robust, multilateral verification tools and processes could help to mitigate the trust deficit. It would enable countries to pursue their shared interests in nuclear disarmament — reduced costs, less chance of escalation and nuclear use, greater scope to cooperate on global threats like climate change and pandemics — by increasing confidence that other countries are fulfilling their disarmament commitments in good faith. One way to strengthen verification would be to use a private blockchain to manage and store the data that a disarmament process creates.

In a verified disarmament process, parties need to track and record things like the status and movements of individual inspectors and weapon parts, and the status and material holdings of different facilities. These activities create large amounts of data that need to be stored in a secure, permanent and transparent manner that also allows for its easy retrieval by permissioned actors. The core attributes of blockchain correspond closely to these requirements. The technology would allow parties to maintain very high confidence in the immutability of verification data, creating a strong technical foundation for future cooperation from a shared, trusted baseline.

International collaborations like the 25-country International Partnership for Nuclear Disarmament Verification and the Quad Nuclear Verification Partnership (made up of Norway, Sweden, the United Kingdom and the United States) are already exploring how nuclear-armed and non-nuclear-armed states can cooperate in verifying the dismantlement of nuclear warheads without revealing sensitive information. Blockchain could complement their approach, enabling countries to create a permanent, immutable record of verification data.

Nuclear weapons threaten the survival of humanity and divert tens of billions of dollars each year away from efforts to address other collective security challenges like mitigating and adapting to climate change and responding to pandemics like COVID-19. As such, we all share an interest in disarmament processes that can reduce the likelihood of deliberate or accidental nuclear explosions and free up urgently needed resources for other global security priorities. We owe it to ourselves and to future generations to consider all options that could help to advance nuclear disarmament. In addressing the regular obstacle of distrust between the nuclear powers, blockchain is one technological option that we should be exploring.

#### Policy must be certain and originate at the federal level to signal U.S. commitment to accommodative blockchain policy

Michele Benedetto Neitz 21, Professor of Law at the Golden Gate University School of Law, Member of the California Blockchain Working Group, Affiliated Scholar at LexLab at the U.C. Hastings College of the Law, “How to Regulate Blockchain's Real-Life Applications: Lessons from the California Blockchain Working Group”, Jurimetrics Journal, 61 Jurimetrics J. 185, Winter 2021, Lexis

A. Why Create Laws Related to Blockchain Technology?

1. Protecting the Public from Harm

Blockchain technology is a complicated field, and innovation in this space is developing rapidly. This innovation will occur regardless of a legislature's reluctance or willingness to draft laws to regulate this industry. As state and federal legislators are struggling to define a regulatory scheme, members of the public who are excited about the possibilities of investing in something new like digital assets may suffer from harm.

This has, of course, already happened in various ways. In a recent high-profile example, members of the public were invited to invest in initial coin offerings (ICOs), buying tokens as a way to invest in start-up companies. 25 One study reported that approximately 78 percent of the ICOs offered in 2017 were actually scams. 26 In the United States, 33 percent of ICO investors believe that ICO operators "deceived them or withheld information from them." 27 The ICO market significantly cooled as federal prosecutors and the SEC began aggressively taking action against leaders of fraudulent ICOs, demonstrating how regulatory enforcement can indeed protect investors from harm. 28

[\*190] However, cryptocurrency scams are persisting beyond the ICO craze. The FTC recently warned the public that scammers are continually finding new ways to "trick people." 29 Members of the public are clearly at risk of a multitude of foreseeable--and unforeseeable--problems as applications of this technology develop, including fraudulent investments, breaches of privacy on blockchain platforms, digital identity theft, and insufficient data protection. Given these threats to the public, it is not appropriate for regulators to dawdle as blockchain applications continue to rapidly advance.

2. Attracting Innovation

While they work to protect the public, legislators and regulators can also use laws to signal their commitment to attracting blockchain-related companies to their locations. Some jurisdictions, including countries like Estonia and Switzerland 30 and U.S. states like Wyoming, 31 have already implemented regulatory schemes designed to win the interjurisdictional competition for blockchain business. 32

The resulting tension between protecting the public while promoting innovation lies at the heart of regulating digital assets and other applications of blockchain technology, as discussed in more detail in Section III.A. Despite the need for blockchain-related regulation, numerous challenges exist for lawmakers seeking to draft laws in this area--starting with the fact that the word "blockchain" does not have a commonly understood definition.

B. The Legislative Definition Problem

What is the legal definition of blockchain? This simple question has proved to be exceedingly difficult to answer. States considering blockchain legislation have focused on different characteristics of this new technology, meaning that "[d]efinitions in legislation introduced in 2018 in California, Florida, Nebraska and Tennessee differ[ed] from those of industry groups and from each other." 33 In some cases, the definitions were in conflict. 34 These inconsistent definitions [\*191] are problematic, as they "actually introduce legal uncertainty where it did not previously exist, and invite unnecessary and expensive litigation." 35

A clear definition of blockchain is necessary for legislative purposes as well, as it is required to help a jurisdiction create clear policies. 36 Moreover, a state's definition should enable policymakers and the public to focus on "the most unique value that the technology can deliver. It should be accessible to and understandable by the public, and yet technically specific enough to ensure that the [jurisdiction] can reap maximum benefit." 37 With such a high bar, legislators have understandably struggled to construct a working definition for this new technology.

The California Blockchain Working Group, after much discussion and debate, created a new definition of blockchain in 2020 for state legislative purposes:

"Blockchain" is a domain of technology used to build decentralized systems that increase the verifiability of data shared among a group of participants that may not necessarily have a pre-existing trust relationship.

Any such system must include one or more "distributed ledgers," specialized datastores that provide a mathematically verifiable ordering of transactions recorded in the datastore. It may also include "smart contracts" that allow participants to automate pre-agreed business processes. These smart contracts are implemented by embedding software in transactions recorded in the datastore. 38

The New York Senate took a simpler approach, defining blockchain as "a mathematically secured, chronological, and decentralized consensus ledger or database, whether maintained via internet interaction, peer-to-peer network, or otherwise used to authenticate, record, share and synchronize transactions in their respective electronic ledgers or databases." 39

Both of these definitions are technically correct, and they both reflect the policy decisions of their respective states. For example, California deliberately used the more flexible term "datastore," instead of "record" or "log," to reflect the verifiability of data shared amongst participants, the many use cases of this type of ledger, and the fact that many datastores could exist at once. 40

[\*192] One could argue that the lack of a uniform statutory definition is partly responsible for the patchwork nature of state blockchain regulation. After all, without a similar definition, it is nearly impossible to set policy goals and pass parallel legislation in multiple jurisdictions. However, the problem of inconsistent definitions is just the tip of the iceberg of interjurisdictional competition. 41 This competition is unlikely to subside even if the federal government or the Uniform Law Commission enacted a well-accepted, standardized definition of blockchain technology.

C. The Fast Pace of Blockchain Technology Development

Law always moves slower than technology. 42 This is partly because lawmakers and agencies can "struggle to capture emerging technologies in dusty regulatory frameworks." 43 For example, securities laws drafted in the 1930s could not have anticipated the sale of digital assets. 44 Even more recently drafted laws and regulations relating to the Internet do not fit blockchain technology. 45 Lawmakers must decide whether to fit this revolutionary technology within existing legal frameworks or start all over with new legislative schemes.

The constantly evolving nature of blockchain technology presents another challenge. This "industry is in its early stages of maturation," making it difficult to determine the initial policy choices that would lead to effective regulation. 46 There are also technical concerns still lurking within blockchain technology, such as locating the "weak points" that might be "gamed by bad actors," which could give rise to unanticipated legal problems. 47

Finally, even at this early stage, lawmakers must consider which aspects of the technology are important enough to regulate. Some of these are obvious, such as cryptocurrency and other forms of digital assets that involve sales to members of the public. But even within this category, it is "still too early to tell exactly which of the drivers of digital asset excitement is dominant," putting [\*193] "regulatory bodies in a tough position." 48 In this way, the wide variety of blockchain projects and the speed at which they are developing creates an additional barrier to effective regulation.

As an example, imagine a developer creates a brand-new digital asset and offers it to the public. How should regulators approach the regulation of this asset? Should regulators first consider the substance of the project, its connection to a decentralized ledger, its effect on consumers' privacy and security, or its potential to evade anti-money laundering and "[k]now [y]our [c]ustomer" laws 49 (or all of the above)? An effective regulatory scheme would need to include rules that are flexible enough to manage future technical developments as well as today's technologies. Otherwise, laws may need to be reconsidered and amended whenever a new technical application emerges.

D. Blockchain Technology's High Learning Curve for Lawmakers

Blockchain technology can be complicated and intimidating, and few lawmakers have training in computer science. A 2016 survey found only that only four of the 535 members of Congress had formal computer science degrees. 50 While the technical aspects of blockchain can be difficult to explain, most legislators can learn enough to understand the fundamentals. 51

New York's State Senate offers a case in point. The Senate's technical advisor reported that in 2019, "staffers and senators asked basic questions about blockchain and distributed ledger technology, prompting [the technical advisor] to develop an explainer presentation." 52 One year later, in 2020, many of the senators "appear more comfortable with the technology, which helps them see the value of [potential] legislation." 53

Legislators need not dive into minor technical details of blockchain to be able to regulate it. It is more important for legislators to focus on the function of blockchain and its practical applications, asking not "what is blockchain?" but [\*194] "what can blockchain do?" 54 Policymakers should focus on the use cases of blockchain, rather than its underlying technology. 55

Professor Angela Walch offered prescriptive recommendations for regulators learning about blockchain, advising them to cultivate their expertise (including self-education), consult with other regulators, follow the activity of standards organizations and academia, and "[w]atch and [l]earn" as the technology stabilizes. 56 Professor Walch also counsels lawmakers to "[a]dopt a [c]ritical [m]indset" in this educational process, to ensure they are not unduly influenced by hype or unreliable sources. 57

Legislators could also learn more about blockchain through the use of legislative working groups or task forces. For example, California's Blockchain Working Group drafted a report in accessible language, enabling state legislators to learn more about the technology and its potential applications for California in one comprehensive document. 58 The federal government has tried to follow this path. In 2019, a bipartisan group of senators proposed a bill directing the Secretary of Commerce to establish a federal Blockchain Working Group in 2019. 59 However, the bill, entitled the "Blockchain Promotion Act," is still currently in committee. 60

As a law professor who taught the first Blockchain and the Law class in San Francisco, I can anecdotally report that blockchain and cryptocurrencies are not easy concepts for nontechnical learners to grasp. However, over the course of one semester, my law students (most of whom did not have any technical training beforehand) were able to draft final reports and presentations not just describing the technology, but also analyzing the use cases deploying the technology. With a bit of time and effort, state and federal lawmakers can understand the potential for blockchain to transform their jurisdictions.

II. FIVE FACTORS FOR LEGISLATIVE CONSIDERATION

In light of the difficult nature of regulating blockchain, this Part offers five factors lawmakers should consider as they work to draft blockchain and crypto regulation.

[\*195] A. Policy Decision: Innovation vs. Protecting the Public Interest

In an ideal world, governments would be able to promote both innovation and the public interest. In reality, however, legislators usually need to debate and choose whether they will prioritize innovative technological development or consumer/public protection. This is especially true in the context of blockchain, since the public perception of blockchain varies widely. Many members of the public first heard of blockchain through Bitcoin, the digital currency. But early illegal use cases of blockchain technology also made headlines, including the infamous Silk Road darknet marketplace 61 and repeated cases of fraudulent theft through Initial Coin Offerings. 62 While the technology is neutral, blockchain can be used in malicious ways that harm the public. 63 Even well-meaning technology can implicate privacy and data protection concerns. 64

It is therefore "essential for both the industry and society that consumers and the capital market are protected from abuse." 65 No state or federal jurisdiction should enable blockchain technology to develop without guardrails to protect the public. The question is where those guardrails should lie. If states wait too long to regulate, the public may be harmed, and the costs of imposing requirements on industries that have already been established will be too great. However, if states develop restrictive regulations too early or the laws "become onerous," 66 businesses will relocate to more friendly jurisdictions. States in this position risk killing off innovation or pushing it to other states. 67 [FOOTNOTE] Blockchain businesses will move for regulatory reasons. See Daniel Kuhn, The Cryptocurrency Act of 2020 Is 'Dead on Arrival,' Washington Tells Sponsors, COINDESK (Mar. 11, 2020, 1:19 P.M.), https://www.coindesk.com/the-cryptocurrency-act-of-2020-is-dead-on-arrival-washington-dc-tells-sponsors [https://perma.cc/AP8X-KULR] ("Many projects are simply choosing to move elsewhere" because of regulatory uncertainty.). [END FOOTNOTE]

Part of the reason blockchain technology's applications are so challenging to regulate is that it "is difficult, if not impossible, for regulators to construct a framework that achieves clear rules, market integrity, and financial innovation." 68 This complex question explains the spirit of experimentation among states discussed in Part V, with some choosing restrictive regulatory structures, some choosing permissive approaches, and others choosing the middle. Regardless [\*196] of a jurisdiction's ultimate direction, legislators drafting blockchain legislation must evaluate how to protect the public while encouraging creative technological development.

B. Ethical Considerations

California was the first (and so far, the only) state to consider ethical considerations in the early stages of regulation. This author published the first law review article analyzing ethics in the blockchain industry in December 2019, 69 and also served as the primary drafter of the Ethical Considerations section in California's Blockchain Working Group report. 70

Depending on the type of blockchain at issue, numerous ethical issues may come up for regulators. For example, the increasing centralization of permissionless blockchains and the rise of permissioned blockchains may raise concerns about personal ethics, such as bias and conflicts of interest. As trends suggest that governance of blockchain systems is moving toward centralization, 71 individuals may have power to influence decisions made on that blockchain. If so, there is a potential for that individual's bias and conflicts of interest to come into play. 72

Although ethical discussions around blockchain appear slower to develop than the technology itself, several paradigms have been put forth advocating ethical considerations in this industry. 73 For example, the World Economic Forum recently asked participants and policymakers to sign on to its "Presidio Principles," an agreement to consider transparency and accessibility, agency and interoperability, privacy and security, and accountability and governance. 74 MIT's Digital Currency Initiative included the topic of blockchain ethics at its 2019 "Cryptoeconomics Systems Summit." 75

[\*197] In addition, the Beeck Center for Social Impact + Innovation at Georgetown University published the "Blockchain Ethical Design Framework," with a focus on six "root issues": "governance, identity, access, verification and authentication, ownership of data, and security." 76 This structure more specifically applies to developers, and is not a code of conduct or a legislative model, but it reiterates the idea that "we all share the responsibility to . . . demand intentional ethical approaches in the design and application of data and technology for social good." 77

California's Blockchain Working Group considered ethical issues related to social impact, including fairness, equity, accessibility, trust and transparency, and sustainability. 78 The Group proposed an ethical framework for the adoption of blockchain technology that is directed toward lawmakers as well as industry players. 79 This framework encompasses three main principles:

i. Address key ethical design goals

a) Seek societal benefit: Maximize good and minimize bad. b) Equity: Does this benefit all Californians, or only a few? c) Efficiency and effectiveness: How can we achieve ethical design and use cases without slowing innovation?

ii. Consider ethical uses of blockchain technology

a) Fairness: Is this technology designed and deployed in a fair, nondiscriminatory manner? b) Accessibility: Design to include the most vulnerable user. c) Responsibility: Anticipate and design for all possible uses. d) Sustainability: Create technology to advance sustainability, public health, and corporate social responsibility.

iii. Minimize unintended consequences

a) Are there unintended biases or conflicts in the design or use of this technology? 80 [\*198] b) Are any populations being unintentionally harmed by the way this technology is developing? c) Does this technology promote violations of local, national, or international law? 81

This useful framework offers guidance to regulators seeking to make sure they do not inadvertently violate ethical considerations, especially with hastily drafted legislation. Two examples illustrate the usefulness of this approach. First, it could be relatively easy to create a certification process for blockchain developers who provide services to the State of California. But will that certification process limit approval to developers with degrees from elite institutions? This type of action would raise equity concerns, as the blockchain industry should be working more toward diversity in gender, cultural backgrounds, and perspectives of industry participants. Second, could companies who advance environmentally sustainable blockchain development receive tax credits from the state? Although different jurisdictions may embrace different ethical principles, legislators should discuss these issues as they contemplate ways to regulate this new technology.

C. Transparency

Since "the rule of law requires transparency," 82 jurisdictions in the United States are governed by transparency laws. The federal government's administrative agencies must abide by the Administrative Procedure Act, which (among other things) orders federal agencies to act "transparently and fairly." 83 California's Bagley-Keene Act requires state boards or commissions (including working groups) to "publicly notice their meetings, prepare agendas, accept public testimony and conduct their meetings in public unless specifically authorized to meet in closed session." 84

Legislators are likely already aware of the government transparency laws in their jurisdiction, but there are other reasons transparency is especially important in the context of blockchain regulation. First, all stakeholders should be given the opportunity to weigh in on laws governing this nascent industry. 85 The industry players on the front line have valuable perspectives to share with legislators, and input from various stakeholders will create more efficient regulation. Moreover, the technology is moving quickly, and there may be applications of blockchain in development that legislators do not even know about yet. As the Cryptocurrency Act of 2020 revealed, 86 drafting laws without the collaboration of diverse stakeholders is ineffective.

[\*199] Second, although blockchain technology may eventually touch all areas of business, members of the public may be unaware of blockchain technology's potential. Legislative debates could double as community education opportunities, allowing people who would not ordinarily be interested in blockchain to attend Working Group meetings, task force briefings, and other public discussions of this new technology. Such meetings could be advertised to nontechnical professions and community organizations, and should be held in easily accessible public places and online. Legislators themselves could reach out to their nontechnical constituents and offer ways to connect them to educators and leaders in the blockchain industry. Such transparency could create a culture of innovation in a particular jurisdiction, while increasing public credibility for whatever regulations eventually develop.

D. Interjurisdictional Competition

States have been competing with each other since the beginning of the republic, and the competition has not decreased as our economy has become more complex. 87 In corporate law, interjurisdictional competitions are a common affair. The state that "wins" the race, creating the environment to attract the most businesses to that state, can secure both tax revenue and additional jobs for state residents. Delaware indisputably won the fight for corporate charters among states, with over 1.5 million legal entities, including 67 percent of all Fortune 500 corporations, incorporated there. 88 The reasons for Delaware's success include specialized legislation that is updated each year to adapt to technical and other changes, as well as a corporate-specific chancery court that can move cases quickly along. 89

When Limited Liability Companies (LLCs) were created in Wyoming in 1977, another interjurisdictional race was on. 90 Despite concerns that interstate LLCs would have problems without uniform LLC statutes among the states, "most states enacted LLC statutes before efforts to develop standardize statutes came to fruition." 91 As a result, only twelve states ultimately adopted uniform acts, and there is less uniformity for LLC statutes than for other business forms. 92

The same is happening now with statutes related to blockchain technology. States who can win the race to attract blockchain businesses to incorporate and domicile in their state can earn more than just increased tax revenues from start-up companies. Such a state could also create a reputation for being friendly to [\*200] technological innovation, a reputation that would have impacts beyond blockchain technology. For this reason, some states (including Wyoming, the first state to draft LLC statutes in 1977) jumped out first to enact permissive blockchain-and crypto-friendly regulations. 93

Before enacting regulations, however, state legislatures should ensure they are clear on the policies underlying those regulations. For example, as discussed in Section II.A above, states should consciously strike a balance between protecting the public and encouraging innovation. Without establishing prioritized policies in advance, a state may win the interjurisdictional competition in the short term but create unintended consequences, such as unnecessary litigation or public harm, in the long term.

E. Uniformity

As a member of the California Blockchain Working Group, this author asked industry leaders in late 2019 what they preferred to see in blockchain regulation. Each of them clearly and unequivocally stated that uniformity of regulation across the United States would be good for business. It would be much easier for blockchain businesses to plan and expand their operations if states were aligned on regulatory issues, particularly in the area of digital assets.

The Uniform Law Commission (ULC) has made several attempts to create a standardized approach to digital asset regulation. 94 In 2017, the ULC proposed the Uniform Regulation of Virtual-Currency Businesses Act to provide "a statutory framework for the regulation of companies engaging in 'virtual-currency business activity.'" 95 An accompanying "Supplemental Act" in 2018 provided rules related to commercial law and the Uniform Commercial Code. 96

These model acts had a short and controversial lifespan. No state enacted the model legislation, and only a handful of states introduced it. 97 Wyoming actively resisted the ULC's request to withdraw Wyoming's pending blockchain [\*201] legislation in favor of adopting the ULC's approach. 98 Wyoming's legislators noted that the ULC's model acts had not yet been enacted by any jurisdictions, and explained why they considered Wyoming's regulatory approach to be the superior one. 99 One month later, the ULC recognized the need to convene a committee to study how the Uniform Commercial Code could be amended in order to "deal with emerging technologies." 100 The ULC urged "states to refrain from enacting legislation pending the result of the committee's work," 101 an act suggesting that the ULC recognized flaws in its proposed acts. 102 Given the ongoing interjurisdictional race described in Section II.D, it seems absurd to ask states to wait on enacting blockchain legislation.

As of December 2020, only one state (Louisiana) had passed a virtual currency licensing statute based on the ULC's uniform act. 103 It is clear that, much like the race for corporate and LLC charters, the uniformity train has left this station. In the absence of federal legislation or effective model acts, states have already invested time and energy into drafting new laws. States like Wyoming, which has "actively decided to lead the charge in ensuring solvent, blockchain based" companies, 104 will not willingly give up their leading positions in this area.

III. THE CURRENT UNEASY MIX OF FEDERAL AND STATE BLOCKCHAIN REGULATION

Federal and state regulators are struggling to keep up with the fast pace of blockchain technology development. This Part will demonstrate how this struggle is creating a wide variety of regulatory approaches.

[\*202] A. Patchwork Agency Regulation

The federal government's attempt to regulate blockchain technology, particularly cryptocurrencies, is (to put it bluntly) a mess. Federal authorities interpret laws relating to blockchain and cryptocurrencies differently. 105 This confusing, piecemeal approach is epitomized by the struggle to determine how to even classify digital currency for regulatory purposes. The Internal Revenue Service (IRS) views cryptocurrency as property, the Securities and Exchange Commission (SEC) classifies such currencies as securities, and the Commodity Futures Trading Commission (CFTC) considers cryptocurrency to be a commodity. 106 There is clearly a need for a unified methodology, even just within blockchain's narrow use case of cryptocurrencies, but this confusion is not a surprising result when "neither Congress nor the SEC has formally elucidated which digital assets are securities and which are not." 107

Different agencies are sending different messages, creating "regulatory whiplash." 108 Some, like the CFTC, are inclined toward experimentation to support blockchain and cryptocurrency development, while others are more cautious. 109 All of the agencies seeking to regulate blockchain technology and its applications would benefit from consideration of the five factors listed in Part III. Below is a short explanation of three distinctive agency approaches.

[\*203] 1. SEC Safe Harbor Provision--A Work in Progress

The SEC missed its chance to establish a clear regulatory framework early in the life span of blockchain technology, instead adopting an approach characterized by delay and a series of reversals on important decisions. 110 The SEC's delay "simultaneously encouraged unscrupulous actors to take advantage of ambiguous regulations" and issue fraudulent tokens to Americans, while "driving away conscientious developers and entrepreneurs" to places with more developed laws. 111 The SEC's attempt to clarify its position in a limited area with the April 2019 issuance of a "Framework for 'Investment Analysis' of Digital Assets" has been called "too little too late." 112

In the meantime, SEC Commissioner Hester Peirce has earned the nickname "Crypto Mom." 113 In early 2020, she offered her take on the legislative problems related to blockchain technology, saying "[i]t is important to write rules that well-intentioned people can follow. When we see people struggling to find a way both to comply with the law and accomplish their laudable objectives, we need to ask ourselves whether the law should change to enable them to pursue their efforts in confidence that they are doing so legally." 114 Peirce clearly views law and regulation as a way to promote, not thwart, the development of blockchain and its use cases.

In February 2020, Peirce proposed a safe harbor provision for firms in the cryptocurrency space selling tokens to the public. 115 Peirce described her proposal as recognizing "the need to achieve the investor protection objectives of the securities laws, as well as the need to provide the regulatory flexibility that allows innovation to flourish." 116 The safe harbor proposal includes disclosure requirements for issuers and good faith obligations to ensure that token issuers are not fly-by-night companies. It also sets forth rules related to the purpose of token issuances and efforts to create liquidity for token users. 117

[\*204] The idea underlying the proposal is to "give new projects some breathing room where they can do their work without fear of being fined, arrested or having their offices raided." 118 This also filters "out the bogus projects that have no intention of building a workable, decentralized product." 119 Peirce appears to be seeking a way to protect consumers from unscrupulous token issuers while allowing companies to move forward with technical developments.

Many members of the blockchain industry welcomed the safe harbor proposal. The General Counsel for a cryptocurrency exchange declared, "Today we both congratulate and thank SEC Commissioner Hester Peirce . . . . This is a great day for the blockchain industry and the United States." 120 But the proposed safe harbor is just that: a proposal. It is not yet law, and may never become law. 121 Even so, the willingness of Commissioner Peirce to think outside of the box with this proposal has reinforced her reputation (and her nickname) within the blockchain community.

2. The Federal Reserve's Digital Dollar

The Federal Reserve revealed in February 2020 that it was working toward a potential central bank digital currency (CBDC). 122 A CBDC, colloquially [\*205] known as a "digital dollar," is not a token based on a decentralized blockchain. 123 It would instead be a "debt notation on a centralized ledger maintained by the Federal Reserve," which would use a centralized database to track consumer or business balances. 124 Individuals could "access funds through digital dollar wallets, which would also be managed by the Fed." 125

Although the digital dollar is different from a crypto asset on a blockchain, the policy issues at hand are quite similar. The Federal Reserve recognizes that these policies include financial stability and legal considerations, such as privacy concerns and protections for data and digital identity safety. However, the Federal Reserve clearly wishes to be on the cutting edge of the digital dollar debate, with one of its members noting that "it is essential that we remain on the frontier of research and policy development regarding CBDC." 126

At the time, there was pressure on the Federal Reserve to begin researching a digital dollar. China is creating a digital yuan, 127 and some argue that the United States is already "falling behind" other countries in developing a CBDC. 128 In addition, the surprise release of Facebook's Libra in 2019 (now rebranded as "Diem") apparently inspired the Federal Reserve to accelerate its research on the potential of a CBDC. 129 The arrival of the COVID-19 pandemic expedited the discussion, as millions of people around the world moved toward cashless payments. 130

The discussion of a digital dollar jumped quickly during the pandemic from the Federal Reserve to Congress. Drafts of congressional emergency pandemic relief legislation in March 2020 included a digital dollar concept to speed up the delivery of stimulus payments. 131 A Congressional Task Force on Financial [\*206] Technology held hearings on the issue in June 2020. 132 Indeed, "the question might be not if digital currencies will find their way into the financial system, but when--and how." 133 As federal lawmakers move toward the creation and regulation of a CBDC, they should be pondering how to encourage innovation while protecting consumers. In addition, anyone involved with the CBDC should consider transparency issues involving the input of multiple stakeholders, as well as ethical considerations such as concerns for unbanked populations.

3. Treasury Department Regulations to Increase Cryptocurrency Transparency

Unlike SEC Commissioner Hester Peirce and the Federal Reserve, U.S. Treasury Secretary Steven Mnuchin has taken a more cautious (and arguably negative) approach to cryptocurrency. 134 In February 2020, Secretary Mnuchin told the Senate Finance Committee that the Treasury Department would be enacting "stricter regulations around digital currencies to help expose 'secret' accounts and other nefarious activities." 135 Although Mnuchin acknowledged that "[w]e want to make sure that blockchain technology moves forward," he also noted that "[w]e want to make sure cryptocurrencies aren't used for the equivalent of old Swiss secret number bank accounts." 136

The goal of Treasury regulations will be to "ensure law enforcement can see where the money is flowing, and that it's not used for money laundering." 137 A March 2020 press release from the Treasury Department announced that the Department had held a meeting of "industry thought leaders and compliance [\*207] experts" on the issue of cryptocurrency regulation. 138 The press release also explained that as these regulations develop, Treasury will remain focused on preventing illegal conduct by "money launderers, terrorist financiers, and other bad actors." 139 The repeated use of such negative terms indicates the Department's adverse stance toward cryptocurrencies, as well as an example of lawmakers and regulators "still cling[ing] to an outdated trope where cryptocurrencies are used to underwrite criminal activity." 140

What can we make of this patchwork approach to regulation among U.S. federal agencies? Some may argue that it is better for the federal government to allow the blockchain industry and cryptocurrency markets to evolve before finalizing a regulatory structure. There can also be benefits to regulatory divergence, such as enhanced innovation as agencies compete to become the preferred regulator in a particular field. However, the absence of "intelligent rules and regulations that provide a clear and predictable framework for investors, issuers, and their lawyers" is complicating that evolution. 141 How can lawyers advise clients--such as start-up companies desiring to operate in the cryptocurrency sphere or offer tokens to investors--if it is unclear how such assets would be regulated? Policymakers are not sufficiently considering important factors, including transparency and uniformity, under this current approach.

Perhaps the problem is a lack of unity among federal agencies, who appear to be tripping over themselves to get in on the digital asset regulatory action. Federal policymakers may be concerned that they are not yet educated enough to make cohesive decisions about overarching regulatory frameworks, or they are waiting for Congress to step up. In any case, this confusion at the federal level is wreaking havoc on the blockchain industry in the United States. Innovative companies must risk inadvertently violating regulations (and having to pay the ensuing fines) just to push the industry forward. 142 Alternatively, companies are choosing to leave the U.S for other jurisdictions with better regulatory [\*208] clarity. 143 Piecemeal regulation among federal agencies is "not a substitute for transparent legislation or judicial rulings to guide market participants." 144

### Antitrust---1AC

#### Advantage 2---FTC

#### FTC credibility is tanked by both unwillingness to launch bold antitrust AND a track record of losing in court, but Khan’s appointment is a window to revamp its policy

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Since taking over at the FTC, Khan has quickly begun to remodel it. Some of these changes look like technical internal reforms, while others are major policy statements. Almost all have been fiercely opposed by Republicans and the business community.

In the past few weeks, Khan has begun holding commission meetings in public - something Democrats say makes the commission more open to scrutiny, but which the two Republican commissioners say makes it harder for them to negotiate compromises.

She has banned staff from making public appearances such as conference panel sessions, saying the commission has too much work to do. She has passed a rule which allows FTC staff greater leeway to pursue investigations in certain priority areas, giving them the power to issue their own subpoenas for documents and testimony.

Khan is also promising to help rewrite the US merger guidelines, a complex set of documents laying out what kinds of evidence regulators look for when deciding whether a merger is illegal.

And, in a pair of crucial decisions, she and her fellow Democratic commissioners voted to rescind two key FTC policy statements.

The first was written in 1995 during Bill Clinton's first term as president, and deemed that companies that had previously proposed unlawful mergers no longer had to notify the FTC before completing future transactions in the same market.

By undoing that policy, Khan said she hoped to stop companies simply trying again and again to complete a merger even after it had been rejected by regulators. The second statement was written in 2015 during the Obama administration and set down limits on when the FTC would prosecute a company for socalled "unfair methods of competition".

"These changes are going to make dealmakers think about things differently," says one senior Democrat working for the commission. "They are not filing an application, we are investigating as to whether there is a violation of the law. That is a fundamentally different way of thinking about things."

Meanwhile, the White House has given the FTC the even bigger task of helping rewrite the rules that underpin the American economy. Under the terms of a sweeping order signed by Biden last month, the commission has been asked to devise rules which would ban companies from stopping employees moving to rivals, and prevent pharmaceutical companies from paying generic rivals not to enter a certain market for a period of time.

The moves have delighted progressives, who say Khan's willingness to push through reform quickly shows she is serious about putting the commission back at the heart of Washington rulemaking and enforcement.

"The commission has been lazy," says Matt Stoller, director of research at the American Economic Liberties Project and a former colleague of Khan at the Open Markets Institute. "It has been a place where you send political cronies who don't have to do any work if they don't want to.

"This is such a different form of politics from the normal bullshit."

Republican concerns But if the reforms have pleased Khan's supporters, they have worried conservatives who say the commission lacks both the legal authority and the institutional capacity to do what is being asked of it.

For example, Khan says she wants to renew the commission's appetite for bringing cases against companies for "unfair methods of competition" - a vague category of corporate behaviour which allows the FTC to act even when there is no merger in question or when a company is not large enough to be a monopoly. She and fellow progressives argue that by not pursuing such cases the FTC has taken away one of its most powerful weapons.

Such behaviour is often very hard to prove, however. When the FTC charged Abbott Labs in 1994 with trying to rig a bid to supply the Puerto Rico government with infant formula, for example, it alleged the company's choice not to bid in one of the rounds provided evidence of collusion with rivals. Abbott Labs' lawyers, however, successfully used game theory to explain why a "no bid" could in fact have made rational economic sense.

More controversial is the idea that the commission is going to start writing wide-ranging new rules of its own, as envisioned in Biden's competition order. This would test the limits of the FTC's powers in both court and on Capitol Hill, critics say, and could end in Congress clipping its wings as it did in 1980 when the FTC was forced to subject its rules to Congressional review.

Sean Heather, senior vice-president for antitrust at the US Chamber of Commerce, says: "The FTC is writing its own rules and acting as prosecutor, judge and jury. This is deeply concerning for a regulatory agency with broad powers."

Christine Wilson says: "I believe competition rulemaking is institutional suicide."

If Khan wanted an indication of how courts might view her approach, she got one within weeks of taking over the commission. In June, a federal judge dismissed the commission's complaint against Facebook, its most high-profile in years.

The commission had argued the social media company had engaged in anti-competitive conduct for years, including by buying up potential rivals such as WhatsApp and Instagram. In June, however, a federal judge ruled the commission had failed to prove that Facebook had monopoly power.

Khan's critics worry that if the commission loses a series of high-profile court cases it will fatally undermine its authority. "If you lose enough cases your credibility evaporates," says William Kovacic, a former Republican chair of the commission. "You can lose it all - not right away, but you can lose it all."

For Khan's supporters, however, this criticism borders on the absurd. "Don't you think the FTC is already seen as weak?" says Rohit Chopra, a Democratic commissioner.

Progressives argue the FTC has for years only enforced competition rules against large companies in a fraction of the cases it should have. "Do you think there are only 10 anti-competitive mergers a year?" says Chopra. "I'm not sure it can get any worse."

"The FTC can put together legal teams that can match the best in the bar, punch for punch, in a major case," says Kovacic. "But the number of those teams is a couple, it is not 10."

For years the commission's budget and staffing levels have been chipped away. It now has roughly 50 per cent of the staff it had in 1980 and is currently trying to review a record number of mergers. In the first nine months of this fiscal year, the FTC received 2,573 notifications ahead of a large merger - already 50 per cent more than were received in the whole of last year.

Last week, the commission published a statement warning that it would not be able to review all mergers within 30 days of a notification being made, as required by law. Instead, the FTC said, if it had not had time to review a merger before it took place, it would reserve the right to take action even after it had been completed.

The commission is also facing an uphill battle to retain staff. Some people say they feel demoralised by the pace of change and irritated they have not yet met their new chair - something Khan's allies say is an unfortunate result of the pandemic. "There are only so many times you can hear that your institution has failed for years before you start to doubt your place in it," says one staff member.

#### Specifically---blockchain is a key priority

Dr. David Morris 21, PhD in Media Studies from the University of Iowa, Former Academic Sociologist of Technology, CoinDesk’s Chief Insights Columnist, “Biden’s New FTC Chair Could Be a Big Web 3.0 Ally”, The Crypto Daily News, 6/16/2021, https://thecryptodailynews.com/2021/06/bidens-new-ftc-chair-could-be-a-big-web-3-0-ally/

Yesterday, the Biden administration named Lina Khan, a 32-year-old Columbia Law professor, as the brand new head of the Federal Trade Commission. Khan, who would be the youngest FTC head ever, is called a fierce critic of massive tech monopolies like Amazon. While there’s typically a knee-jerk resistance to regulation and regulators amongst blockchain advocates, Khan’s considerations make her a potential ally on huge points like privateness. Her antimonopoly work might additionally create substantial market alternatives for brand new sorts of tech companies – together with these constructing decentralized techniques and “Web 3.0.”

Enforcing U.S. antitrust regulation is a main a part of the FTC’s mandate, and Khan might be greatest identified for serving to redefine simply what a “monopoly” is. She has been essential, together with throughout seven years on the Open Markets Institute, in growing and selling the concept a firm could be a monopoly even when its practices drive prices down – even, the truth is, if its product is free to customers. That principle largely hinges on how the companies collect and use knowledge: Khan has been among the many loudest critics of the way in which Amazon makes use of knowledge gathered by its storefront, akin to by leveraging sales data to compete with third-party sellers who’re, a minimum of buyers, its prospects.

#### Failing to control blockchain violations will outstrip federal enforcement capacity, making traditional antitrust completely ineffective

Drew Stanko 21, JD Candidate at St. John's University School of Law, BS in Economics from Villanova University, “Recent Developments and the Need for Nuance”, Journal of Civil Rights & Economic Development, 4/8/2021, https://www.jcred.org/shortreads/efforts-to-modernize-antitrust

I. IS NEW SCHOOL OFFICIALLY HERE?

In January 2007, the Economic Analysis Group at the Department of Justice Antitrust Division published a Discussion Paper entitled "Does Antitrust Need to be Modernized?" The paper reviewed whether "globalization and rapid technological change" necessitated changing federal antitrust laws. This Discussion Paper has proven prescient; it identified as a "key issue" the growing need for improving antitrust enforcement of alleged exclusionary conduct related to intellectual property.

Bipartisan support for antitrust reform has grown immensely since January 2007 due to heightened market concentration and Mergers & Acquisitions (M&A) rates in an increasingly complex digital economy. Senator Amy Klobuchar introduced antitrust reform legislation in February that would provide substantial funding increases to the FTC and the DOJ Antitrust Division, and the Biden Administration appears to be supporting efforts to modernize antitrust enforcement.

Recently, President Biden indicated intent to name two prominent "New School" antitrust attorneys and scholars, Lina Khan and Tim Wu, to positions in his administration. Kahn, who rose to prominence as a student at Yale Law School for "Amazon's Antitrust Paradox" and has since held positions at the Open Markets Institute and the FTC, will reportedly be nominated to serve as the Commissioner of the Federal Trade Commission. Wu is famous for coining the term "net neutrality" and authoring "The Curse of Bigness: Antitrust in the New Gilded Age," and he will serve on the National Economic Council as a special assistant to the president for technology and competition policy. Kahn and Wu have helped establish and develop the "New School" of antitrust jurisprudence, and both have taught related courses at Columbia Law School. Generally, the New School aims to prioritize "innovation, entrepreneurship, privacy, freedom of the press, and economic and civil liberties" rather than strictly focusing on "consumer welfare."

II. SENATOR KLOBUCHAR'S COMPETITION AND ANTITRUST LAW REFORM ACT:

Senator Amy Klobuchar, who spoke passionately about her concerns related to antitrust enforcement throughout her Presidential campaign, introduced antitrust reform legislation in February.

Sen. Klobuchar's proposal, the Competition and Antitrust Law Reform Act, aims to "give federal enforcers the resources they need [to] . . . strengthen prohibitions on anticompetitive conduct and mergers, and make additional reforms to improve enforcement." In order to accomplish these goals, the proposal would provide increased funding for the DOJ Antitrust Division and the FTC and would create a new FTC "Market Analysis" Bureau. While these structural and administrative reforms may receive bipartisan support, Sen. Klobuchar's proposal would also substantially alter the legal standards used to evaluate antitrust challenges under the Sherman and Clayton Acts, a change likely to be met with pushback by conservative economists and lawmakers. Sen. Klobuchar's proposal aims to accomplish important goals, but some argue the Sherman and Clayton Act amendments included in the legislation would "add friction to M&A Activity, stalling capital markets, reducing innovation and investment, and frustrating economic growth."

1. CLAYTON ACT REFORMS

Senator Klobuchar's proposal would modify the Clayton Act to "restore its original intent by amending it to include reference to 'exclusionary conduct.'" The legislation would define exclusionary conduct as "any conduct that would materially disadvantage . . . actual or potential competitors, or foreclose the ability of or incentive to compete." Currently, antitrust challenges require the plaintiff provide prima facie evidence that alleged anticompetitive effects of proposed mergers would result, and "proponents of the merger are then permitted to rebut by providing evidence that the merger will not have the feared anticompetitive effects."

The amendments would shift the presumption that "exclusionary conduct" presents a violative "appreciable risk" where such conduct is taken by a firm with a market share greater than 50% or otherwise wields significant market power. In turn, the burden would be on firms to prove the procompetitive market effects of the challenged conduct or merger rather than on the challenging entity to establish the anticompetitive impacts of the conduct that would result.

While it is important that antitrust reform efforts prioritize enforcement of anticompetitive exclusionary conduct, the legislation arguably defines the term overbroadly. Accordingly, the proposal may result in disincentivizing innovation that would ultimately benefit consumers and the overall economy. By presuming the illegality of any conduct taken by large firms that disincentivizes market entry or competition, the proposal risks unintentionally penalizing firms for achieving beneficial economies of scale or otherwise innovating to provide higher quality products more cheaply than competitors. Arguably, threatening firms with costly antitrust litigation whenever they undertake innovative conduct that negatively impacts competitors risks disrupting market incentives and stalling economic growth.

2. SHERMAN ACT REFORMS

Similarly, the Sherman Act would be modified to allow civil penalties of either 15% or 30% of a firm's US revenues for anticompetitive exclusionary conduct. Sen. Klobuchar has indicated that civil penalties are necessary because the existing remedies—injunctions, equitable monetary relief, and private damages—have not sufficiently deterred anticompetitive conduct. This may be true, but civil penalties of this size likewise risk stifling and disincentivizing innovation.

3. FUNDING ENFORCEMENT AGENCIES, FINANCING NEW "MARKET ANALYSIS BUREAU"

While the Sherman and Clayton Act reforms are unlikely to garner significant support from conservative lawmakers, the funding increases and creation of the FTC Market Analysis Bureau are more likely to win bipartisan support.

Increasing the funding available to the FTC and the DOJ would enable the agencies to hire more attorneys and would finance the creation of the Market Analysis Bureau. The MA Bureau would supplement the FTC's existing Competition, Consumer Protection, and Economics Bureaus. It would be tasked with conducting market, industry, and retrospective merger analyses aimed at helping the FTC develop a better understanding of the competitive conditions and underlying economic dynamics affecting complex markets. The creation of the MA Bureau is likely to gain support because it would demonstrate a commitment to ensuring continued reliance on empirical analyses rather than judicial or political discretion. Accordingly, these reforms would likely bolster enforcement efforts without necessarily adopting the "Big is Bad" approach that has historically divided lawyers and economists.

III. MODERNIZING ANTITRUST ECONOMICS

The Market Analysis Bureau would theoretically improve enforcement agencies' understanding of the economics underlying complex markets. This would provide enforcers with the tools needed to prosecute anticompetitive conduct that may have otherwise skirted enforcement due to the difficulty of establishing the negative economic effects of the conduct in question.

The complexity of the digital economy and increasing market concentration has made it more difficult for prosecutors to prove these anticompetitive results, but advances in machine learning and computational antitrust may assist in identifying and consistently enforcing antitrust violations.

While computational antitrust is certainly in its nascent stages of development, the early returns from Stanford's new Computational Antitrust Project are promising. The project's seminal article, authored by Project Director Thibault Schrepel, defines computational antitrust as a "new domain of legal informatics which seeks to develop computational methods for the automation of antitrust procedures and improvement of antitrust analysis." There are more than fifty global antitrust enforcement agencies participating in the project, including both the US FTC and the DOJ Antitrust Division.

Schrepel situates computational antitrust within "Antitrust 3.0," which he explains "is emerging but remains incomplete." At the core of Antitrust 3.0 is the goal of developing consistent enforcement frameworks designed to combat anticompetitive conduct in digital markets.

IV. OUTLOOK

In "The End of Antitrust History Revisted," Kahn "reviews" Wu's The Curse of Bigness and explains that the "task facing reformers is to translate their critiques into a positive vision, including legal rules and analytical frameworks." These analytical frameworks will be critical to ensuring that antitrust law promotes free market economics, rather than subjects firms to inconsistent judicial interpretation and prosecutorial discretion.

The majority of federal antitrust law applicable today was authored prior to 1915, and the unique challenges associated with prosecuting exclusionary conduct in digital markets have presented concerns for nearly twenty years. While bipartisan support for antitrust reform and emerging scholarship both provide legitimate reason to be optimistic about efforts to modernize federal antitrust law, it is important that reforms are nuanced enough to confront the complex problems they are enacted to address.

Accordingly, while Senator Klobuchar's proposal is certainly "well-intentioned," the budgetary reforms and creation of the Market Analysis Bureau should be separated from and passed without the proposed Sherman and Clayton Act amendments included in the legislation. The newly-appointed experts in the Biden Administration should be afforded the requisite resources to capitalize on the promise of New School antitrust jurisprudence and the development of Antitrust 3.0. By providing these resources, those leading antitrust modernization efforts will be equipped with the tools needed to create nuanced legal frameworks that reflect modern critiques and ensure consistent enforcement practices.

#### This will create a legitimacy crisis that threatens the foundational credibility of the FTC

Dr. Thibault Schrepel 19, PhD in Antitrust Law from Université Paris-Saclay, LLM in International Law and Legal Studies from the Brooklyn Law School, Associate Professor of Law at VU Amsterdam University, Faculty Affiliate and Creator and Director of the Computational Antitrust Project at the Stanford University CodeX Center, “Collusion by Blockchain and Smart Contracts”, Harvard Journal of Law and Technology, 33 Harv. J. Law & Tec 117, Fall 2019, Lexis

V. CONCLUSION

Blockchain is a new and yet little-explored territory. It is, amongst other things, the Amazon 228 of tomorrow's collusive agreements: full of different life forms and new possibilities, the technology will give rise to unidentified creatures and dangerous species that we do not really know how to approach.

I have first shown that blockchain will be used to enhance the functioning of collusive agreements as we know them and that new forms of collusion linked to the technology conditions of access and use will appear as well. Second, blockchain will increase the stability of collusive agreements, providing them with a good life. Depending on whether the blockchain is public or private, a double paradox could emerge. One paradox is related to the visibility of all practices to colluders while ensuring their opacity to non-colluders. The other is associated with the fact that collusive agreements will be more robust during their lifetime by eliminating a large proportion of deviant behaviors, but will die in more brutal ways.

For these reasons, one can expect an increase in the number of collusive agreements along with an increase in their profitability, but not necessarily in their duration. The number of leniency applications may also drop because blockchain will reinforce trust during the lifetime of collusive agreements. This is largely due to the potential use of smart contracts because once again, "[o]ne of the greatest checks on crime is not the cruelty of punishments, but their inevitability," 229 which is precisely what smart contracts provide by automating punishments.

[\*164] The time has now come to detect collusion by blockchain and smart contracts, however difficult that may be. I have shown that some blockchains are more likely to induce collusive agreements than others. Antitrust and competition authorities may start with focusing their efforts on these blockchains and creating safe harbors for the others, for instance, by ensuring that no sanction will be imposed under antitrust and competition law for a specified number of years. Antitrust and competition authorities may also, when sending questionnaires to undertakings, ask whether they use blockchain, and if so, what type of blockchain, using which consensus, and for what purpose.

But perhaps it is even more urgent to adapt existing legal toolboxes before they become entirely ineffective, which implies considering a "law is code" approach and, generally speaking, transforming part of antitrust and competition law to become allies to blockchain core developers rather than mere threats. 230 It is said that "it is tempting, if the only tool you have is a hammer, to treat everything as if it were a nail." 231 As true as this statement is, all we have in existing laws is one size of pliers. With the wrong tools, the most sophisticated technology requiring great precision will not be as adjusted as it could be. Antitrust and competition agencies are currently not equipped to fight collusive agreements by blockchain. This may cause a legitimacy crisis for antitrust and competition law that may become ineffective sooner than expected. Indeed, it is more than likely that the use of current regulatory tools will be prevented by the technical characteristics of blockchain. Agencies further need to start analyzing code and software programming. Without doing so, most illegal activities on blockchain will remain safe. The same is true for all practices outside of blockchain which use the Internet. To date, antitrust and competition agencies refuse to analyze the programming of platforms and software. This creates a legal loophole and encourages companies to commit anti-competitive strategies precisely here. 232

Without fundamental research on this subject, palliatives will continue to be present, risking the survival of blockchain 233-- or antitrust [\*165] and competition law. 234 Some propose the creation of an identity management system so that the real identities of blockchain users can be revealed. 235 Others have suggested "adding a regulatory node in the blockchain" to spy on it 236 or imposing fines to the core developers when blockchain is used for illegal activities. 237 Going even further, it has been said that public blockchains "governed by international institutions from the legal tradition" such as the United Nations should be created. 238 But in fact, these solutions are either ineffective or would jeopardize the utility of the technology as its applications rely on the key characteristics that I have exposed in our introduction and that would be challenged by these various initiatives. Let us recall first and foremost that blockchain is a fundamental technology that may create good for the world. 239 The creation of safe harbors 240 and regulatory sandboxes 241 will enable competition agencies to respond quickly to the challenges posed by blockchain, but in the end, only a re-conceptualization of the law will provide a satisfactory answer. 242 Without it, antitrust and competition law will face a second legitimacy crisis arising from the absence of decentralized regulatory mechanisms. After all, how can decentralized transactions be properly regulated by pyramidal rules and institutions?

#### Failure of FTC crushes the effectiveness of the agency

William E. Kovacic 15, Global Competition Professor of Law and Policy at the George Washington University Law School and Non-Executive Director of the United Kingdom Competition and Markets Authority, “Creating A Respected Brand: How Regulatory Agencies Signal Quality”, George Mason Law Review, 22 Geo. Mason L. Rev. 237, Lexis

Introduction

One determinant of a government agency's effectiveness is its reputation, or "brand." Much like a commercial enterprise, an agency develops a brand that signals quality to various observers. A good reputation can help the agency recruit skilled personnel, gain deference from courts, build credibility with business managers, and build popular support that can yield larger budgets and enhancements to its powers. An agency with a strong brand stands a greater chance of being effective than one with a weak brand.

This Essay considers how branding can affect the performance of the Federal Trade Commission ("FTC") and other agencies responsible for economic regulation. It analyzes how investments in building a good brand enable the regulatory agency to signal quality to various observers - insiders such as agency staff and outsiders such as businesses, consumer groups, courts, and legislators. Part I of this Essay defines the concept of a brand for public agencies. Part II then discusses why an agency's brand can be important to its effectiveness and identifies what types of agency activities either enhance or degrade an agency's brand.

The examination of agency branding has several purposes. One aim is to improve our understanding of how public agencies build a reputation, and to study the role of reputation in determining effectiveness. A closely related goal is to give public officials a better understanding of how they should approach the task of deciding what their agencies must do to prosper.

A further aim is to underscore the impact of institutional design and managerial incentives on agency performance and to illuminate how design choices and incentive schemes influence the development of a well-respected, coherent agency brand. Various design choices - for example, whether to give the competition agency a single function or a multi-purpose substantive mandate, whether to govern the agency by a single executive or [\*238] by a board, whether to integrate the tasks of prosecution and adjudication in a single body or to unbundle them among distinct entities - affect the capacity of the agency to enhance the quality of its brand. Incentives that give incumbent leaders reason to make investments in long-term agency capacity and quality have the same effects.

I. Brands and Public Institutions

Public institutions, such as competition or consumer protection agencies, build reputations or "brands" that the agency's own employees and external observers associate with the agency. 1 Brands perform two functions for the public agency. The first function is informational. 2 A good brand conveys a good sense of what an agency does. It communicates, at least in a general way, the scope of the agency's responsibilities and the aims that motivate the agency in the exercise of its powers.

A brand also signals institutional quality. For an agency such as the FTC, the foundations for a good brand are sound substantive programs (e.g., cases, regulations, reports), sound procedures (e.g., meaningful disclosure of information, rigorous testing of evidence, regular assessment of outcomes), strong capabilities (e.g., deep expertise in economics and law), and a healthy culture (e.g., thoughtfulness, integrity, courage, and a commitment to continuous improvement). 3 For several reasons, explained below, a strong brand is a valuable asset for a regulatory agency.

#### FTC credibility’s key to global cooperation to contain spyware

Ari Schwartz 12, Deputy Director of the Center for Democracy and Technology, “Federal Trade Commission Reauthorization”, Hearing Before the Subcommittee on Interstate Commerce, Trade, and Tourism of the Committee on Commerce, Science, and Transportation United States Senate One Hundred Tenth Congress First Session, Government Printing Office, https://www.govinfo.gov/content/pkg/CHRG-110shrg75970/html/CHRG-110shrg75970.htm

Mr. Schwartz. Thank you very much, Chairman Dorgan. Thank you for holding this public hearing today and inviting CDT to participate.

As more consumers' services move online, consumer protection agencies are facing new challenges. The Federal Trade Commission has played a leadership role to meet these challenges, including overcoming such difficulties as locating the perpetrators of online schemes, keeping up with the rapid pace of technological evolution, and following the increasing financial motivation of Internet fraudsters.

In particular, the FTC has been the lead law enforcement agency in the world in the fight against spyware. Spyware has become one of the most serious threats to the Internet's future. Consumer Reports magazine estimates that consumers will lose $1.7 billion this year to spyware attacks alone. The magazine estimates that almost 1 million consumers simply gave up fixing their spyware-riddled computers and had to throw them away.

The good news is that consumer losses are down dramatically from 2006, when they peaked at $2.6 billion. The main reasons for this decrease in the spyware threat are, first, the improvement in anti-spyware technology; second, the public pressure on companies advertising with nuisance or harmful adware; and, finally, the enforcement of consumer protection law, led by the work of the FTC and some State attorneys general.

The FTC recognized the profound threat posed by the rising tide of spyware early, and actively moved to limit its spread. The Commission has been the leading enforcer against spyware, pursuing 11 cases to fruition in the past two and a half years, including three based, at least in part, on the petitions brought my organization, the Center for Democracy and Technology. CDT has learned, through our own research, that, as consumer fraud increases, the FTC's ability to work internationally becomes more important. Congress passed the SAFE WEB Act late last year to provide the FTC powers to promote international cooperation. The FTC's ability to use this new law, and staff resources that it will need, will be very important to monitor.

#### Spyware norms are solidifying but require strong U.S. leadership---success stops human rights crackdowns that escalate to global war

Marietje Schaake 11-10, International Policy Director at Stanford University’s Cyber Policy Center, Senior Advisor for Tech & Geopolitics at Eurasia Group, President of the Cyberpeace Institute, “We Need a New Global Standard to Curb Intrusive Spyware”, Financial Times, 11/10/2021, Lexis

After more than a decade, democratic governments are finally waking up to the hazards of commercial spyware. Recent media coverage has exposed how authoritarian regimes are using NSO Group’s Pegasus software to spy on journalists and politicians. The EU has now tightened its rules on the export of surveillance technology, and the US Department of Commerce last week determined that Israel-based NSO Group and three other hacking companies were “engaging in activities that are contrary to the national security or foreign policy interests of the United States”. However, these modest steps do not go far enough: what’s needed is a global standard to reign in technologies that violate the rights to privacy, free assembly as well as free expression.

From ~~crippling~~ [devastating] ransomware to questionable neural algorithms which use AI to identify suspicious non-verbal activity, to face and emotion-detecting technologies, there is a proliferation of software applications which conflict with liberal democratic values.

Traditionally, export controls are imposed on products that threaten national security, such as those that could boost the manufacture of nuclear weapons. The EU has recently extended its export regime to include spyware technologies, and added human rights violations as a criterion for potential harm. But since the NSO Group is based outside the EU, it lies outside Brussels’ jurisdiction. Without a wider international agreement, options for curbing these companies are limited.

The absence of global restrictions brings further credibility risks: how can liberal democracies lobby against human rights abuses by authoritarian regimes, when they are in effect permitting the development and marketing of digital weapons?

While restricting exports may help prevent the flow of intrusive technologies from democracies to dictatorships, imports and domestic uses remain unaddressed. The Pegasus Project revealed how, in the heart of the EU, Hungarian prime minister Viktor Orban has deployed commercial surveillance systems to target the few remaining independent media outlets within his own country.

Even some democratic states, such as the Netherlands, are guilty of procuring hacking and surveillance systems, but do not disclose which ones. Undoubtedly, they will claim these are only ever used to track down the most serious criminal and terror suspects. Yet this lends credibility and capital to an exceedingly harmful industry. If democracies are serious about curbing surveillance, they should exercise greater transparency and lead by example.

More than ad hoc measures or restrictions applied to individual companies, the US should partner with the EU and other willing countries to set a new international standard for the use of, and trade in, spyware. This would be a tangible outcome for President Biden’s upcoming Summit for Democracy, a US-led virtual meeting in early December aimed at preventing authoritarianism, fighting corruption, and promoting human rights.

Beyond spyware, a variety of other technologies deserve greater scrutiny and regulation. Illegitimate mass surveillance systems, facial recognition software and tools used for illegal cyber operations are traded across borders to facilitate repression, conflict, and instability. Poor cyber security is now a source of systematic risk which threatens national resilience. Greater co-ordination is necessary to ensure that technologies which are currently legal do not provide the means for widespread rights violations.

Moreover, an international agreement between democratic states against malicious uses of technology will help set multilateral norms. UN human rights experts this week raised the alarm once more about how tech companies serve as modern-day “mercenaries”. “Private actors provide a wide range of military and security services in cyber space, including data collection, intelligence and surveillance,” they warned.

In the future, a licensing requirement should be the default for tech companies that contravene the human rights standard of democratic states. This would ensure better controls of end use and exports. Regulation would also allow for mapping of how software is being deployed, and enable greater transparency. Equally, companies should strengthen their own risk-management. The very credibility of democracies is at stake when tech companies can undermine global security unhindered.

#### FTC leadership on blockchain establishes a model for other countries to apply to AI and machine learning

Bojana Bellamy 19, President of Hunton Andrews Kurth LLP’s Center for Information Policy Leadership; Terry Calvani with the Freshfields Law Firm, Former Commissioner and acting Chairman at the Federal Trade Commission; Eduardo Perez Motta, Senior Partner at the SIA Law and Economics Firm and Former President of the Mexican Competition Authority, COFECE, and, also, a Former Chair of the International Competition Network, Rod Sims, Chairman of the Australian Competition and Consumer Commission; Andy Wyckoff, Director of the OECD’s Directorate for Science, Technology, and Innovation, “The FTC’s Role in a Changing World,” FTC, 3/26/2019, https://www.ftc.gov/news-events/events-calendar/ftc-hearing-11-competition-consumer-protection-21st-century

And I think it is important that we, in Europe, do not believe that our way is the only way and I think we must be also humble to take on some of the US best examples. But then the US also, we've got expectations, the US federal privacy debate is going to sort of stir up and come up with perhaps some new ways of dealing with some of these issues. So I think building on that respect for differences, but also what brings us together is really a good way forward. I talked about some of the joint policy initiatives. I really think this would be a great way to bring us together. Think about facial recognition or blockchain or machine learning or Internet of Things, drones, all of that would be amazing.

For example, a case study to bring us to work on something which is proactive, which isn't kind of reactive, confrontational, adversarial, but actually we're creating something better for the world ahead. Of course, cooperation and enforcement is important and I think, as some in Europe, do not believe any of the complaints end up in the right hands. I think that's where the FTC can also help and ensure that the EU-led complaints that are sent to the US actually get heard properly and get enforced potentially or there is a feedback loop back. I think that would be helpful as well.

And then the final point I would like to add, which is something around -- more around, as Eduardo has said, about the leadership role of FTC. I really think actually FTC has got something to teach other regulators just because of its breadth and sort of experience in being a tough enforcer. Those of you who were in privacy for many years used to remember -- people used to say -- Europeans used to say, if only we had the FTC enforcement in the European law that would be the best combination.

So we always looked up to FTC as to how they enforce the law, how they manage, and I think that's something that FTC can really take on a great role, particularly with European regulators, who now have got similar enforcement powers. But, frankly, and I apologize, I know it's going to be online, they don't have the know-how, how to actually use these powers in the best way.

We've seen some Draconian enforcement in the EU without proper due diligence, without proper process, without proper transparency and proper lessons learned why that fine has been applied in this way and why it hasn't been applied that way. And I think this is something, Rod, I think you slightly talked about that. That is where I think FTC can help also, frankly, technically bring the other regulators a little bit up to higher level simply because of its standing and experience in enforcement.

MR. TRITELL: Thank you. I think we have a wonderful example how your questions can really stimulate the panel. (Laughter.)

MR. TRITELL: So feel free, please, to find those cards and send them up here and enhance the show.

So we're talking about conversions and joint projects of an exciting nature. One. way to potentially move those forward is through the vehicles of international organizations. Our hearings have touched many times on the OECD, ICN, ICPEN, we have UNCTAD, regional organizations like APAC, various privacy groups. There's a big menu of these venues, but resources are finite.

Let me ask where in surveying that spectrum do you think the. FTC should allocate, its resources and what should they seek to accomplish in some of these important international fora? Rod?

MR. SIMS: Well, I wouldn't mind just -- I'll answer that question, but it's just backing up to what --

MR. TRITELL: Or come back to any other point, please.

MR. SIMS: Well, what Bojana just said, the -- we notice this quite a lot in our consumer work because we are a consumer and a competition regulator, and because most of our staff do both competition and consumer work, we don't separate them out. I think we're fairly unique in that. But it just strengthens that process, that know-how in competition, which you've got to have to be in the game.

When you translate that into consumer work, it's just so immensely powerful. I think, on average, we would take larger companies to court for breaches of consumer law than we do for competition law. We've recently taken Ford, Hines, Apple to court for breaches of our consumer law. We've got large fines.

Perhaps the biggest development in Australia is we've just convinced the government, under the heading of advocacy, to align the penalties for breaches of competition law and consumer law. So now the penalties will be the same. Previously, the. penalties were much lower for consumer law, which is a terrible thing.

The harm you can do through misleading consumers is visibly as bad as it can be from cartels. There is just no doubt about that. I can give you numerous examples. So I just want to back up that point, that the strength of being the regulator that does a number of things is important. I guess it leads into my point that I think ICPEN is the organization that perhaps needs that extra bit of work, whether it's capacity building with new jurisdictions, whether it's more coordinated action amongst the members, whether it's common approaches and practices, but really just raising up the profile of consumer work.

I have to say I continually get irritated when I'm at international meetings, you get the sense that competition work is held to be in some way superior to consumer work. That is complete, rubbish. They are. equally important. If you want your market economy to work for the benefit of consumers, you need effective competition law and you need effective consumer law. They can both equally do great harm.

And so I just think we've got to raise it up.

MR. TRITELL: I think you have a sub silentio round of applause in the room there, Rod. (Laughter.)

MR. TRITELL: Not to mention from Bojana who mentioned privacy --

MS. BELLAMY: And privacy as well. So we --

MR. TRITELL: -- which we think of as part of our consumer protection.

MR. SIMS: I can't talk about privacy, but --

MS. BELLAMY: The three-headed Medusa. It's the three heads, right?

MR. SIMS: But I would happily push it to privacy, absolutely. Well, the same point applies and it was Bojana's point that got me in there. The same point applies.

MR. TRITELL: Would anybody else like to come in on where, we should focus our efforts in the international organizations.

Eduardo, you talked about maybe we. ought to be going to the next step. So if you'd like to elaborate on that.

MR. MOTTA: Well, yes. I could, in a very general way, elaborate a little bit more on that. Let me first -- let me start with the main features of the ICN. The main features of the ICN, in my view, is that it's a soft law organization, it's a consensus organization. It's a consensus organization. That goes very much in line with what happens in the WTO. It could be risky, but that's the reality.

It's a beautiful system, organization, it's a beautiful network. It uses, very efficiently, the communication technologies and so on. And the main products that are created by the ICN are this best international practices standards, practical guides and toolkits, and they organize workshops for members. I mean, that's in a very general and a schematic way.

Well, the first question is that has been, in my view, the ICN has been one of the most efficient networks I have ever seen, international networks that I have ever seen. When I compare how the ICN was created and what was the situation in the context of the WTO discussion on trade and competition, which was one of the elements that provoked the creation of the ICN, and if you see that, that was 2001 more or less -- I think it was 2001 with 15 members in the ICN.

Today, they have more than 114 members. In 2001, the WTO was working generally well. We were in the middle -- in the start of a new round, the Doha Round. At that time, the ICN was created and the ICN has been much more effective, frankly, than organizations like the WTO.

But my point here is that the international context in which we are living is highly complicated. I mean, there are a lot of nationalistic pressures, national champions, pressure from different countries, developed and developing countries at the same time. That has become, I would say, a more systemic, risky problem for markets. And that doesn't mean -- I mean, the most important elements is how to show that markets in a competition scenery is one of the most important instruments you have in order to create not only efficiency in your economy, but also equality of opportunities for economic players, for economic agents, but also at the same time a quality of opportunities for consumers.

So in that situation is where I think it is needed to give an additional impulse to an international organization like -- or an international network like the. ICN. And maybe -- I mean, I'm basically suggesting to reflect on the possibility to create a new organization, a new international organization of -- this could be consumer and competition agencies. And that should be a more -- in my view, should be a more formal organization in order to generate an international pressure for the evaluation and valuation of the importance of markets in that context, in the context of competition.

So to think about the possibility of having a formal and permanent secretariat, that makes a difference because today what you have is the members are the secretariat itself. So it's difficult to differentiate what a jurisdiction is saying or what the organization is saying because the word is the same. So in my view, you need someone that is more independent than the agencies in order to advocate for competition in different jurisdictions.

It has to be a product, in my view, from an international agreement with some cooperation mechanism, but also some monetary mechanism. That's the most -- I mean, this is a difficult task. I'm not saying that it is not. It's a real challenge. But, frankly, what we. are living internationally is a challenge, itself today.

Sorry for taking --

MR. TRITELL: No, no, a lot of food for our continued thought. Andy, from the OECD perspective, what role can you see from the OECD and how can the FTC effectively engage within the OECD, for example, in the consumer committee or in the privacy activities of the organization?

MR. WYCKOFf: I'll touch on that in just one second. Eduardo provokes me because my part of the OECD has done a lot on telecom dereg, particularly in Mexico. Here's maybe an example we can begin to think about because we. did something in 2012. It helped inform the decisions in the regulatory reform that went on in creating an independent regulator even then. We followed up in 2017 and looked at implementation. What really went on? And that's now become a lessons learned that the rest of the region now is beginning to look at. So I think there's a model for what he's saying.

The FTC -- I speak under the Chair here of my Consumer Policy Committee, Hugh Stevenson, already plays a huge leadership role at the OECD. There's two areas if I had to put on my Christmas list from FTC, where I would like to see them push. One is on this evidence base that many people have talked about. We love statistics at the OECD and comparative --

MS. BELLAMY: Data.

MR. WYCKOFF: Data. Comparative indicators, and can we begin to look at things as we get, for example, like data breach laws from around the world. Can we begin to compare these and get some -- it may not be apples to apples, but at least fruit to fruit to look at.

The other is really leadership work that happened in 2010 again led by the FTC on our consumer policy toolkit. I think they began to open the thinking on both behavioral economics and the informational economics, which I think is important. And following up on that -- and we've begun to do some work on consumer attitudes towards trust. It goes to what people are saying. It may not be such big differences as people think, but also doing some more experimental work, such as on personalized pricing, which we're beginning to see proliferate in many different areas. These are areas where I think there's a lot of international interest and where the FTC could play a leading role.

MR. TRITELL: Well, leading right into our next topic, which is the FTC’s leadership role, I think that there was a point in time when the FTC had so much longer and deeper experience in some of these areas that it was a default and natural leader. Now, we live in a very multipolar world in all of these disciplines, and it prompts me to wonder what does it mean to be a leader in this environment. Is it important for the FTC to be perceived as and to be a thought and policy leader? If so, how can the FTC exercise effective leadership internationally, including on emerging issues and with agencies that operate in very different environments?

So let me just run down the table for anybody who would like to offer thoughts on this study with Bojana.

MS. BELLAMY: Yeah, sure. So I’ve got a very long wish list, which I will submit in writing probably to my friends at FTC. But, Andy, to continue where you kind of stopped, I would really love the FTC -- I think there is some leadership vacuum first, let me say, in the privacy regulatory community at the moment, and I think FTC would be very well placed to fill that vacuum, together with some other across the world are kind of wanting to seek that new leadership role.

So one area where I would like to see some work would be in the area of fairness, fair processing, fairness and unfairness, you know. In the majority of data privacy laws we have requirements with fair processing, yet nobody knows what it means. Yet here, FTC statute and work is based on unfair trade practices. There is unfairness methodology that FTC can teach us a lot in this world of AI and machine learning as to what creates harms to consumers, what and how do we measure that and how we, as organizations, think what is fair and what is not fair.

I think this will be a great opportunity not just for bilateral, multilateral regulatory corporation, but together with the organizations who are implementing this in the practice as well. FTC anonymization test, again for those of you in the privacy geek community is still standing the test of time where frankly everybody else says there’s no such things as anonymous data because everything about me doesn’t matter. If you know who I am, but you know everything about me, that’s good enough to identify me. Well, I think FTC has done some really great thinking in the past and we need to revive that leadership and kind of, again, convergence with some others.

Risk-based approach to regulation and enforcement and investigation is something that I think FTC again is best placed to teach the rest of the world. We live in a world where data is everywhere. Every company, to your point, is today a data company, Rod. I mean, I keep hearing this from manufacturing companies to financial companies who say we are data and tech companies today. So in that world, we really need different ways of approaching that.

And then a final point, I would like to say that this whole topic of incentivizing what good looks like and rewarding good behaviors, I think there is something about that that we need to exploit more. I’ve been head of privacy for a huge multinational company for 12 years, and trust me, when we got good praises from a regulator, that gave me a bigger budget, that gave me more standing internally, that got me to speak to the CEO and the board much quicker than any penalty and any fine did.

I think realizing what motivates companies and motivates people to behave well and be good corporate citizens in this new interconnected world, I think there is work to be done there. And I do remember FTC consent decrees that I have read as I was a practitioner, every single consent decree said to me, here is how they reward companies who actually do something while in privacy. That’s what DOJ said. Data -- I think somebody mentioned before, that’s what the SEC does, that’s what US sentencing guidelines do.

#### There’s a narrow window to establish international norms for safe development---the FTC’s key

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The European Union and the United States have not always agreed on the regulation of digital technologies, but closer cooperation is needed to prevent the proliferation of harmful artificial intelligence and to help shape global AI norms that support democratic values, equity, and human rights. The recent launch of the EU-US Trade and Technology Council, together with the new EU AI regulatory proposal, provide a critical window of opportunity for deeper engagement.

Many assume that the European Union is the world’s technology watchdog, while in contrast the United States is an unruly digital Wild West. Media, policymakers, and the general public have been quick to fit the long-awaited EU regulatory proposal on artificial intelligence (the Artificial Intelligence Act, or AIA) into this bifurcated framing. Journalists have suggested that the AIA may “widen the regulatory gulf” between the EU and the US when it comes to reining in the riskiest AI applications. Researchers have called it “a direct challenge to Silicon Valley’s common view that law should leave emerging technology alone.”

However, this framing of a “gulf” between the EU and US on AI regulations is both overstated and counterproductive. The under-regulated AI industry is hurting Americans and Europeans alike, and AI’s risks, like algorithmic amplification of polarization and extremism, cut across borders. Not only do the allies’ perspectives align on various issues, but they are actively courting further cooperation on common challenges.

In mid-June, US President Joe Biden and European Commission President Ursula von der Leyen launched an EU-US Trade and Technology Council (TTC) at the US-EU Summit in Brussels. The TTC comprises ten working groups, with issues including standards cooperation for emerging technologies, data governance and technology platforms, and the threat posed to human rights by technology’s misuse. It remains to be seen, however, how much either ally will invest in this Council or how effective the TTC will be at advancing cooperation on critical AI issues going forward.

The release of the AIA, and the more recent launch of the TTC, present critical and time-sensitive opportunities for engagement. Failing to take advantage of this opportunity for transatlantic cooperation on AI would be a mistake with wide-ranging consequences for both AI and the state of democracy.

Divergent Approaches?

The EU’s proposed AI regulation differs from previous US federal government attempts by establishing oversight mechanisms to mitigate the risks of AI systems. The AIA views some applications of AI, such as AI-based social scoring, as presenting unacceptable risks that must be banned outright because they pose a clear threat to people’s safety and rights. It considers other applications, like using AI to evaluate eligibility for public services or a job, high risk because of their impact on people’s livelihoods and the potential for bias. High risk AI systems are subject to significant obligations before they can be placed on the market.

In contrast, a 2020 memo from the White House Office of Management and Budget on Guidance for Regulation of AI highlights a distrust of regulation that defined the Trump Administration’s approach to AI policy. The memo states, “Federal agencies must avoid regulatory or non-regulatory actions that needlessly hamper AI innovation and growth.” The memo also suggests that AI’s risks should be considered alongside potential benefits.

However, there has been a shift in the US AI policy environment under the Biden Administration, with louder calls for accountability and regulation. Although Biden has yet to make AI a priority, there is greater recognition of the risks the technology can pose and signals that the administration will take AI policy seriously. Vice President Harris has previously endorsed a bill to establish federal AI policy and has criticized the ways that AI can perpetuate bias. An Executive Order signed on Biden’s first day in office established an Equitable Data Working Group and the appointment of Dr. Alondra Nelson to lead the Office of Science and Technology Policy promises a commitment to pursue equitable AI.

The US does already have some protections in place against high-risk AI systems. Real-time biometric surveillance by law enforcement, prohibited in the AIA with some exceptions, has already been banned by numerous cities in the US. A statement of intent issued by the Federal Trade Commission the same week as the AIA release explains that AI products are not outside the scope of its consumer protection laws. Companies will need to adhere to FTC guidelines to ensure AI systems are transparent, explainable, fair, and empirically sound.

In fact, some have asserted that the FTC’s notice has more teeth than the AIA in the near-term. For example, the FTC has committed to holding companies accountable for preventing the proliferation of racially-biased or unreliable algorithms. Meanwhile, it may take years for individual EU member states to adopt the AIA, lessening the immediate impact on Big Tech compared to what some had expected. Under the AIA, most AI technology will not be subject to any regulation and while producers of high-risk AI systems face regulatory requirements it appears that assessments will not be made available to the public. In short, the EU approach may be less of a “burden” than some feared, while the US policy landscape may be less permissive than it may first appear.

More important than the US’s and EU’s willingness to establish regulatory frameworks is the significant overlap in what their frameworks intend to accomplish. The US and EU aim for not only the development of AI, but the development of trustworthy AI. Both have adopted the OECD AI Principles, which provide common benchmarks on issues including sustainable development, human rights, democratic values and diversity, and accountability, among others. The US’s and EU’s support of the Principles has helped to establish a shared language for global AI norms and governance.

Cooperation as a Strategic Goal

Greater transatlantic cooperation on AI is a stated goal of both the US and the EU. A European Commission program for a transatlantic agenda from December 2020 first proposed the EU-US Trade and Technology Council. The Council was an opportunity for allies to work together on critical technologies and to encourage the establishment of digital governance that promotes shared values of human dignity, individual rights, and democratic principles. The agenda described this as “a once-in-a-generation opportunity.”

The US has also highlighted the importance of international cooperation on AI, most recently by accepting the EU’s invitation to launch the TTC. The US has launched the National AI Initiative which intends to support further opportunities for cooperation with strategic allies on research and development, assessment, and resources for trustworthy AI systems. “International Cooperation” is also one of the six strategic pillars outlined on the newly re-launched AI.gov website detailing US AI priorities.

Transatlantic cooperation is widely supported by US industry stakeholders, in part to promote regulatory compatibility. For example, the TTC was endorsed in a blog post by Karan Bhatia, Google’s Vice President of Government Affairs & Public Policy, and in a statement of support from the Information Technology Industry Council. The final report from the National Security Commission on Artificial Intelligence (NSCAI), a multistakeholder group including numerous AI industry leaders, also has a chapter on creating a favorable international technology order. The NSCAI advises the US to establish an International Science and Technology Strategy and argues that “like-minded countries must work together to advance an international rules-based order, protect free and open societies, and unleash economic innovation.”

Given the allies’ many common goals, the AIA should not be seen as a challenge to the US. Instead, the proposal is an important first step and an opportunity to prevent AI uses that violate human safety and fundamental rights. The US and EU can now work together to further clarify and prevent high-risk AI uses, and establish shared AI standards. While the recently-launched TTC provides a valuable platform for this work and will support regulatory policy cooperation and convergence, a handful of working groups only partially focused on AI may struggle to meet these objectives. Additional pathways that deserve consideration include increasing capacity for information sharing and pooling resources for larger scale research on critical topics.

Why Now?

As governments scrambled to control the spread of COVID-19, many turned to AI technologies for help – to better understand the virus, track outbreaks, and help provide care. In some cases, this has justified the implementation of pervasive surveillance systems, which are now being used for troubling ends. As just one example, a facial recognition camera network in Moscow, originally implemented to help enforce quarantine restrictions, was later used to detain dozens of protestors voicing opposition to President Vladimir Putin. AI-enabled surveillance systems have proliferated across the globe, and the scale and scope of “digital authoritarianism” has increased for years, amplified by the use of AI to automate censorship and surveillance systems.

While the United States has worked to develop standards and principles for the use of AI around the world and sought to protect human rights and fundamental freedoms, these actions have failed to stop the misuse of AI. Concrete cooperation with the European Union, which has been lacking, could create a stronger alliance to counter the rising wave of digital authoritarianism. The launch of the TTC shows that President Joe Biden understands this dynamic. He recently said the “transatlantic alliance is back,” and explicitly highlighted the need to shape the rules that will govern the advance of AI, among other consequential technologies.

Importantly, greater transatlantic cooperation on AI is not just in the self-interest of the US and the EU; it can benefit democracies and human rights around the world. The alliance will be even stronger if it looks outward and facilitates international, inclusive dialogues, including with countries from the Global South. Fostering an equitable and responsible digital future requires incorporating critical, yet underrepresented, voices into AI governance discussions and decision-making.

Forgoing greater cooperation on AI between the US and EU would be a shortsighted mistake. There is a narrow window of opportunity to prevent the proliferation of harmful AI and to help shape global AI norms. The time for transatlantic cooperation on AI is now.

#### Extinction

Karina Vold 21, Philosopher of Cognitive Science and Artificial Intelligence & Assistant Professor at the University of Toronto's Institute for the History and Philosophy of Science and Technology, & Daniel R. Harris, Retired Lawyer and Foreign Service Officer at the US Department of State, “How Does Artificial Intelligence Pose an Existential Risk?,” Oxford Handbook of Digital Ethics, Ed. C. Veliz., pp 1-34

4.1 AI Race Dynamics: Corner-cutting Safety

An AI race between powerful actors could have an adverse effect on AI safety, a subfield aimed at finding technical solutions to building “advanced AI systems that are safe and beneficial” (Dafoe, 2018, 25; Cave & Ó hÉigeartaigh, 2018; Bostrom, 2017; Armstrong et al., 2016; Bostrom, 2014). Dafoe (2018, 43), for example, argues that it is plausible that such a race would provide strong incentives for researchers to trade-off safety in order to increase the chances of gaining a relative advantage over a competitor.21 In Bostrom’s (2017) view, competitive races would disincentivize two options for a frontrunner: (a) slowing down or pausing the development of an AI system and (b) implementing safety-related performance handicapping. Both, he argues, have worrying consequences for AI safety.

(a) Bostrom (2017, 5) considers a case in which a solution to the control problem (C1) is dependent upon the components of an AI system to which it will be applied, such that it is only possible to invent or install a necessary control mechanism after the system has been developed to a significantly high degree. He contends that, in situations like these, it is vital that a team is able to pause further development until the required safety work can be performed (ibid). Yet, if implementing these controls requires a substantial amount of additional time and resources, then in a tight competitive race dynamic, any team that decides to initiate this safety work would likely surrender its lead to a competitor who forgoes doing so (ibid). If competitors don’t reach an agreement on safety standards, then it is possible that a “risk-race to the bottom” could arise, driving each team to take increasing risks by investing minimally in safety (Bostrom, 2014, 247).

(b) Bostrom (2017, 5-6) also considers possible scenarios in which the “mechanisms needed to make an AI safe reduces the AI’s effectiveness”. These include cases in which a safe AI would run at a considerably slower speed than an unsafe one, or those in which implementing a safety mechanism necessitates the curtailing of an AI’s capabilities (ibid). If the AI race were to confer large strategic and economic benefits to frontrunners, then teams would be disincentivized from implementing these sorts of safety mechanisms. The same, however, does not necessarily hold true of less competitive race dynamics; that is, ones in which a competitor has a significant lead over others (ibid). Under these conditions, it is conceivable that there could be enough of a time advantage that frontrunners could unilaterally apply performance handicapping safety measures without relinquishing their lead (ibid).

It is relatively uncontroversial to suggest that reducing investment in AI safety could lead to a host of associated dangers. Improper safety precautions could produce all kinds of unintended harms from misstated objectives or from specification gaming, for example. They could also lead to a higher prevalence of AI system vulnerabilities which are intentionally exploited by malicious actors for destructive ends, as in the case of adversarial examples (see Brundage et al., 2018). But does AI safety corner-cutting reach the threshold of an Xrisk? Certainly not directly, but there are at least some circumstances under which it would do so indirectly. Recall that Chalmers (2010) argues there could be defeaters that obstruct the self-amplifying capabilities of an advanced AI, which could in turn forestall the occurrence of an intelligence explosion. Scenario (a) above made the case that a competitive AI race would disincentivize researchers from investing in developing safety precautions aimed at preventing an intelligence explosion (e.g., motivational defeaters). Thus, in cases in which an AI race is centred on the development of artificial general intelligence, a seed AI with the capacity to self-improve, or even an advanced narrow AI (as per §3.1), a competitive race dynamic could pose an indirect Xrisk insofar as it contributes to a set of conditions that elevate the risk of a control problem occurring (Bostrom, 2014, 246; 2017, 5).

4.2 AI Race Dynamics: Conflict Between AI Competitors

The mere narrative of an AI race could also, under certain conditions, increase the risk of military conflict between competing groups. Cave & Ó hÉigeartaigh (2018) argue that AI race narratives which frame the future trajectory of AI development in terms of technological advantage could “increase the risk of competition in AI causing real conflict (overt or covert)”. The militarized language typical of race dynamics may encourage competitors to view each other “as threats or even enemies” (ibid, 3).22 If a government believes that an adversary is pursuing a strategic advantage in AI that could result in their technological dominance, then this alone could provide a motivating reason to use aggression against the adversary (ibid; Bostrom, 2014). An AI race narrative could thus lead to crisis escalation between states. However, the resulting conflict, should it arise, need not directly involve AI systems. And it's an open question whether said conflict would meet the Xrisk threshold. Under conditions where it does (perhaps nuclear war), the contributions of AI as a technology would at best be indirect.

4.3 Global Disruption: Destabilization of Nuclear Deterrents

Another type of crisis escalation associated with AI is the potential destabilizing impact the technology could have on global strategic stability;23 in particular, its capacity to destabilize nuclear deterrence strategies (Giest & Lohn, 2018; Rickli, 2019; Sauer, 2019; Groll, 2018; Zwetsloot & Dafoe, 2019). In general, deterrence relies both on states possessing secure second-strike capabilities (Zwetsloot & Dafoe, 2019) and, at the same time, on a state's inability to locate, with certainty, an adversary’s nuclear second-strike forces (Rickli, 2019). This could change, however, with advances in AI (ibid). For example, AI-enabled surveillance and reconnaissance systems, unmanned underwater vehicles, and data analysis could allow a state to both closely track and destroy an adversary’s previously hidden nuclear-powered ballistic missile submarines (Zwetsloot & Dafoe, 2019). If their second-strike nuclear capabilities were to become vulnerable to a first strike, then a pre- emptive nuclear strike would, in theory, become a viable strategy under certain scenarios (Giest & Lohn, 2018).

In Zwetsloot & Dafoe’s (2019) view, “the fear that nuclear systems could be insecure would, in turn, create pressures for states— including defensively motivated ones—to pre-emptively escalate during a crisis”. What is perhaps most alarming is that the aforementioned AI systems need not actually exist to have a destabilizing impact on nuclear deterrence (Rickli, 2019; Groll, 2018; Giest & Lohn, 2018). As Rickli (2019, 95) points out, “[b]y its very nature, nuclear deterrence is highly psychological and relies on the perception of the adversary’s capabilities and intentions”. Thus, the “simple misperception of the adversary’s AI capabilities is destabilizing in itself” (ibid). This potential for AI to destabilize nuclear deterrence represents yet another kind of indirect global catastrophic, and perhaps even existential, risk insofar as the destabilization could contribute to nuclear conflict escalation.

5. Weaponization of AI

Much like the more recent set of growing concerns around an AI arms race, there have also been growing concerns around the weaponization of AI. We use “weaponization” to encompass many possible scenarios, from malicious actors or a malicious AI itself, to the use of fully autonomous lethal weapons. And we will discuss each of these possibilities in turn. In §5.1 we discuss malicious actors and in §5.2 we discuss lethal autonomous weapons. We have combined this diverse range of scenarios for two reasons. First, while the previous Xrisk scenarios discussed (CPAX and an AI race) could emerge without malicious intentions from anyone involved (e.g., engineers or governments), the scenarios we discuss here do for the most part assume some kind of malicious intent on the part of some actor. They are what Zwetsloot & Dafoe (2019,) call a misuse risk. Second, the threats we discuss here are not particularly unique to AI, unlike those in previous sections. The control problem, for example, is distinctive of AI as a technology, in the sense that the problem did not exist before we began building intelligent systems. On the other hand, many technologies can be weaponized. In this respect, AI is no different. It is because AI is potentially so powerful that its misuse in a complex and high impact environment, such as warfare, could pose an Xrisk.

5.1 Malicious Actors

In discussing CPAX, we focused on accidental risk scenarios—where no one involved wants to bring about harm, but the mere act of building an advanced AI system creates an Xrisk. But AI could also be deliberately misused. These can include things like exploiting software vulnerabilities, for example, through automated hacking or adversarial examples; generating political discord or misinformation with synthetic media; or initiating physical attacks using drones or automated weapons (see Brundage et al., 2018). For these scenarios to reach the threshold of Xrisk (in terms of ‘scope’), however, a beyond catastrophic amount of damage would have to be done. Perhaps one instructs an AI system to suck up all the oxygen in the air, to launch all the nuclear weapons in a nation’s arsenal, or to invent a deadly airborne biological virus. Or perhaps a lone actor is able to use AI to hack critical infrastructures, including some that manage large-scale projects, such as the satellites that orbit Earth. It does not take much creativity to drum up a scenario in which an AI system, if put in the wrong hands, could pose an Xrisk. But the Xrisk posed by AI in these cases is likely to be indirect—where AI is just one link in the causal chain, perhaps even a distal one. This involvement of malicious actors is one of the more common concerns around the weaponization of AI. Automated systems that have war- fighting capacities or that are in anyway linked to nuclear missile systems could become likely targets of malicious actors aiming to cause widespread harm. This threat is serious, but the theoretical nature of the threat is straightforward relative to those posed in CPAX, for example.

One further novel outcome of AI would be if the system itself malfunctions. Any technology can malfunction, and in the case of an AI system that had control over real-world weapons systems the consequences of a malfunction could be severe (see Robillard, this volume). We’ll discuss this potential scenario a bit more in the next section. A final related possibility here would be for the AI to itself turn malicious. This would be unlike any other technology in the past. But since AI is a kind of intelligent agent, there is this possibility. Cotton- Barratt et al. (2020), for example, describe a hypothetical scenario in which an intelligence explosion produces a powerful AI that wipes out human beings in order to pre-empt any interference with its own objectives. They describe this as a direct Xrisk (by contrast, we described CPAX scenarios as indirect), presumably because they describe the AI as deliberately wiping out humanity. However, if the system has agency in a meaningful sense, such that it is making these kinds of deliberate malicious decisions, then this seems to assume it has something akin to consciousness or strong intentionality. In general we are far from developing anything like artificial consciousness and this is not to say that these scenarios should be dismissed altogether, but many experts agree that there are serious challenges confronting the possibility of AI possessing these cognitive capacities (e.g., Searle, 1980; Koch and Tonini, 2017; Koch, 2019; Dehaene et al., 2017).

5.2 Lethal Autonomous Weapons

One other form of weaponization of AI that is sometimes discussed as a potential source of Xrisk are lethal autonomous weapons systems (LAWS). LAWS include systems that can locate, select, and engage targets without any human intervention (Roff, 2014; Russell, 2015; Robillard, this volume). Much of the debate around the ethics of LAWS has focused on whether their use would violate human dignity (Lim, 2019; Rosert & Sauer, 2019; Sharkey, 2019), whether they could leave critical responsibility gaps in warfare (Sparrow, 2007; Robillard, this volume), or whether they could undermine the principles of just war theory, such as noncombatant immunity (Roff, 2014), for example. These concerns, among others, have led many to call for a ban on their use (FLI ,2017). These concerns are certainly very serious and more near term (as some LAWS already exist) than the speculative scenarios discussed in CPAX. But do LAWS really present an Xrisk? It seems that if they do, they do so indirectly. Consider two possible scenarios.

(a) One concern around LAWS is that they will ease the cost of engaging in war, making it more likely that tensions between rival states rise to military engagement. In this case, LAWS would be used as an instrument to carry out the ends of some malicious actor. This is because, for now, humans continue to play a significant role in directing the behaviour of LAWS, though it is likely that we will see a steady increase in the autonomy of future systems (Brundage et al., 2018). Now, it could be that this kind of warfare leads to Xrisks, but this would require a causal chain that includes political disruption, perhaps failing states, and widespread mass murder. None of these scenarios are impossible, of course, and they present serious risks. But we have tried to focus this chapter on Xrisks that are novel to AI as a technology and, even though we view the risks of LAWS as extremely important, they ultimately present similar kinds of risks as nuclear weapons do. To the extent that LAWS have a destabilizing impact on norms and practices in warfare, for example, we think that scenarios similar to those discussed in §4.3 are possible—LAWS might escalate an ongoing crisis, or moreover, the mere perception that an adversary has LAWS might escalate a crisis.

(b) A second scenario, described by Geoffrey Hinton, is that killer drones, equipped with explosives and deep learning neural net technology, could (somehow) learn to function independently of their human controllers (Robinson, 2016), and the system could then go on a rampage and destroy humanity. The bracketed “somehow” here is a critical piece of the story. Perhaps the control system has been hacked, in which case we are back to the malicious actor scenario described in §5.1. Or perhaps there is a malfunction, of the sort also described in §5.1. In this latter case, the malfunction could manifest in the form of a “hard takeoff” in which the system undergoes rapid recursive self-improvement (unintended by the designers) and then develops goals that are inimical to human interests. In such a case, we would be at the start of an intelligence explosion and would confront the kind of Xrisk already characterized by CPAX (§3). Our only point here is that upon closer examination, it's hard to see how this scenario looks distinct from ones previously discussed. Hence, the weaponization of AI can pose an indirect Xrisk in several different ways. In general, the more control an automated system has over weaponized systems that can cause real-world destruction, the greater risk there is of that system becoming a target for attack by malicious actors or of there being greater harm due to any accidental system malfunction.

6. Conclusion

Humanity is facing an increasing number of existential threats, many of which are of our own creation. Thankfully, there are also an increasing number of scholars, from a wide range of fields, studying the nature of these risks and strategizing how to mitigate them. But the field of Xrisk studies is still relatively young. There are significant debates being had over how to define the concept of Xrisk, how to understand its sources, and what methodologies should be used to assess these risks. When it comes to Xrisks from AI, these debates continue. Early concerns around AI Xrisks focused on the possibility of an intelligence explosion and the subsequent pathway to a scenario in which a powerful superintelligent AI has misaligned objectives from humanity. These concerns have not gone away, but they have evolved over time. This chapter has provided an up- to-date critical survey of these arguments, both old and new, looking at different foreseeable pathways towards AI Xrisk, possible global disruptions resulting from the emergence of an AI race dynamic between nations, and the weaponization of AI. In particular, we have tried to make the structures of each of these concerns more explicit, such that readers can begin to critically engage with them.

#### The plan solves:

#### 1. Updating---prohibiting violations in the infrastructure level establishes a collaborative relationship between blockchain and antitrust that infuses technological principles into legal enforcement

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1.2 Enforcement

1.2.1 Not this...

Enforcement is the second pillar of a collaborative approach between law and tech, antitrust and blockchain. I realize that this may seem counterintuitive; enforcement is, by definition, confrontational. In reality, distinct types of enforcement can lead to varying degrees of confrontation: some harm the entire blockchain, while others target the sole perpetrators of illegal practices. One should avoid the former, as it would reduce blockchain’s usefulness and thus deprive policymakers and regulators of an important ally. It is in the interests of both communities to encourage the latter.

I concluded the first part of this book by underlining that making law and tech work toward the same objective implied bearing with some assaults by each on the other. This means that blockchain communities should not only tolerate antitrust sanctions, but also facilitate them, because they ultimately lead to further decentralization. It also means that antitrust agencies and courts should direct their enforcement activities in a specific way. Overall, they should seek to preserve blockchain. This will be challenging, as agencies generally conduct their enforcement activities one case after the other, without such a long-term objective. That being said, agencies could still achieve the overall goal of enabling blockchain technology to flourish while ensuring case-by-case enforcement.

For that, agencies should avoid enforcement activities against practices that directly arise from the intrinsic characteristics of a blockchain. For example, public permissionless blockchains distribute information throughout the marketplace, including the number of transactions implemented by specific users, the fees being paid and so on. This transparency could lead to antitrust concerns, especially when it comes to tacit collusion.14 Nevertheless, because this essential feature makes markets more fluid and mitigates information asymmetry,15 enforcement activities should not be directed at it.

The same goes for the opacity that blockchains create. As we have seen together, the identity of a blockchain’s participants and the content of their transactions are protected by encryption. Yet one should not consider this a relevant element in European competition law for presuming the intention to collude (moral component), for systematically making cartelization on block- chain a restriction “by object” rather than “by effect,” or for easing the burden of proof on antitrust agencies. Doing so would deter legal uses of blockchain.

More generally, it is important to underline that all blockchain participants agree to the same set of rules. That should not be seen as an illegal agreement between them, even though it affects their economic behavior. Agreeing to the same rules is, in fact, necessary for blockchain’s survival, as it creates consistency in the blockchain ledger in the absence of central coordination. It solves the Byzantine Generals Problem, according to which a central power is always needed to coordinate actions and maximize outcomes. That applies to forks, which should only rarely be seen as illegal (as I discussed in Chapter 8), because they create checks and balances within each blockchain. Let me reiterate that without consensus regarding the rules and their modification, the whole system would collapse, as the ledger integrity could not be maintained. All practices engaged by the blockchain nucleus to ensure survival, such as their forks and modifications of the core client, should thus be presumptively legal as far as antitrust enforcement is concerned.

1.2.2 ...but that!

I recommend that antitrust agencies focus their enforcement activities on practices that affect the “real space”, and on practices that defeat blockchain’s purpose.

As I discussed in Chapters 9 and 11, the first type of practice covers the use of blockchains to support firms’ efforts to collude or monopolize markets. These practices have a strong and direct impact on consumers. Detecting this type of behavior will require proactive actions by antitrust agencies. If they engage in such actions, enforcement in the field will increase consumer welfare.

The second category concerns practices that centralize blockchain ecosystems artificially. More specifically, agencies should target practices that centralize the infrastructure level of a blockchain. As I have explained, that level has a critical influence on the decentralization of other levels. Prohibiting artificial forms of centralization at that layer will free most of the ecosystem from coercive forms of power. In doing so, it will make blockchain a more potent ally to antitrust law. Furthermore, this type of enforcement will prove increasingly important over time. If blockchain adoption continues to increase, it could very well become a key infrastructure for the world economy. At that point in time, the artificial centralization of blockchain will become antitrust agencies’ top enforcement priority.

Overall, directing enforcement activities toward these two types of practices would free blockchain, and its economic ramifications, from the most restrictive practices without diminishing its usefulness or creating resentment within blockchain communities. Antitrust would thus become the ally of blockchain ecosystems and would start being perceived as such.

#### 2. Leadership---going bold builds FTC’s brand and secures a foothold for future experimentation

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Introduction

A core failing of today's administrative state and modern administrative law scholarship is the lack of imagination as to how agencies should operate. On the conventional telling, public agencies follow specific grants of regulatory authority, use the traditional tools of notice-and-comment rulemaking and adjudication, and are checked by judicial review. In reality, however, effective administration depends on entrepreneurial leadership that can spearhead policy experimentation and trial-and-error problem-solving, including the development of regulatory programs that use non-traditional tools.

Entrepreneurial administration takes place both at public agencies and private entities, each of which can address regulatory challenges and earn regulatory authority as a result. Consider, for example, that Energy Star, a successful program that has encouraged the manufacture and sale of energy efficient appliances, is developed and overseen by the Environmental Protection Agency ("EPA"). 1 After the EPA established the program, Congress codified it and, eventually, other countries followed suit. 2 By contrast, the successful and complementary program encouraging the construction of energy efficient buildings, the well-respected Leadership in Energy and Environmental Design ("LEED") standard, was developed and is overseen by a private organization. 3 After it was developed, a number of governmental authorities endorsed it and [\*2013] have encouraged LEED-certified construction projects with both carrots 4 and sticks. 5 Significantly, although neither the Energy Star program nor the LEED standard were originally anticipated by any regulatory statute, both have had tremendous impacts.

The Energy Star and LEED case studies exemplify the sort of innovative regulatory strategies taking root in the modern administrative state. 6 Despite the importance of entrepreneurial administration in practice, scholars have failed to examine the role of entrepreneurial leadership in spurring policy innovation and earning regulatory authority for an agency (or private entity). 7 This oversight is most unfortunate in the case of technologically developing fields where experimental regulatory strategies - as opposed to traditional notice-and-comment rulemaking or adjudication - are often essential. 8 In short, administrative law needs an account of agency action that explains why entrepreneurial leadership matters in government and how agencies should operate. 9

[\*2014] This Article: explains that the conventional view of agency behavior - following the specific direction of Congress or the President and using notice-and-comment rulemaking or adjudication processes - does not capture how public agencies and private entities develop innovative regulatory strategies and earn regulatory authority as a result. In particular, this Article: explains how governmental agencies like the EPA and private entities like the United States Green Building Council ("USGBC") (which oversees the LEED standard) depend on entrepreneurial leadership to develop experimental regulatory strategies. It also explains how, in the wake of such experiments, legislative bodies have the opportunity to evaluate regulatory innovations in practice before deciding whether to embrace, revise, reject, or merely tolerate them. To be sure, such experimental strategies are not always preferable to traditional administrative rulemaking and adjudication, but considering experimental strategies and evaluating whether they would be more effective than traditional regulatory approaches is.

Legal scholarship on experimental regulation is well-developed in the context of states serving as laboratories of democracy. 10 Scholars have not, however, discussed the significant role that federal agencies and private bodies can play in experimenting with regulatory strategies in advance of congressional action. 11 Scholars have also failed to examine the role of entrepreneurial leadership in developing successful experiments. This Article: does just that, highlighting the importance of entrepreneurial leadership in government, discussing a number of [\*2015] emerging regulatory experiments, and suggesting how Congress should evaluate such experiments.

This Article: proceeds in four parts. Part I examines the traditional model of regulation and the emerging alternative models of agency action through co-regulation, developing best practices through convening, and encouraging private regulation. In so doing, it underscores that entrepreneurial leadership and a culture of experimentation and trial-and-error learning is essential to developing the best solution. Part II discusses the relevant criteria for evaluating such experiments and examines potential objections to the earned regulatory authority model. Part III discusses four case studies of experimental regulatory strategies: (1) the USGBC's development of the LEED standard; (2) the Federal Trade Commission's ("FTC") oversight of information privacy and data security practices; (3) the National Institute of Standards and Technology's ("NIST") development of a strategy for cybersecurity readiness; and (4) the Department of Health and Human Services' ("HHS") oversight of electronic health records. In all of these cases, the private body or federal agency acted to oversee an emerging technology or issue (often in advance of explicit congressional direction and guidance), allowing Congress to observe the strategy in action and evaluate it after the fact. Part IV examines the concept of policy entrepreneurship, explaining both the barriers and opportunities it faces in the modern administrative state.

I. The Traditional Model and Emerging Realities

The traditional model of regulation relies on notice-and-comment rulemaking and agency adjudication. 12 Under this model, the output - the starting point for traditional administrative law analysis - is generally a form of positive law developed and enforced by a government agency through traditional tools (rulemaking or adjudication). 13 As Professors Charles Sabel and William Simon have observed, this model, "pejoratively called command and control, is identified with rule-bound bureaucracy and deference to ineffable expertise." 14

The traditional model can be depicted neatly as a hierarchy. 15 Congress sets a specific policy direction and empowers an administrative agency to implement that policy. The agency, in turn, uses either its rulemaking or adjudication authority to implement that direction. Finally, owing to the agency's expertise and congressional authorization, courts review the agency's action with deference.

[\*2016] Driven by technological changes and globalization, regulatory agencies increasingly are looking to alternative regulatory strategies, many of which fit under the "New Governance" label. 16 In some cases, innovative regulators experiment with new approaches to address emerging issues and fill gaps in the existing regulatory regime. In other cases, an agency might experiment with a co-regulatory strategy (where the agency integrates its authority with private sector efforts); exercise its authority in creative ways, such as developing best practices through convenings; or rely on private regulation. In that last category, as is the case with Energy Star, the government agency (or private entity, for that matter) can certify compliance with best practices, thereby sharing valuable information with the public and shaping norms of behavior. 17 In each of the above examples, the regulatory agency acts not within a hierarchy, but within a network. 18

[\*2017] The traditional, hierarchical model follows a familiar, step-wise approach to regulation. 19 The first step is establishing a standard of conduct. 20 The second step is implementing that standard of conduct, generally through a monitoring regime. 21 The final step is enforcement, in which parties are sanctioned for any failures to comply with the rules. 22 This model of regulatory action still holds strong in some areas, but it is no longer - and should not be - the exclusive strategy for addressing emerging policy issues.

In the emerging, networked environment, regulatory agencies find themselves with a range of options and tools for developing standards of conduct, monitoring behavior in the marketplace, and enforcing or encouraging compliance. The conversation around such emerging solutions has taken a number of forms, sometimes under the headings of "responsive regulation," "experimentalism," or "New Governance." However framed, there is a pressing need for more adaptable approaches that can operate effectively in technologically changing environments or in fields where the circumstances differ across geographic (or other) contexts. 23 To address emerging challenges, regulatory agencies will increasingly be called upon to experiment with non-traditional regulatory strategies, requiring legislatures to monitor and evaluate the effectiveness of innovative regulatory initiatives after the fact.

A. The Limits of the Traditional Regulatory Approach

The traditional model of regulation is coming under strain in the face of increasing globalization and technological change. 24 Consider, for example, the traditional model of drug and medical device approval used by the Food and Drug Administration ("FDA"). The legacy model of regulation envisioned the FDA reviewing a drug and making an up-or-down decision on whether to approve the marketing of the drug. 25 By putting all of the pressure on the front [\*2018] end (ex ante), the legacy model creates two sets of challenges: (1) the pre-approval process takes a long time, costs a lot of money, and, in some cases, unnecessarily delays access to potentially beneficial drugs; and (2) the lack of a post-approval review process allows drugs to "be marketed despite evidence that they were doing unanticipated harm." 26 Unfortunately, the second type of error - a lack of responsiveness to on-the-ground realities - reinforces the first type of error, creating more pressure on the FDA to withhold approval until it satisfies itself that the relevant drug or device will not cause harm. 27

Congress is well aware of the limits of traditional ex ante regulation. In the food and drug arena, it has worked to update the FDA's model of regulation. In the Food and Drug Administration Amendments of 2007, for example, Congress gave the FDA increased flexibility to approve drugs and require ongoing research as to how the drugs work, called for an improved Adverse Event Report System at the agency, and mandated a framework for monitoring drug efficacy in practice. 28 More recently, the FDA established fast-tracks for approving drugs and medical devices that promise life-saving breakthroughs. 29 As the FDA explained with respect to the medical device review process, "reducing premarket data requirements while increasing postmarket requirements for devices subject to a [Pre-Market Approval], when appropriate, can assist the FDA in making medical devices available to patients sooner than if following the traditional premarket review pathway." 30

[\*2019] This Article: , while sympathetic to the need to reform existing regulatory structures, does not focus on this issue. 31 Rather, it explains how considerable flexibility for a range of alternative options exists within current structures and is already being used by agencies and private entities to great effect. As such, this Article: describes the underappreciated model of earned regulatory authority, calls for a more self-conscious use of this model, and explains how agencies can spearhead and implement this model successfully through entrepreneurial leadership and a culture of trial-and-error problem solving. 32

The role of a more imaginative approach to regulation relates back to the "responsive regulation" movement led by Ayres and Braithwaite. On their account, regulatory strategies can be conceptualized as an "enforcement pyramid," with "persuasion" on the bottom and "license revocation" at the top (as the regulatory equivalent of the death penalty for a regulated firm). 33 In all cases, a responsive regulation approach emphasizes dialogue and engagement around the impact of regulatory efforts in practice. 34 In so doing, it underscores that regulators need not always use their traditional tools (notice-and-comment rulemaking and adjudication). Rather than reflexively adopting traditional approaches, regulatory agencies can (1) embrace and oversee self-regulation (enforced self-regulation or co-regulation), (2) convene stakeholders to develop best practices, or (3) persuade parties to develop private regulatory initiatives. The next three Sections discuss each strategy in turn.

[\*2020]

B. The Promise of Co-Regulation

Even when using its traditional authority, an agency can operate more nimbly and effectively by integrating its efforts with private bodies who have expertise in the field. Where that integration involves the explicit embrace, oversight, and enforcement of actions by private bodies, the model of regulation is aptly described as "co-regulation." 35 For a successful use of co-regulation, consider the FCC's use of frequency coordinators to assign rights to use the wireless spectrum. As I have explained previously:

One notable self-regulatory program that the FCC has overseen is the use of frequency coordinators, which manage voluntary cooperation in the use of point-to-point microwave links and private land mobile radio systems. In that context, the coordinator evaluates requests for new licenses and certifies that such new licenses will not cause undue interference to established users. Consequently, while the FCC is the authority that grants or denies licenses as a formal matter, it routinely relies on and defers to the judgment of the frequency coordinator. This deference to the frequency coordinator facilitates cooperation around the use of the relevant licenses. 36

The importance of this co-regulation model is that the FCC's delegation of authority enables practical problem-solving on the ground by the frequency coordinator. As Dale Hatfield, a former Chief Engineer at the FCC, explained, this system works because it encourages the local engineers to "sit down together, solve these problems, and say let's figure out how to do it," limiting the need for the FCC to use its backstop authority. 37

The FTC's partnership with the Better Business Bureau's National Advertising Division ("NAD") operates in a functionally similar fashion to the FCC's use of frequency coordinators. 38 Notably, the NAD has developed an [\*2021] effective model of dispute resolution around misleading advertising issues, deciding an array of issues and referring cases, where necessary and appropriate, to the FTC. 39 Because the NAD has developed such a trusted program, FTC leaders have praised its work and relied on it to carry the laboring oar in this area, 40 leaving the FTC's residual authority as a backstop. In particular, the NAD refers cases to the FTC where a party refuses to participate in its process or comply with a decision. 41

Learning from the NAD model, the European Union is working with the European Advertising Standards Alliance to develop a similar approach to overseeing false advertising claims. 42 In this case, however, the governmental authority is actively involved in developing and supporting this body rather than integrating its work after the body developed on its own. 43 In short, government can either embrace existing bodies as part of a co-regulation strategy or stimulate and steer the development of new ones.

C. The Role of Best Practices and Agency Convened Efforts

For many regulatory agencies, the opportunity to act as a "convenor," to develop best practices, and to create "soft law" or norms is an important part of their mission. As former FTC Chair Bill Kovacic explained with regard to the FTC, "Congress gave the FTC capacity to serve as a convenor - to engage in a diverse array of activities that facilitate norms development," including "what we now call "soft law' measures (e.g., self-regulatory standards, proposed guidelines)." 44 In particular, Congress specifically authorized the FTC to collect information and develop reports on topics not immediately related to cases or regulatory matters before the Commission. 45 In Kovacic's view, the FTC has used its convening authority effectively, "improving understanding, building consensus, and supplying focal points for norms development" through thoughtful reports that distill key issues. 46

[\*2022] For a range of agencies, the role of developing and championing best practices is on the rise, 47 reflecting a number of trends. First, many agencies find themselves without sufficient authority to promulgate binding rules as new technologies emerge. Second, even where an agency may have formal authority, it might be reluctant to use it in the face of an emerging technology where it needs to act more quickly than formal notice-and-comment rulemaking allows. Third, the agency may lack sufficient confidence that a prescriptive rule is warranted and thus leaves open a range of options, merely narrowing the field of possibilities and pointing entities in the right direction. 48

To develop best practices effectively, an agency must invest significant resources in the enterprise. Stated generally, this effort involves "horizontal modeling rather than hierarchical direction" and is "a method of regulation in which central administrators provide advice and disseminate information, instead of mandating a one-size-fits-all regulatory scheme." 49 In an increasing number of cases, best practices focus not only on U.S. firms, but also those across the world, requiring that the regulatory agency coordinate its international counterparts. 50 Moreover, to develop emerging best practices, it is important that agency staff take the time to learn the details of "the regulated entities first-hand, develop a strong sense of emerging processes, and … [share] knowledge of these processes with staff at other locations." 51

Where an agency (or a private entity) identifies and disseminates a best practice, it acts as a "norm entrepreneur." 52 As discussed in Part III, the FTC has performed this role in the online privacy and data security contexts, articulating and recommending a set of best practices. 53 One virtue of this role - like soft law more generally - is that it may well make the adoption of more formal regulation less necessary. 54 To the extent that the articulation of the relevant [\*2023] norm itself does not overcome the collective action problem and catalyze compliance with a norm, a certification regime (like Energy Star) for those who are compliant (along with naming and shaming) might do so.

One path for catalyzing compliance, which can be labeled as "jawboning" or "threats," involves the use of apparent legal authority - say, opening up an investigation - to achieve a desired result. In a provocative article, Professor Tim Wu defends the use of "threats," calling for norm entrepreneurship by agency leaders and the development of limiting principles for the practice. 55 In criticizing Wu's argument, some commentators have characterized it as condoning lawless conduct. 56 In that spirit, I previously criticized the FCC's use of its merger review authority to secure outcomes in other contexts that were not specifically related to the merger. 57 I also called the FCC's use of "arm twisting" controversial when done without full transparency and a willingness to take formal action. 58 Finally, I noted that the tactic is "dangerous" if the agency is not willing and able to follow through with formal regulation if the called-for behavior does not take place, as the meaningless nature of the threat will become plain and the agency will lose credibility. 59

Any agency that develops best practices should be aware of the potential risks of such an effort. For starters, if an agency's identified best practices are allowed to become stale, some private actors might stick with them and fail to improve their practice. Second, given that there is no judicial oversight of best practices development, 60 it is important that agencies pre-commit to a level of procedural regularity and fairness in how they develop them. Third, without either carrots or sticks related to best practices, an agency may find it difficult to generate attention or catalyze compliance. 61

[\*2024]

D. Private Regulation

As exemplified by the LEED building standard, a private regulatory initiative can drive behavior toward a social goal. Given the need to respond to emerging issues more adaptably than traditional regulatory processes allow, public agencies may be tempted to rely on private bodies. 62 In the internet environment, for example, a range of issues are managed by multi-stakeholder organizations, which use "dialogue to develop voluntary norms and best practices." 63 Similarly, in the environmental field, a range of "private activity generates pressure on environmental behavior without resulting in a statute, regulation, agency enforcement action, or court decision for review by scholars and policymakers." 64

The role of private, multi-stakeholder efforts in internet governance is the U.S. government's official policy. 65 Since the development of the internet's basic technical standards in the 1980s and 1990s by groups like the Internet Engineering Task Force ("IETF") and the World Wide Web Consortium ("W3C"), "these entities have largely established the norms and standards for the global internet, but they are little known to the general public." 66 The U.S. government recently fully embraced this model, recognizing the need for internet policy and governance issues to be developed in an adaptable and global fashion. 67 This embrace includes supporting the Internet Corporation for Assigned Names and Numbers ("ICANN") as an independent, international body to oversee the internet's numbering system. 68

In the internet context, two private regulatory efforts bear notice, as both exist in tandem with legal and regulatory oversight. First, the Copyright Alert System (overseen by the Center for Copyright Information) was a cooperative effort between broadband providers and content providers focused on addressing [\*2025] piracy in peer-to-peer networks. 69 This initiative, which existed for four years, 70 provided some measure of guidance to the broadband industry on what sort of "repeat infringer" policy was reasonable. 71 In light of recent court decisions holding a broadband provider liable for failing to develop an appropriate repeat infringer policy, the guidance from this organization could be considered best practice and protect a provider from liability, 72 although its cessation of operations may limit its impact. Second, the Broadband Internet Technical Advisory Group ("BITAG") is a multi-stakeholder organization that seeks to define best practices and broadband network management ahead of any FCC action under its network neutrality regime. 73 In its most recent regulatory decision on network neutrality, the FCC highlighted its openness to "obtaining objective advice from industry standard-setting bodies or similar organizations," specifically citing BITAG as an example. 74

Both the Center for Copyright Information and BITAG relied on a mix of industry representatives and public interest advocates and operated in an open, transparent, and consensus-based manner. 75 Like frequency coordinators and the [\*2026] NAD, the bodies confronted the challenge of earning their legitimacy and claim to regulatory authority. If such efforts succeeded, the FCC and copyright courts would regard their guidance as meaningful, just as the FTC and courts do with respect to the actions of the NAD. 76

In the environmental realm, the Marine Stewardship Council ("MSC") is an instructive case study on how a multi-stakeholder private regulatory initiative can have a major impact. The MSC, founded by the World Wildlife Fund and Unilever, was launched to address the concern about fisheries operating in a sustainable fashion. 77 As one commentator explained, "the MSC administers standards for sustainable fisheries, updates the standards periodically with input from a stakeholder advisory group, evaluates fisheries, and allows those fisheries that meet certain criteria to label their fish as MSC-certified." 78 The MSC standard focuses on three core concerns: (1) maintaining sustainable fish stocks; (2) minimizing any adverse environmental impact; and (3) managing the fishery effectively, including compliance with relevant legal requirements. 79 Under the MSC-administered regime, independent private auditors must assess compliance with the relevant standards and compliant products can be labeled as such. 80 Indeed, the MSC regime allows any organization with concerns related to certification to make a formal objection during the certification process. 81

[\*2027] The MSC provides a powerful example of how private regulation can work even when not reinforced by public regulation. 82 By 2012, sixty percent of the fish caught in U.S. fisheries for human consumption were MSC-certified and major corporations, such as Wal-Mart and McDonald's, had committed to selling only MSC-certified, wild-caught fish. 83 Moreover, the MSC's private regime drove compliance with the nonbinding Code of Conduct, developed by the United Nations Food and Agriculture Organization, by making it part of its requirements. 84 After surveying this regime and formal regulatory efforts to address the issue, one commentator concluded that the MSC model was more successful than traditional regulatory efforts in this area and that "private regulation is best situated to address the complex problem of fisheries depletion." 85

In short, private regulatory efforts, such as those led by multi-stakeholder organizations, can influence private behavior whether they operate in tandem with public regulatory oversight or in a vacuum created by a lack of regulatory oversight. Whether they operate in the backdrop of public oversight or as a standalone effort, private bodies need to establish their legitimacy to influence behavior on the ground. To do so, they must have sufficient independence from those they oversee, enabling both regulators and consumers to trust their judgments (including determinations of compliance). 86

[\*2028]

E. Hacking the Bureaucracy

In most situations, Congress and agencies think along traditional lines and agency leaders continue on the established path of agency regulation, under-utilizing the alternative models discussed above. 87 There are a number of reasons for this dynamic, including the power of "path dependency and bureaucratic entrenchment." 88 Even more powerfully, the incentives for policymakers are often to avoid Type 1 errors - those visible errors of commission - that arise when trying a new strategy that might fail. By contrast, the hidden Type 2 errors - ones of omission - are permissible and a regular feature of bureaucratic inertia. 89

On one account, the challenge of leading a bureaucracy is captured by the reality that governmental employees, who enjoy civil service protection, can tell their politically-selected leaders, "I was here long before you arrived and will be here long after you are gone." In practice, such explicit defiance is the exception. Regardless of whether bureaucratic inertia is willful or based on an entrenched tradition governmental agencies are built to continue the same course. Consequently, any course corrections require energetic leadership. 90 And governmental employees are generally conditioned "to be quiet, take orders, and do their jobs in a repetitive way." 91 On the positive side, governmental employees tend to have a service orientation and are mission driven, meaning [\*2029] that effective engagement around the mission and purpose of the agenda can catalyze innovation and collaboration. 92

Bureaucratic inertia and autopilot administration not only prevent innovative programs from being developed, but also can lead existing programs to be administered badly. Take, for example, the development of the healthcare.gov website. After Congress passed the Affordable Care Act, a health care economist, David Cutler, encouraged the White House to treat the administration of the law more like "launching a start-up than passing a law." 93 In particular, Cutler made clear that the default strategy - using the existing personnel at the Center for Medicare and Medicaid Services ("CMS") - for administering the law was a recipe for failure. 94 In an assessment ignored by the White House, he explained that CMS "is demoralized, the best people have left, IT services are antiquated, and there are fewer employees than in 1981, despite a much larger burden." 95

Cutler's call for an entrepreneurial approach to implementing the Affordable Care Act was rejected by President Obama. 96 Perhaps fearing the need to manage political warfare with House Republicans or responding to the HHS' interest in protecting its turf, President Obama agreed to, in Cutler's words, pile "new responsibilities onto a broken system." 97 As this episode underscores, even when the current system is flawed, the pressure to use it is powerful. As a result, the healthcare.gov website cost $ 800 million to develop, whereas Twitter, which serves a similar number of users and is of comparable complexity, cost only $ 60 million. 98

The redeeming part of the healthcare.gov story is that it demonstrates that treating a government project like a startup can work. After the failed rollout of healthcare.gov (which only enabled six people to sign up for insurance on its first day), President Obama essentially embraced Cutler's recommendation, [\*2030] authorizing Todd Park, Mikey Dickerson, and a team of entrepreneurs to operate in a new structure that was called "tech surge." 99 This project, like a good startup, approached the challenge of building an effective website from first principles. Rather than ask how the government had done IT projects before, the team innovated (for government) in a number of important ways, including using Amazon Web Services to support the site. 100 In developing the new website, it broke from the traditional bureaucratic process of "waterfall" development (where every step is prescribed and locked-in) and used "agile" development (where the process is iterative and evolves along the way). 101 Finally, the team built a login system for $ 4 million (with annual maintenance costs of $ 1 million) to replace the initial version that did not work well and cost $ 250 million to build (with $ 70 million annual maintenance costs). 102

In an important legacy of this effort, Park and Dickerson continued to work in government after fixing healthcare.gov, developing the new U.S. Digital Service ("USDS"). 103 The goal of the USDS is to lure a range of talented technology professionals to the federal government, including data scientists, product managers, and product designers. 104 The USDS, in turn, provides guidance to government agencies on questions like how they can use Amazon Web Services. 105 In short, the USDS supports entrepreneurial leadership in government; and as Park said, it develops "people who can hack the technology, as well as people who can hack the bureaucracy." 106

The healthcare.gov story now has two parts. The first is the cautionary tale about government's traditional inertial default setting - that is, to do things as they were done before. The second underscores that entrepreneurial leadership [\*2031] in government is both possible and important, and can lead to transformative results. 107

The positive legacy of the healthcare.gov story is that entrepreneurial leaders in government can free their agencies from "the mental grip of conventional structures on the capacity to consider alternatives." 108 In so doing, such leaders can facilitate the development of alternative regulatory strategies. Similarly, governmental agencies face the challenge of overcoming the institutional bias that "experts may myopically focus on issues within their area of expertise and thereby fail to recognize that a decision would benefit from accessing other bodies of knowledge or ways of thinking." 109 In short, an important role of entrepreneurial leadership in government is to examine issues through the lens of first principles. 110

The concept of policy entrepreneurship recognizes that an entrepreneurial mindset and skillset can be applied to governance to foster innovative results. Professor Adam Sheingate, for example, defines the concept as the "skillful manipulation of politics [that] somehow results in the creation of a new policy or a new bureaucratic agency, creates a new institution, or transforms an existing one." 111 This type of leadership can also be seen in the development of, for example, the MSC program, the FTC's oversight of online privacy, and the Energy Star program. In a world where the best solutions may well require new models of regulation, it is critical that agency leaders experiment with new solutions. 112

[\*2032] A significant hurdle for entrepreneurial leadership in government - and a foundation of the inertial default setting - is the lack of acceptance of failure as an outcome. In practice, this means that governmental agencies often reflexively turn to traditional regulatory models and do not consider untested alternatives (often out of fear of failure). 113 This instinct mirrors the old private sector saw that "nobody got fired for buying IBM." 114 Citing the fear of failure and risk aversion, former Massachusetts Governor Deval Patrick explained, "there may be no industry less susceptible to innovation than government." 115 There are, however, exceptions, including the Defense Advanced Research Projects Agency ("DARPA"), which makes a conscious effort to promote a "risk-taking and failure-tolerant culture." 116

In the entrepreneurship environment, failure is a normal state, providing data, an opportunity to iterate, and a spur to refine a product offering. 117 Consequently, entrepreneurs celebrate the need to "fail fast" on new experiments by trying them on a small scale and determining as quickly as possible whether they can work. 118 As two advocates of innovation in government put it, "[a] [\*2033] culture of innovation means continuously exploring and adopting new processes in an ecosystem where risk is incentivized, not precluded." 119 Similarly, entrepreneurial leadership in government authorizes calculated risk-taking and, more importantly, provides cover for trial-and-error learning when the trials do not produce the envisioned results. 120 Unfortunately, leaders who support experimentation and are willing to accept the inevitable failures, are the exception, not the rule. 121

The basic entrepreneurial methodology of experiment-measure-iterate is captured in Eric Ries's classic book, The Lean Startup. 122 A core thesis of the book, widely accepted in the entrepreneurial community (and ignored by most legal scholars), 123 is that companies should develop and market a "minimum viable product," solicit feedback from actual customers, and improve it based on that data. 124 At Facebook, this philosophy was adopted and embodied in its mantra, "done is better than perfect." Citing that mantra, one commentator explained that "had Facebook waited so much as a year to perfect its model, the company might very well be where MySpace is today." 125

The Ries philosophy is famously captured in a feedback loop representing the cycle of innovation. 126 The core idea is to embrace experimentation, gather data [\*2034] (whether it signals success or failure), and iterate. 127 The lean startup model, represented by the following diagram, focuses on taking ideas from prototype to feedback to improvement: 128

This lean startup model echoes the style of software development championed by open source software, which calls for releasing code that can be viewed and improved by a community of users and developers. In what Eric Raymond dubbed "Linus's Law," in honor of the founder and coordinator of Linux, the open source maxim is "given enough eyeballs, all bugs are shallow." 129 This approach has spread far beyond open source, enabling "business webs where focused companies partner others to innovate and create value." 130 Although this [\*2035] approach and a commitment to prototyping and testing solutions is novel in government, it is starting to take root, with promising results. 131

With respect to the fear of failure, government operates quite differently than the entrepreneurial world. In government, the perceived costs of failure are sufficiently high that many governmental leaders decline to introduce a new initiative for fear it will fail or refuse to admit that an existing program is failing, even though that admission is a necessary predicate for improvement. To be sure, there are cases like the initial healthcare.gov rollout where the failure is readily apparent and must be fixed. In other cases, however, governmental leaders stand by programs where the data backing up its effectiveness is either uncertain or doubtful.

For an instructive case of governmental leaders refusing to acknowledge the limitations of a program, consider the case of the EPA's Performance Track program. When created, the program was supposed to highlight those companies with stellar environmental records. 132 In practice, however, it ultimately became, as EPA Administrator Lisa Jackson put it, "just one of those window-dressing programs that has little value." 133 Similarly, the EPA Inspector General criticized the program as ineffective, noting that it did not provide "a new model for achieving" its stated goals and very few companies met their stated goals. 134 Nonetheless, the Bush Administration did not make any real changes to the program before the Obama Administration cancelled it. 135

The Performance Track program story, like the failure to acknowledge the failings of the healthcare.gov website earlier, underscores that the hesitancy to acknowledge failure is a major challenge in governmental administration. If governmental leaders refuse to acknowledge failures, they undermine the ability to learn - and iterate - from mistakes and instead allow failed programs to [\*2036] continue during a period of denial. 136 Or, as Lawrence Summers put it while reflecting on the healthcare.gov debacle, it is crucial to resist the "overwhelming temptation for everyone involved [in a project] to circle the wagons and promise rapid repair so as to hold critics at bay." 137

Another challenging dynamic for governmental leaders to address is the impact of unconscious bias. It is normal for those involved in a project to believe that it is working, following what Nobel Laureate Daniel Kahneman calls "confirmation bias." 138 As one commentator put it, a challenge for those evaluating regulatory experiments is that those "deeply involved in the implementation of a particular regulation are likely to see the benefits of such a project far more clearly than the costs." 139 As commentators have explained, there are a number of strategies for overcoming this bias, including using red team-blue team exercises, appointing a Devil's Advocate, and creating a process for deliberate decisionmaking. 140 Of course, as happened in the Performance Track situation, new leadership is able to bring a fresh perspective. Ideally, however, existing leaders can step back and ask, "if a new leader came in and took a fresh look, what would she do?" 141

[\*2037] The role of entrepreneurial leadership in encouraging candid reflection and criticism is essential. As former FTC Chair Bill Kovacic and David Hyman explain, agencies develop an institutional culture and a reputation (or a brand, as they put it). 142 In some cases, that brand can be one of reliability and commitment to data-driven decisionmaking. An important role of an entrepreneurial leader is to develop and maintain that commitment. In the case of Underwriters Laboratory ("UL"), for example, its early leadership did just that, building up "UL's reputation for reliability by creating organizational structures, administrative routines, and oversight systems designed to prevent mistakes and misconduct." 143 To get past the natural status quo bias, an entrepreneurial leader should welcome diverse ideas, criticism, different options, and experimentation. 144 In Part II, to explain how policy entrepreneurship can earn regulatory authority, I discuss how experimental initiatives need to establish their effectiveness, legitimacy, and accountability to be embraced as lasting regulatory regimes.

#### It also improves overall resource efficiency and investigation accuracy

Almudena Arcelus 21, Principal at Analysis Group, Mihran Yenikomshian, Vice President at Analysis Group, and Noemi Nocera, Associate at Analysis Group, “Mitigating Antitrust Concerns When Competitors Share Data Using Blockchain Technology”, Harvard Journal of Law and Digital Technology, Harv. J.L. & Tech. Dig. (2021), Spring 2021, Lexis

C. Transparency for regulators

Implementing transparency in the network design can improve regulators' ability to investigate claims of antitrust violations. First, blockchain networks could be designed to provide antitrust investigators with a clear audit trail of the life cycle of an asset as it moves through a firm's supply chain, providing critical information to investigators as they assess when and how a firm's products transformed from raw materials to a finished good. Second, networks can be designed to provide investigators with more accurate, reliable, and comprehensive transaction data across an entire firm, rather than the piecemeal and inconsistent data that regulators often receive. Last, we could imagine the development of a blockchain, potentially accessible only by select parties or regulators, that contains industry-wide transaction data, which could provide an unmatched tool for investigators. Furthermore, the standardized data format in a blockchain may lead to faster resolution of potential antitrust investigations.

Whether or not these particular strategies would be effective in a real-world setting will depend on the industry or business context, the design of the blockchain network at issue, and the effectiveness of governance and regulatory oversight.

V. CONCLUSION

Because of its potential to change the way many governments' and firms' services currently operate, blockchain technology has attracted extensive press coverage. Although antitrust concerns exist in relation to blockchain adoption and data sharing between competitors (including access to information, collusion, abuse of dominance, and enforcement), blockchain serves mainly as a data management tool. How it affects competition will depend on network design and regulatory oversight, among other things. When examining antitrust concerns, industry observers as well as regulators should assess blockchain technology according to its specific implementation and its role in the wider framework within which it is used.

### Plan---1AC

#### PLAN

#### The United States federal government should prohibit anticompetitive practices by nucleus participants at the root layer of blockchains.

### Solvency---1AC

#### SOLVENCY

#### Prohibiting anticompetitive practices by the blockchain nucleus of creates a principled basis to apply antitrust to distributed ledgers without over broadening liability for all users

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2 BLOCKCHAIN’S LEGAL FICTION

In this section, I introduce the theory of granularity and outline how it enables the application of antitrust law to blockchains. Transactional by nature, that theory aims to explain public permissionless blockchains beyond the simple cost reduction framework. It seeks to translate accurately the governing reality of such blockchains, creating for the purpose a new legal fiction that encapsulates blockchain without forcing it into inadequate boxes.

2.1 Dynamics of Blockchain Governance

The theory of granularity, to which one may want to provide a semantic explanation, frames blockchain governance as a new transactional institution. By doing so, it fills the gap created by the impossibility of applying the theory of the firm to public permissionless blockchains.

2.1.1 Semantic explanation

In “The Nature of the Firm”, Ronald Coase distinguished between organizations and organisms.3 While firms are organizations, blockchains are clusters of organisms that, by nature, are spontaneous. Their functioning must be analyzed and understood this way so that antitrust and competition law can be properly applied when necessary.

The present chapter introduces the theory of granularity for the purpose. Generally, the notion of granularity defines the size of the smallest element in a system - that is, an organism. Thus, this theory aims to analyze the role played by each component of a blockchain. Unlike the firm, where vertical control is exercised over its components, blockchains are made up of horizontal governance mechanisms. This reinforces the importance of each organism, as one cannot merely assume that they will follow one coordinated direction.4 One must then study blockchain’s smallest organisms, the role they play and their dynamism.5 It is only by analyzing the granularity level that blockchain governance can be properly understood.6

2.1.2 Understanding blockchain governance

Blockchain is a space in which different forms of power are being exercised. However, unlike the firm, in which one exercises a power of command and control, I have explained that no single actor can entirely control a public permissionless blockchain.7 As a result, multiple interests can compete within the same blockchain; they may even be opposed. Blockchain “contribute[s] to the realization of a number of individual objectives which no one knows in their totality”8 For that reason, one must study the different types of power that are generally found within public permissionless blockchains to understand which interests may eventually prevail over others. In doing so, we should keep in mind that “people who think the purpose of blockchains is to completely expunge soft mushy human intuitions and feelings in favor of completely algorithmic governance (emphasis on ‘completely’) are absolutely crazy.”9

I study blockchain power games by analyzing what I have described as the fifth blockchain level in Chapter 4: the governance layer. That level sits on top of more technical ones, and it appears to be central in defining the activities at the levels above. Furthermore, different constraints come into play in blockchain governance - namely, economic, political, logical, sociological, architectural and legal ones. Understanding how these constraints interact is a challenge; but it is essential in order to get a grip on who holds control over blockchain layer 1 and how that power is exercised over other participants.

A distinction between all three categories of public permissionless blockchain participants is helpful in this regard - namely, between founders or core developers (I will often present them together for the sake of simplicity), users and miners. I show that although each blockchain has its specificities, the above-mentioned groups will use the same mechanisms to express their preferences,10 and will encounter the same limits if they act on their own. Eventually, their powers may suffer from four constraints that Lawrence Lessig described with his “pathetic dot theory”: law, markets, social norms and architecture.11

As for private blockchains, I have explained that they mimic that structure to different degrees, depending on their original design. The closer they are to public permissionless blockchains, the less the theory of the firm will be transposable to them. The following developments then become relevant for public permissionless as well as private blockchains.

2.1.2.1 The power of founders and core developers'2

Blockchain founders and core developers are those who implement the original rules of a blockchain.13 They design the code software and determine which consensus protocol will be used.14

Although core developers work on the fourth level of blockchain - its infra- structure - they interact with other blockchain participants at the fifth level. Indeed, one may stress that the blockchain architecture limits their power, as they lose any form of direct control over other participants once they put the blockchain online.15 For most blockchains (but not all!),16 founders and core developers cannot unilaterally impose any changes17 or control who may propose protocol updates.18 For instance, any Bitcoin Improvement Proposals must be voted upon, according to miners’ computing power, before they get implemented.19 Indeed,“[t]he nature of Bitcoin is such that once version 0.1 was released, the core design was set in stone for the rest of its lifetime,”20 unless the majority agrees to change it.

The more participants are included in those voting procedures, the more decentralized that blockchain layer is.21 The opposite is also true. For instance, Decred22 and Tezos23 are cryptocurrencies with more centralized governance systems. One of Tezos’ principal characteristics is the ability to amend its consensus when necessary.24 The presence of off-chain and side-chain governance mechanisms, usually controlled by developers, should also be closely studied.25

It remains that core developers do not control who can use the blockchain at the platform layer26 or who can build applications on top of it.27 That is because blockchain founders and core developers cannot impose changes on the blockchain code, interface, application, data or benefice.28 Their main role is thus close to that of “advisors,”29 but their influence is limited by blockchain participants’ desire to maximize their own benefit, which may lead them, should they disagree with core developers, to refuse the implementation of new rules, to move to a rival ecosystem or to fork the blockchain.30 Social norms further limit them because they may fear not being influential enough to prevent hard forks.

Hard forks result in backward-incompatible software updates. When they do not obtain a sufficiently broad consensus among miners,31 hard forks cause the chain to split in two, permanently. Indeed, miners who do not follow the new block validation requirements will be unable to add their blocks to the latest version of the blockchain, as the core client will automatically reject them as non-compliant. Instead, a new chain of blocks will form, creating a split: two chains following different rules. These forks limit the core developers’ willingness to act against the interests of other participants.32 And core developers may also fear soft forks, although to a lesser degree. Soft forks happen when new rules are implemented, but when the blocks following the original rules are not rejected from the chain. These modifications are backward-compatible, accommodating miners who implement the change and those who do not. Nevertheless, one should underline that these limits on core developers’ power are linked to the decentralized nature of blockchain governance, which is not a necessary feature, but needs to be enacted.33 New blockchains may appear in which greater power is given to the founders and core developers.34

However, such blockchains will suffer from two inherent limits. First, the extent to which a (re)centralized blockchain could thrive remains to be seen.35 Such blockchains could deplete trust by confining power in the hands of a few, thus disincentivizing users from joining them. Second, a (re)centralized block- chain could function less efficiently than a truly decentralized one, because all its participants would no longer be in a position to improve it. This lack of efficiency, even if it only concerned certain types of transactions, could hinder these blockchains - which probably explains why, to this day, they have not prospered.

2.1.2.2 The power of users36

On permissionless public blockchains, users propose new transactions. Anyone can become a user.37 Users exercise substantial power over the blockchain, since their decision to use it (or not) is central to the blockchain’s economic and social value.38 Their influence extends from influencing transaction fees39 to providing additional value by developing and using applications running on top of the platform layer.40 They can also force hard forks on the blockchain.41 However, their power is limited by the fact they cannot (easily) exercise coordinated control, as their actions are highly decentralized and spontaneous.42 This creates an architectural limit and makes their behavior primarily dependent on prices.43

2.1.2.3 The power of miners44

On permissionless public blockchains, miners validate transactions assembled into blocks. Any participant can become a miner.45 Miners follow the rules encoded in the fourth blockchain level (e.g., the Bitcoin Core client).46 They can comply with a different set of rules, but they will then waste computing power by producing an orphaned block, thus losing potential rewards. Following the main client’s rules is miners’ dominant strategy.47 If they coordinate their behavior, miners can influence a blockchain by realizing a 51 percent attack,48 thus forcing a soft fork.49 The risk is higher when miners are grouped into mining pools.50 In such a scenario, the blockchain protocol is changed to loosen the rule-set enforced by full nodes.51 Such a change occurs when enough hashing power, or energy expended to mine a cryptocurrency, is devoted to it.52 The power of miners to start soft forks is nonetheless limited by both the blockchain’s architecture53 and social norms - they must convince blockchain participants operating as nodes to run the new version of the software.54 Miners also suffer from market constraints, as initiating a soft fork may decrease the value of the tokens they own.55 The price mechanism also guides their actions, creating a strong market-related constraint. Finally, even if a fork were created, the new community would have the strenuous task of convincing other users to join it.56 For example, Bitcoin had been forked over 100 times at the time of writing. Over 30 of them are considered failures, while another 29 projects are no longer capable of transacting. Among the remaining forks Just a few are considered valuable.57

2.1.3 The blockchain power game

This overall balance of power, common to all public permissionless block- chains, is the general analytical framework (as illustrated in Figure 7.1) within which to analyze whether one of these groups, on a case-by-case basis, has sufficient influence to qualify as control under antitrust or competition law.

On top of all that, core developers, users and miners may also store a copy of the blockchain ledger. When doing so, their computers are labeled as light nodes if they store only a subset of the blockchain ledger and full nodes if they store a copy of the entire blockchain.58

Although these nodes are passive and cannot be designated as actors in the blockchain, they ensure its integrity. This role carries power. First, blockchain participants who are nodes may alter their copy of the blockchain.59 Second, they may also (threaten to) validate blocks in which there is double spending.60 Their job is indeed to prevent users from spending the same token twice by allowing miners to verify the proposed transaction against a list of previous unspent transaction outputs. They protect blockchains value. However, their power is mainly limited by the fact that they cannot either control or influence transactions.61

This is the blockchain power game. It is well balanced, and technical solutions (called “layer 2” solutions) are constantly provided to maintain that balance. But these solutions are insufficient to maintain balance when different groups of blockchain participants come together to escape these constraints to the detriment of the broader ecosystem. When this occurs, they are exercising control over the blockchain.

2.2 The Blockchain Nucleus

Thus far, the theory of granularity has allowed me to determine the different forms of power enjoyed by blockchain participants. I must now detail how to identify a legal fiction controlling the blockchain.62 To this end, I explain what a blockchain nucleus is and then analyze its influence over other blockchain participants. 1 then describe how to define such a nucleus.

2.2.1 Usefulness and challenges

2.2.1.1 The nucleus

None of the three types of blockchain participants - core developers, users and miners - can impose their power on other groups to the point of taking complete control over the blockchain. Blockchains are indeed decentralized. They prevent the exercise of vertical power, and this differentiates them from firms in which a group, or sometimes even an individual, can control the other participants and “force them to collaborate,” so to speak.

That being said, even with horizontal and decentralized governance, a group of participants may achieve a form of control over the blockchain by collaborating, by circumventing (some of) the constraints imposed on them,63 and by changing them in the long run.64

I contend that such a coalition exists for each blockchain (at least, for the surviving ones),65 and I call it the nucleus. The nucleus includes all the participants who have a personal interest (albeit transiently) to collaborate toward the same long-term goal: ensuring the blockchain’s survival.66 Its members do not compete as they are, together, trying to maintain and expand their blockchain. Their short-term interests may diverge from time to time67 - for example, when two miners are racing to mine new blocks.68 Still, they seek to ensure blockchain integrity and systematically promote the same blockchain instead of other ones.

2.2.1.2 Usefulness

Assessing which participants have joined forces and are thus part of the nucleus is essential to determine who ultimately controls the blockchain. Put differently, it leads to identifying the participants that can be held liable for a breach of antitrust law when it is shown that they have anticompetitively exerted their influence.69 Identifying the nucleus amounts to creating a legal fiction to which the law can be applied, but also to which rights can be granted (see Figure 7.2).

The nucleus should indeed become a legal fiction that can be liable for anticompetitive practices, but also able to claim damages. In that regard, determining the nucleus size will prove central. It will prove useful in cases of anticompetitive practices directed at a blockchain nucleus. When a legal entity - whether a blockchain nucleus or a firm - infringes antitrust law and causes damages to another nucleus, the latter must have the means to introduce a legal action, stand by its rights and claim damages. Assigning liability and granting rights to blockchain ecosystems are thus two sides of the same coin.

3 DEFINING THE NUCLEUS SIZE

Courts and antitrust agencies will face the task of determining the nucleus size. The further away a participant will be from the nucleus’s center, the more difficult it will become to genuinely include her or him in the nucleus. With distance, it will prove harder to show that she or he could have influenced other participants’ behavior. Only a case-by-case analysis can elucidate this question. This analysis should nevertheless be based on concrete and quantifiable frameworks to ensure legal certainty, limit legal errors and reduce regulatory costs. To this end, agencies should focus their investigation on economic agents’ ability to exert a horizontal power of command and control. They should also consider their capacity to interfere with the blockchain’s economic value and influence norms.70

Let me be more specific. The first element that should be factored in to determine which participants are part of the nucleus is the technical ability to exert a horizontal quasi-power of command and control. One must assess each blockchain’s architectural characteristics to determine whether a few users may impose such decisions on others. The more a group of users can control others, the more they can single-handedly contribute to the block- chain’s survival, and therefore be considered part of the nucleus. In fact, the original design of a blockchain can give one of the three groups of users more or less power. It can put them in charge of implementing the execution of transactions, designate them as miners or even enable them to change the design a blockchain’s design unilaterally. Some blockchains might also use several mechanisms based on the platform layer to create governance (whether off-chain or side-chain).71

The second element is the ability of each participant to interfere with the blockchain’s economic value.72 When some users govern the pricing structures, the blockchain’s attractiveness or economic incentives, they have indirect control over the blockchain. This ability can be assessed by looking at technical elements. For instance, the capacity to change the size of each block, which may alter the number and types of transactions, is a sign of control. The same goes for the power to propose modifications to the core code to attract new participants. Finally, the more a participant has invested in the blockchain, the more he has an incentive to control its economic value.73 For that reason, previous investments in a blockchain can show agencies where to look for the nucleus.

The third element is the ability to influence a blockchain’s norms.74 Here, “norms” are defined as the “constraints imposed not through the organized or centralized actions of a state, but through the many slight and sometimes forceful sanctions that members of a community impose on each other”75 - that is, the unwritten rules that one often feels compelled to follow.76 The more a participant can incentivize others to behave in a certain way - on pain of rejection from the community - the more they exercise control over the blockchain’s general direction.77 For example, when core developers can influence other participants into accepting all of the modifications they would like to apply to the core (e.g., by arguing about the necessity for technical upgrades, security failures, bugs...), they effectively pilot part of the blockchain.

4 THE THEORY OF GRANULARITY IN ACTION

The theory of granularity would enable agencies to identify a blockchain’s nucleus. It would thus permit the creation of a legal fiction to which antitrust can be applied. In turn, this would impose new obligations upon blockchain participants while simultaneously giving them new means to challenge anti- competitive behavior. This theory would make it possible to analyze relevant markets and market power in antitrust proceedings. The theory of granularity would also make it possible to impute anticompetitive practices to a given set of blockchain participants.

#### Antitrust is limited by application only to the ‘firm’, defined by vertical control---modifying this with targeted prohibitions prevents blockchain centralization

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The second part of this book is dedicated to artificial centralization - namely, anticompetitive behaviors that take place on blockchains or are facilitated by them. 1 contend that studying these practices is essential to make blockchain and antitrust law function as allies; indeed, no sustainable cooperation is possible without addressing (and preparing for) the situations in which mutual aggressions will occur.

To this end, I first analyze the extent to which antitrust laws are currently applicable to blockchains. I show that the theory of the firm is central to modern antitrust (Chapter 6) and that it cannot be transposed to all blockchains. For that reason, I propose a new approach - dubbed “the theory of granularity”- which allows for the creation of a legal fiction, placing blockchain’s activities (back) under the rule of law (Chapter 7). I explain that implementing that approach would benefit all the players in the blockchain ecosystem. This would clear the way for law enforcers to apply the rule of law and, in turn, would help eliminate the most harmful practices and encourage investments. Once the question of applicability has been cleared up, I turn to how antitrust law could be applied to anticompetitive practices. To this end, I begin by looking at collusive practices, whether they concern the blockchain itself (Chapter 8) or make use of the blockchain to affect the “real space” (Chapter 9). 1 explain that these practices tend to centralize decision making power and thus contribute to the “artificial” centralization of different levels of block- chain ecosystems and the economy.

Part 2 closes by examining abuses of market power. I first show that the analysis of market power on blockchain raises several difficulties, and I offer suggestions to overcome them (Chapter 10). I then analyze the practices that may result from such power and show that they are heterogeneous (Chapter 11). I draw a risk map. Finally, I conclude by studying different forms of blockchain concentration (Chapter 12). I draw a distinction between hostile and mutually agreed concentrations and explain how these may recentralize blockchain.

6. The theory of the firm

1 LEGAL FICTIONS

The concept of “legal fiction” is central to all legal systems, although regulation and court decisions refer to it only infrequently. I first explain its meaning by taking a brief detour through... trees and forests. I then show why it is useful for the present study.

1.1 Trees as a Legal Fiction

Christopher D. Stone is a law professor in the United States. In 1965, after a stint at the University of Chicago,1 he joined the University of Southern California Law School, where he taught several subjects, including public international law and property law. One day in the fall of 1971, as he was nearing the end of a class, he asked his students the following question: “What would a radically different law-driven consciousness look like?” As he walked out of the classroom, down the corridor to his office, he wondered why he had asked such a strange thing. “How could a tree have rights,” after all? Days went by, and still he continued to wonder. He soon became convinced that the answer to his question should be positive and decided to make it known.

In October that same year, he got in touch with the Southern California Law Review's editor in chief. The Supreme Court had taken up a case, Sierra Club v. Morton, that touched upon his question. Although Stone did not think he would be able to publish his article before the case went to trial, he hoped that Justice William O. Douglas - who had agreed to write the preface to a symposium issue of the Review - would at least see the draft of his article. His strategy paid off. Although the Supreme Court decision did not follow his thesis, Justice Douglas wrote a dissent in which he held that: “Contemporary public concern for protecting nature’s ecological equilibrium should lead to the conferral of standing upon environmental objects to sue for their own preservation. See Should Trees Have Standing?”2 In 1974, Stone published a book in which he developed his theory further.

1.2 The Concept of Legal Fiction

Christopher Stone’s book is a pillar of modern thinking on the subject. Of course, the argument concerning what is a legal person - or a legal object to which rights are attributed - did not originate in the 1970s. Since medieval times, scholars have considered what rights should be attributed to corpo- rations3 - a debate they centered on the question of legal fictions. A “legal fiction” is presumably defined as a fact created by courts or legislation to help legal ruling.4 Stone poses three conditions for the creation of a new one:

They are, first, that the thing can institute legal actions at its behest, second, that in determining the granting of legal relief, the court must take injury to it into account; and, third, that relief must run to the benefit of it.5

A company meets these criteria. Legal systems have recognized them as a legal fiction for hundreds of years.6 Corporations are, in the words of John Sherman, “artificial person[s] without fear of death, without a soul to save or body to punish;”7 and yet they are at the center of our modern economies. Not only has the law “been able to exploit to its advantage and to maximize for its needs” the fact that corporations are persons; but also, they can file legal actions, suffer from damages and benefit from relief. One can find traces of that recognition in the Rolls of British Parliament in 1444: “they [the Master and Brethren of the Hospital] by that same name mowe be persones able to purchase Londez and Tenementz of all manere persones.” Here, the Hospital was recognized as a legal fiction.

As for the process of establishing legal fictions - once the criteria are known to be met - three methods have been used,8 whether by the courts (in common law) or by the legislature (in civil law). The first is by assertion, where one thing is declared to be true. For instance, one may say that corporations are persons. The second is by assumption - more specifically, by an irrefutable presumption that may morph into a legal fiction. For instance, one may say that corporations are presumed to be persons. The third is by deeming. Here, X is deemed to be Y, which creates a disconnect between the reality before deeming the fact, and after.

1.3 Legal Fiction and Blockchain

If legal fictions are so convenient, why not create a multitude of them? The first objection is the necessity to agree on the desirability of the objective they ought to achieve. When courts use legal fictions to deny minorities their fundamental rights, the objective is achieved, but society does not come out better.9 The second objection relates to the balance of power. Bentham called legal fictions “the stealing of legislative power” when courts create them. The third objection relates to the difficulty of creating a coherent legal system. Companies are legal persons, and although they can be charged with criminal activity, these crimes are committed by physical entities (persons). One must therefore put in place adequate measures to ensure that any illegal activity by a firm can be put to an end (that its perpetrators cease to act). The fourth and final objection concerns the systematization of the law. The creation of legal fictions leads to the elimination of case-by-case analysis, at least partially. For instance, a firm will always be a legal person. That may create difficulties because it entails giving the firm all the fundamental rights given to us, humans.

On the other hand, creating legal fictions significantly improves legal certainty. First, this applies to the entities directly concerned, which as legal fictions may bring actions under their own name and can thus be compensated for any damage they might unjustly suffer. It also creates legal certainty for all those who interact with these legal fictions, as trading partners can indeed bring legal actions against them. It helps when legal fictions rather than individuals benefit from illegal practices and cases where several individuals are responsible for a behavior. In short, although the creation of legal fictions is an exercise that requires precision, it unlocks a range of potential interactions that can greatly benefit society.

I intend to explain that creating a new legal fiction for blockchains is essential to their decentralization. I have argued that decentralization is the capacity of subjects to determine their competence. That requires recognizing their legal existence before transferring such capacity. Doing so will also allow them to introduce proper legal actions and prevent illegal behaviors being turned against them.

2 THE FIRM IN ANTITRUST

Antitrust’s most common legal fiction is the firm. That legal fiction has developed little since the 1930s and Ronald Coase’s work. For that reason, one may wish to understand its premises to get a grasp of modem antitrust law.

2.1 The Theory of the Firm

The economic literature regarding the emergence of firms emphasizes the importance of transaction costs and the ability to reduce them thanks to top-down control. To this day, that theory has provided the bedrock for modem microeconomic analysis.

2.1.1 Highlights of Ronald Coase’s article

In 1937, when he was 21 years old, Ronald Coase published “The Nature of the Firm.”10 It contains no mathematics and is just 20 pages long, but it remains one of the most-cited publications in economic theory today." One can hardly overstate its impact.12

In it, Coase sought to answer the following question: if markets are efficient, why do firms emerge? Coase responded simply and elegantly, stressing that firms make it easier to organize certain exchanges. Coase introduced the concept of transaction costs without naming it - referring to all the expenses the parties must incur to complete a transaction - and explained that firms exist to minimize these costs.13 Indeed, a transaction involves different costs - the costs of finding economic agents on the market, negotiating, drafting a contract and so on. By internalizing these various externalities, firms reduce the cost of economic transactions. Firms were thus seen as an institutional device for the first time.14 Coase opened the firm “black box.”15

He then explained why firms reduce these costs. His explanations came down to the power of command and control.16 Firms are hierarchically organized: orders and directions are given from the top and trickle down the hierarchy. This reduces the scope for costly opportunistic behavior that might otherwise make transaction unprofitable. Put differently, the reduction of these costs is often achieved by collaboration between employees, while market participants outside the firm are compelled to compete.

In Coase’s words, “in place of the complicated market structure with exchange transactions is substituted the entrepreneur-coordinator, who directs production.”17 Reductions of costs follow, as “by forming an organisation and allowing some authority (an ‘entrepreneur’) to direct the resources, certain marketing costs are saved.”18 Coase thus defines the “firm” as “the system of relationships which comes into existence when the direction of resources is dependent on an entrepreneur.”19 On the contrary, this kind of efficiency is not found in the market, where free economic agents compete under emergent orders. One can thus define the boundary between the firm and the market: where control stops, the firm’s perimeter stops.

Coase particularly emphasized the firm’s ability to deal with contingencies during the performance of a contract. While firms manage long-term relationships, the market mainly permits short-term contracts based on the price mechanism.20 Thus, Coase argued, “it seems improbable that a firm would emerge without the existence of uncertainty”21 in the market. This assumption is based on the theory of incomplete contracts, according to which the contracting parties cannot anticipate all the situations that may arise during their contract’s performance.22 The firm helps in creating a way to settle disputes, which as a result reduces all the upfront costs related to the management of potential conflicts. Here again, Coase put the firm’s ability to exercise control at the center of his demonstration. He was awarded the 1991 Nobel Prize in Economics for “his discovery and clarification of the significance of trans- action costs and property rights for the economy’s institutional structure and functioning.”23

2.1.2 Coase’s impact

Coase’s article put transaction costs at the center of modem economics, making them “the ultimate unit of microeconomic analysis.”24 Although Coase complained in 1988 that the concept was “largely absent from current economic theory,”25 it has transformed the perception of the firm from a pro- duction function into a governance structure.26

This transformation of economic thinking heavily influenced Oliver Williamson, among many others.27 He researched the optimal design of firms28 and helped to open the firm “black box” even further, putting the firm’s “control instruments”29 and the “means by which to infuse order”30 at the center of his analysis. Williamson was awarded the Nobel Prize in Economics in 2009.

Alternative theories to those of Coase have also developed. For instance, incentive theory portrays the firm as an incentive system that uses various instruments combining authority, ownership and compensation to ensure that all employees contribute their best to the firm’s interests.31 The theory holds that firms must adopt institutional arrangements that ensure survival by aligning these incentives. They are thus a nexus of written and unwritten contracts between different economic actors in which each contractual relationship is an agency relationship, whose optimal configuration must be discovered. According to the proponents of this theory, there is no difference in nature between firms and the market. Both are said to depend on contractual relationships that do not imply any exercise of authority or control. As I will explain, none of these alternative theories is currently being used in antitrust and competition law.32

2.2 A Pillar of Modern Antitrust

Although Coase’s theory was developed in the 1930s, modem antitrust is still constructed on the basis of this theory and has not adapted to changes in the nature of firms. Why is that? One may find a satisfying explanation in the fact that the nature of economic hierarchies has changed little to this day. Even the apparition of online platforms and aggregators has not changed the structure consisting of minimizing transaction costs thanks to vertical power. In a nutshell, Coase’s theory is here to stay. As a matter of fact, and as we are about to see, all modem antitrust case laws and regulations are based on the above-mentioned article, whether in the United States or Europe. More specifically, Coase’s theory helps point out where control is being exercised and, therefore, where the firm’s boundaries are. Antitrust and competition law applies to all entities defined accordingly.

2.2.1 The firm’s boundaries in antitrust and competition law

The Sherman Act in the United States and the TFEU in Europe are both the subject of extensive case law. The vast majority of the jurisprudence is not concerned with the question of the firm - that is, the person that is the subject of antitrust and competition law. The firm’s structure has transformed very little since the introduction of these two texts; it has become more complex, but has not changed in nature.33 For that reason, litigation generally involves other issues subject to further disagreement. Nevertheless, blockchain’s emergence forces us to reassess the definition of a “firm,” to analyze whether decentralized groups can be captured by antitrust law as currently conceived or if blockchains should be captured through another theory. In the United States, antitrust provisions apply to all “persons”34 affecting trade and commerce by unlawful restraints and monopolies.35 According to Section 7 of the Sherman Act:

the word ‘person,’ or ‘persons,’ wherever used in sections 1 to 7 of this title shall be deemed to include corporations and associations existing under or authorized by the laws of either the United States, the laws of any of the Territories, the laws of any State, or the laws of any foreign country.36

The text does not further define the term “person”; it simply establishes exemption regimes for which antitrust is not applicable - mainly concerning federal government agencies and instrumentalities.37

The case law is more informative. In *Copperweld*,38 the Supreme Court stressed that although “[n]othing in the literal meaning of [the Sherman Act] excludes coordinated conduct among officers or employees of the same company,”39 there is “general agreement that § 1 is not violated by the internally coordinated conduct of a corporation and one of its unincorporated divisions.” On that basis, the Court held that “there can be little doubt that the operations of a corporate enterprise organized into divisions must be judged as the conduct of a single actor,” therefore exempting these operations from Section 1 of the Sherman Act.

The Supreme Court was dealing with possible intra-group collusion for the first time with this decision.40 One can only guess what would have been its reasoning before Coase’s article (1937). The fact remains that *Copperweld* follows a Coasian logic:41 the firm uses vertical control to save transaction costs; antitrust law must recognize the fact and exempt from Section 1 of the Sherman Act all agreements between two legal entities bound by such a control relationship42 In the words of the Supreme Court:

The intra-enterprise conspiracy doctrine looks to the form of an enterprise’s structure and ignores the reality. Antitrust liability should not depend on whether a corporate subunit is organized as an unincorporated division or a wholly-owned subsidiary. A corporation has complete power to maintain a wholly-owned subsidiary in either form. The economic, legal, or other considerations that lead corporate management to choose one structure over the other are not relevant to whether the enterprise’s conduct seriously threatens competition.

In the end, “courts must examine whether the conduct in question deprives the marketplace of the independent sources of economic control that competition assumes” “when making a single-entity determination.”43 Only when “general corporate actions are guided or determined” by “separate corporate consciousnesses” can two entities be seen as two separate firms in antitrust law.44 One must make no mistake about it: only control makes the firm and defines its scope.45

In Europe, the theory of the firm as defined by Coase is also the basis of modern competition law.46 Article 1 of Protocol 22 to the European Economic Area Agreement defines the “firm” as “any entity carrying out activities of a commercial or economic nature,” but the concept is not properly delimited in the black letter of EU law. However, the case law defines “undertakings” as “every entity engaged in an economic activity, regardless of the legal status of the entity and the way in which it is financed.”47 The legal form of the entity offering the economic activity does not matter.48 In fact, as the CJEU made clear in Shell, “undertakings” are economic units rather than legal units.49 Here again, the concept of undertaking takes Coase’s path-breaking article as a starting point.50

That definition of the “firm” is still incomplete, as it does not define its boundaries. For instance, in Imperial Chemical Industries, the CJEU ruled that the degree to which it carried out “the instructions given” by a company was essential in analyzing the independence of a subsidiary; and that “where a subsidiary does not enjoy real autonomy in determining its course of action in the market,” the prohibitions set out in Article 101 of the TFEU were inapplicable.51 The CJEU further held in Akzo Nobel that “the actual exercise of decisive influence”52 defines firm limits in competition law; and that “it is sufficient for the Commission to prove that the subsidiary is wholly owned by the parent company to presume that the parent exercises a decisive influence over the commercial policy of the subsidiary.”53 In the end, a firm encompasses all the elements over which control is exercised, as in the United States.54 For instance, in Hydrotherm, the CJEU found that a natural person, a limited partnership and another undertaking made up a single economic unit when they were all controlled by the same natural person.55 That logic derives from Coase’s “The Nature of the Firm.”56

2.2.2 The firm as a pillar of antitrust and competition law

The definition of the firm’s boundaries helps in three fundamental steps of antitrust and competition law: (1) determining whether the law should apply; (2) assessing practices; and (3) and assigning liability. First, establishing the firm’s boundaries helps determine the extent to which antitrust and competition law applies. U.S. antitrust law provides several exemptions to different types of entities, which require both the identification of the firm and an understanding of its activities. European competition law applies only to undertakings that carry out an economic activity. Once again, it is then necessary to identify the firm’s boundaries to determine the activities carried out.

Second, establishing the firm’s boundaries is essential when agencies assess the legality of business practices.57 In terms of collusion, U.S. and European courts have recognized that two legal entities that are part of the same eco- nomic unit - that is, the same firm - cannot be held guilty of collusion, as one cannot agree with oneself.58 Antitrust prohibits several forms of cooperation outside the firm, while it always permits cooperation within the firm. The logic is similar in terms of monopolization and abuse of a dominant position. As a company cannot abuse its market power against itself, abuses of power are illegal only when they affect other firms. Above all, defining the boundaries of firms is essential to analyze market power (and thus whether Section 2 of the Sherman Act or Article 102 of the TFEU is applicable to a given case) and the ability to engage in anticompetitive practices. Control indeed confers the firm with the power to implement practices - including the ability to raise prices, which is often central in antitrust cases.

Finally, identifying the boundaries of firms is essential to assign liability.59 Liability for anticompetitive practices rests with the parent company that ultimately controls other entities if such control has been exercised.60 This logic stems from the classic distinction between ownership and control.61

It is safe to assume that antitrust law will capture the activities of blockchain participants at their individual level.62 For example, one could imagine that a miner is considered a company on his own; after all, miners are operating an economic activity. Nevertheless, analyzing whether the entire blockchain layer 1 could be deemed a firm for the purpose of antitrust law is essential if agencies are to understand and apprehend anticompetitive practices that are carried out beyond the simple framework of the individual. For example, suppose a blockchain is implementing practices to exclude another blockchain from the market. In that case, one will want to punish these practices rather than each individual action leading to the entire scheme. I will return to these practices in the coming chapters.

In other words, defining the firm’s boundaries is a necessary step in understanding competitive dynamics, in analyzing practices and eventually, in assigning antitrust liability to the blockchain when, as an entity, it seeks to achieve survival through anticompetitive ways. It is thus essential to carefully consider the elements that are taken into account when defining “firms” under antitrust law. I showed that in the United States, as in Europe, only one element matters: control. This reasoning is problematic when it comes to blockchain.

# 2AC

## FTC Cred ADV

### Solvency---AT: No Enforcement---Anonymity

#### Violators can be identified and prosecuted

Samuel N. Weinstein 21, Associate Professor of Law at the Benjamin N. Cardozo School of Law, “Blockchain Neutrality”, Georgia Law Review, 55 Ga. L. Rev. 499, Winter 21, Lexis

Blockchain technology does present certain non-antitrust-specific challenges to the legal system that antitrust enforcers and plaintiffs may have to contend with. Blockchain users sometimes protect their identities using pseudonyms, which may make identifying them for purposes of legal sanctions difficult. So far, this issue is more theoretical than practical, as researchers have demonstrated that most blockchain users' identities can be uncovered, 174 and prosecutors have successfully linked individual defendants to blockchain transactions. A high-profile example of law enforcement's ability to pierce blockchain pseudonymity took place in the trial of Ross Ulbricht, who was accused of controlling Silk Road, an online bazaar offering drugs and various illegal services. 175 Prosecutors produced evidence of transactions between bitcoin addresses in Silk Road's digital wallet and Ross Ulbricht's digital wallet, which the FBI found on his seized laptop. 176 Ulbricht was convicted and sentenced to life in prison for operating Silk Road. 177 Further, in what appears to be among the earliest antitrust cases filed in the blockchain space, a plaintiff was able to identify the defendants, who are individuals and business entities. 178 Undoubtedly, blockchain designers will continue to strive toward [\*542] true anonymity for users, but to date this threat appears overblown. 179

## OFF

### T---CWS---2AC

#### ‘Core’ antitrust are the big 3

Michael A. Rataj 21, PC, Law Degree from the Detroit College of Law, “Consequences for Breaking Antitrust Laws”, 5/12/2021, https://www.michaelrataj.com/blog/2021/05/consequences-for-breaking-antitrust-laws/

The core antitrust laws are…

The three core antitrust laws are the Sherman Act, the Federal Trade Commission Act and the Clayton Act. The Sherman Act primarily prohibits unreasonable restraint of trade and monopolization. Those who are in violation of the Sherman Act may face hefty fines, up to $100 million, and up to 10 years behind bars.

The FTC Act prohibits unfair practices or acts and unfair approaches to harming competition. Only the FTC can file cases under this act. The Clayton Act is a catch-all that covers every practice not covered by the Sherman and FTC Acts. Then consequences for violations of both of these acts are usually civil in nature.

#### They’ve read Arthur backwards---new rationale is NOT core.

Thomas C. Arthur 9, L.Q.C. Lamar Professor, Emory University School of Law, “The Core of Antitrust and the Slow Death of Dr. Miles,” 2009, 62 SMU L. Rev. 437, <https://scholar.smu.edu/cgi/viewcontent.cgi?article=1359&context=smulr>

Alternatively, the Court could discover a new rationale for prohibiting simple RPM, which might impel it to clear up the confusion by closing the Colgate loophole. As described below,212 the Justice Department and Warren Court came up with two in the 1960s, dealer autonomy and "spurious product differentiation," and the Colgate and consignment loopholes were closed. But as we shall see, neither rationale was part of the core of antitrust and their pursuit imposed substantial costs to productive efficiency, which later Courts and enforcers have proved unwilling to pay.

#### ‘Scope’ is authority

William R. Johnson 89, Judge on the New Hampshire Supreme Court, Appeal of Rehabilitation Assocs., 131 N.H. 560, 565-566, 556 A.2d 1183, 1187, 1989 N.H. LEXIS 22, \*11-13 (N.H. April 7, 1989), 4/7/1989, Lexis

The board, however, refused to approve the change in site from Allenstown to Concord without first having an opportunity to review the final plan, because of its belief that such a change could constitute a change in scope. The board was particularly concerned that the change in site might affect various financial variables. Although the administrative interpretation of a statute is entitled to deference, it is not ordinarily controlling. N.H. Dept. of Rev. Administration v. Public Emp. Lab. Rel. Bd., 117 N.H. 976, 977, 380 A.2d 1085, 1086 (1977). With regard to CONS, the board was given the authority by statute to determine what information must be included in an initial application; the statute, however, expressly [\*\*\*12] designated when an applicant who has submitted a completed application or a holder of a CON had to go back to the board for approval. The interpretation of the word "scope" to some extent defines the board's authority. The board's interpretation of the "scope" of the project to include a change in the site without a [\*566] change in the service area, or a change in a financial variable without a substantial change in the total expected capital expenditure, does not comport with the ordinary meaning of that term, and serves to expand the board's authority beyond its statutory limits. See Social Security Board v. Nierotko, 327 U.S. 358, 369 (1946); see also Hamby v. Adams, 117 N.H. 606, 609, 376 A.2d 519, 521 (1977) (even longstanding administrative interpretation of statute not controlling if contrary to express statutory language). We hold that a change in the site of a facility without a change in a factor affecting the "scope" of the project, as defined here, does not require prior board approval. Our decision is not intended to prevent the board from requiring the filing of a "change of scope" in accordance with RSA 151-C:12, [\*\*\*13] IV-a (Supp. 1988), effective June 1988, if any documents or materials submitted to it indicate that the change in site has changed the "location", "nature" or "scope" of the project as those terms must be understood.

#### ‘Expanding’ increases the area covered

Cesar A. Noble 17, Judge on the Connecticut Superior Court, Hartford Judicial District, 777 Residential, LLC v. Metro. Dist. Comm'n, 2017 Conn. Super. LEXIS 4178, \*4-5 (Conn. Super. Ct. August 1, 2017), 8/1/2017, Lexis

The defendant relies upon §7-249 as authority for the supplemental assessment. The statute provides that "[b]enefits to buildings or structures constructed or expanded after the initial assessment may be assessed as if the new or expanded buildings or structures had existed at the time of the initial assessment." The parties dispute whether the conversion of the property constitutes a construction or expansion of buildings or structures granting authority to the defendant to levy a supplemental assessment. The plaintiff argues that because the conversion did not constitute an expansion, that is, an increase in the volume or physical area of a building the defendant had no authority under §7-249 for the supplemental assessment. 5 In the view of the plaintiff it is significant that the conversion did not increase the physical footprint or interior square footage of the property in any way including by a vertical [\*5] enlargement. Absent such an increase, asserts the plaintiff, there can be no construction or expansion of any building or structure. The defendant assert that the construction of the 285 new residential units constitute new structures within the plain meaning of §7-249. The court agrees with the defendant.

[FOOTNOTE]

5 The plaintiff relies upon the definition of the word "expand" found in Merriam-Webster's Collegiate Dictionary (10th ed. 2002) of "to open up; to increase the extent, number, volume, or scope of."

#### ‘Expanding the scope’ increases the general range to which antitrust applies. Their distinction is totally arbitrary.

Christopher L. Sagers 21, James A. Thomas Distinguished Professor, Cleveland State University. Law & Faculty Director, Cleveland-Marshall Solo Practice Incubator, "Sagers Email," JDi Debate, December 2021, https://jdidebate.blogspot.com/. brackets inserted for readability.

Jordan Di <jordandi505@gmail.com>

Fri, Dec 3, 11:17 AM

to C.SAGERS

Hi Jordan!

It's very nice hearing from you, and I'm sorry I'm just getting back to you. Your question was stimulating for me to think about, and I'm glad you've had a chance to review and think about that old book I edited.

So, I wound up writing a really long answer that I am afraid will be counter-productive. It seems very possible that you are asking a much simpler question than I thought, and I just misunderstood it. I'm sorry if that's the case, but the following is what I've got to share.

It turns out I've heard about this competition and its reliance on that book, but only because another participant also asked me for clarification. I wasn't involved in setting up the competition or designing the resolution, and questions from participants were the first that I heard anything about it. I also should say that I've never participated in debate and don't know anything about it, so I don't know how useful the following feedback will be.

But I will confess that I don't think the resolution was a very good idea, at least not as it is written.

A. What I Really Think

To me, the problem is that this idea of the "scope" of antitrust has no established legal meaning and very little practical significance. It isn't used in actual practice and it would have no real, legal significance in any actual antitrust case. It was a convenient shorthand that I came up with for organizing the materials in that book, and it also had one theoretical value to me, but that's it. Most antitrust lawyers I've worked with understand it what I meant by it, but it doesn't have any precise meaning or doctrinal significance. I don't think the term was even really used before that book. I almost literally made it up.

So, it sounds like participants in this competition are getting hung up on whether particular exclusions from antitrust liability are issues of "scope" or issues of something else, but I don't believe there is any good reason to worry about it. It almost literally doesn't matter, except maybe in the one theoretical sense that I mentioned. (I'll say something about that in a second.) For example, you mentioned the "investment" exception from the Clayton Act, and you ask whether it should be thought of as a "limit" on the "scope" of antitrust. But I find myself asking . . . so what? What difference would it make if that is a matter of "scope" or it is something else?

Moreover, what even is a "scope" issue? If antitrust is held not to apply in a given case, is it because that conduct was beyond the "scope" of antitrust, or was it because, even though antitrust applied to the challenged conduct, the conduct just wasn't illegal? For example, say that a manufacturer enters into an exclusive distribution agreement for 6 months with a distributor, prohibiting the distributor from carrying the products of a competitor. Contracts like that are so plainly not illegal--because it is for such a short period of time--that some lawyers say they are "per se legal." So, are 6-month exclusive distribution contracts outside the scope of antitrust, or are they subject to antitrust but legal? We could ask the same question about investment purchases under the Clayton Act. They are automatically legal so far as [Section 7] s. 7 is concerned. But does antitrust not apply at all, or does antitrust apply and just hold those purchases legal?

(I can answer these questions for myself, because I have a working definition of my own of what "scope" means. In my mind, the manufacturer and its sales are subject to antitrust, because it is exchanging a thing of value for money, but not all of its conduct is illegal. Likewise, I think of purchases of stock as always being subject to the Clayton Act, but sometimes legal under it. But my working definition in itself has no legal or policy significance, really.)

Like I said, I did have one theoretical purpose for thinking about antitrust "scope" as one, unified doctrine, and encouraging other lawyers to think of all the various doctrines that govern antitrust applicability as one doctrine, that should be made theoretically coherent. But the purpose I had in mind was different than what participants in the competition seem to be thinking about.

I thought that thinking of a "scope" of antitrust could force judges and lawyers to think more coherently or holistically about the several different doctrines that can be used in particular cases to exclude conduct from antitrust applicability. It would make them think about the fact that the different doctrines often clash with one another theoretically--they generate different results on similar facts for no good reason. As one example, the McCarran-Ferguson Act mostly exempts insurance from federal antitrust so long as a given insurance company's conduct is subject to some state legal requirements in a given case. Courts typically don't require active state oversight of the company in order for MFA immunity to apply. The question is just whether there is some regulation. But in non-insurance cases, the mere fact that a defendant is subject to some state law is definitely not enough to exempt it from antitrust. Usually, in those cases, the so-called "state action immunity" requires that a state statute explicitly authorizes the challenged conduct and​ a state actor actively oversees it. So very similar cases could come out with opposite results for no better reason than that one case involves insurance and the other does not.

But a problem, as you might see from this example, is that thinking through the differences in different scope doctrines gets extremely​ complex. Just that one example requires you both to really understand the McCarran-Ferguson Act and its caselaw and​ the law of state action immunity, and​ have a reasonable understanding of substantive antitrust in general, before you can even reasonably think about whether and how the doctrines should be revised for greater coherence. Because I think most practicing antitrust lawyers would find that a challenge, I can't imagine how non-lawyer undergraduate debate competitors are supposed to do it.

OKAY, so, all of that said, I would like to add one other sense in which it does actually kind of matter in real cases whether a legal rule goes to the applicability of antitrust or merely goes to the legality of the underlying conduct. As I'm sure you know, lawsuits can be dismissed before they go to trial. If a defendant moves to dismiss and persuades a court that antitrust doesn't even apply to the defendant's conduct, then the case can be dismissed at a very early stage in the litigation. If the court believes that antitrust applies to the defendant's conduct, but there is some substantial reason to believe that the conduct doesn't violate antitrust, then getting pre-trial dismissal will probably take longer and be more difficult. Real-world parties care about this kind of thing a lot​, because getting early dismissal is much cheaper for defendants and leaves plaintiffs with much less hope of securing any sort of settlement. But I can't believe that procedural niceties like that are actually of interest in your competition.

So, with my apologies, I think it would have been a lot better if the organizers of the competition wrote the resolution in a way that is much more specific. It should have asked something like, "should federal antitrust prohibit XYZ conduct by online commerce platforms" or something like that. Just asking whether the "scope" should change is hardly asking any question at all, because the word has so little clear meaning or significance.

B. What Is Probably More Useful

All of that was probably not hugely useful to you, since it's my background navel-gazing.

I hope the following might be more practical advice, though again I was never involved in debate, so you'll have to be the judge of whether it's useful or not.

If I were to talk about the resolution you quoted, I would begin by saying what I mean by the "scope" of antitrust. To me, it means the general range of conduct to which the Sherman, Clayton, and FTC Acts apply, which roughly means exchanges of things of value within the domestic United States and imports. That is very broad, but then I would point out that that scope is and always has been riddled with specific exceptions. And then I would say that I do (or do not) favor reining in those exceptions. That is, I wouldn't argue about "scope" in some abstract sense, and instead would say that we should read all of the existing exemptions as narrowly as possible. You wouldn't necessarily have to argue about individual exemptions, although discussing particular examples might be helpful. Anyway, to argue that I favor narrowing the existing exemptions, I would point out that when antitrust applies to particular conduct, it effectively requires that conduct to be regulated by the ordinary market forces of capitalism. It requires leaving that conduct to the whims of supply and demand, without interference from private agreements, exclusionary conduct, or anticompetitive consolidations. I would argue that that is generally a good thing--markets do a pretty good job of allocating resources, and ordinarily work better than either government or private intrusions. If you were going to make that kind of argument, you would say that we should generally narrow and limit all those dozens of statutory and caselaw rules that say that antitrust should not apply to particular cases. We should make it really hard, in all cases, for defendants to argue that their conduct should be exempt from antitrust. (Btw, that is nominally what the courts say. Though they now honor it only in the breach, the courts still constantly repeat rote platitudes that markets are great, Congress wants markets to regulate conduct without the interference of private parties, and for those reasons that all exemptions and immunities are narrowly applied.)

If I were required to argue that I disfavor it, I would say that in fact the forces of supply and demand are often ill-suited to regulate particular kinds of conduct. I don't personally believe that, but it's an easy enough argument to make. You say that markets are clumsy, that they have negative and unanticipated consequences in all kinds of ways, and so we have to apply antitrust carefully. You would argue that we should make it relatively easy for a defendant to say that in a particular case it should enjoy protection under some statutory exemption or the statute action immunity or the labor exemption or whatever, because imposing antitrust and the full force of unbridled price competition often harms other values that we care about.

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So, I have a bad feeling that this is too long, too beside the point, and to confusing, and I'm afraid I may have done more harm than good. I hope that some of it was helpful to you, and if I can be of any more help, I will try.

Best of luck to you, and thanks for reaching out.

Chris

### Nucleus PIC---2AC

#### The required ‘proportional liability’ is antitrust!

Peder Østbye 21, special advisor at Norges Bank, Lecturer at the University of Oslo, Lawyer at Advokatfirmaet Simonsen Vogt Wiig AS, “Who Is Liable for a Cryptocurrency System Chain Reorg?,” SSRN Scholarly Paper, ID 3760427, Social Science Research Network, 01/05/2021, papers.ssrn.com, doi:10.2139/ssrn.3760427

Although legal theories may be constructed to hold decentralized participants performing system functions liable for a chain reorg, the decentralized nature of cryptocurrencies may raise obstacles. A question is whether any participant can be considered causally responsible for such a reorg, given that no particular participant is necessary for the functioning of the network according to the design characteristics of a cryptocurrency system. If the system is de facto centralized by a single agent or entity controlling protocol development or a network function (for instance, a transaction validator controlling most of the hash power or stake needed to perform this function), this agent will face difficulties by hiding behind the decentralized design characteristics as such to evade liability.

Things get more complicated when the system is in fact decentralized and the participants can claim that their action alone has no causal influence on the outcome, making it difficult to single out one wrongdoer to hold accountable and liable. This raises causal issues, which will be discussed further below, and issues related to liability for joint activity. A possible solution to this is to construct entities as legal persons and make the entity liable. This solution has a long tradition in corporate law in the sense that corporations can be legal persons subject to liability, albeit often limited liability. Another solution is to consider participants of some joint activity working toward a joint purpose an entity and make each agent jointly liable for this entity. Since the construction of legal entities as legal persons requires legislation and ex ante capital setups, a solution where individual agents are liable for the activity of an entity seems more adequate to address joint liability of decentralized participants.

Both criminal law and tort law entail general principles that make agents jointly liable. In criminal law, some conspiracies to commit crime and aiding and abetting a crime may make all the agents liable for the whole enterprise. In tort law, certain wrongs committed by multiple wrongdoers may make all the wrongdoers jointly liable to the victims. In antitrust, for instance, all participants in a cartel may be jointly liable to victims. In some cases, partnership law establishes joint liability among the partners for joint activity performed by the partnership. In many jurisdictions, the establishment of a partnership where partners are jointly liable does not require any formal registration or formal requirements to be established. Rather, it is up to the courts to decide whether a certain organizational setup qualifies as a partnership. However, many organizational setups where the agents are working for a common purpose are not likely to qualify as partnerships. In such a case, organizational innovations may be necessary to identify a group.

#### 3. Liability’s not possible without it

Dr. Thibault Schrepel 21, PhD in Antitrust Law from Université Paris-Saclay, LLM in International Law and Legal Studies from the Brooklyn Law School, Associate Professor of Law at VU Amsterdam University, Faculty Affiliate and Creator and Director of the Computational Antitrust Project at the Stanford University CodeX Center, Blockchain + Antitrust: The Decentralization Formula, p. 131

4.2 Anticompetitive Practices

The theory of granularity enables agencies to analyze the effects of practices by recreating an “inside” and “outside” (the nucleus), which is essential for antitrust analysis. Ultimately, it enables them to assign liability to the nucleus while also granting rights to its participants.

4.2.1 The assessment of practices

Firms decide internally to partake in collusive agreements or monopolization practices, but antitrust law is mostly concerned with such behavior’s external effects.88 That distinction between the effects inside and outside the firm guides the analysis of all potential practices. This prevents the application of antitrust law to public permissionless blockchains. The absence of clearly defined boundaries for such blockchains at the platform layer precludes a distinction between what is inside or outside. Analyzing practices within blockchain ecosystems becomes immensely complex for that reason.

The delimitation of a blockchain nucleus reintroduces the possibility of analyzing internal and external effects, since it recreates borders - namely, inside and outside the legal fiction. One can easily understand this through the example of collusion. As entities cannot collude with themselves, one needs to delimit their boundaries to analyze whether a collusive practice has occurred. In that regard, only agreements between two different nuclei should be worrisome. Agreements between blockchain participants outside of any nucleus, de facto lacking any ability to control, should not trigger antitrust concerns. The same goes for monopolization and abuse of dominance cases. The theory of granularity makes it possible to define a legal fiction whose market power will be assessed in relation to others. In turn, this enables agencies to determine whether a legal fiction abused its power by analyzing the external effects of its behavior. This analysis is not possible when blockchains are seen only from a distance, because blurry decentralized entities in which no one exercises a power of command and control have no visible frontiers. The theory of granularity fixes that.

#### Evidentiary barriers will be overcome

Dr. Thibault Schrepel 19, PhD in Antitrust Law from Université Paris-Saclay, LLM in International Law and Legal Studies from the Brooklyn Law School, Associate Professor of Law at VU Amsterdam University, Faculty Affiliate and Creator and Director of the Computational Antitrust Project at the Stanford University CodeX Center, “Is Blockchain the Death of Antitrust Law? The Blockchain Antitrust Paradox”, Georgetown Law and Technology Law Review, 3 Geo. L. Tech. Rev. 281, Spring 2019, Lexis

2. What Remains Possible: Law is Code in Practice

Allowing blockchain technology to emerge does not mean that nothing should be done about the illegal practices implemented on it.

First, it should be stressed that in some situations, the identities of users engaged in anticompetitive practices will be reported to antitrust authorities, despite the pseudonymity principle of blockchain. Such a situation arises when the real-life identity of that user is known to other blockchain users. Accordingly, one might imagine a situation in which a company that is part of the production chain where an anti-competitive practice took place, or even an end-consumer, introduces an antitrust complaint. Thus, blockchain and pseudonymity do not protect blockchain users against all types of detection and identification. In fact, the anticompetitive effects caused by one practice on the market may also lead [\*332] an antitrust authority to launch an investigation. 224 Here, a "law is code" approach is not necessary.

### Biz Con DA---2AC

#### No spillover---blockchain is siloed from other areas

Jiang Jiaying 20, LLB, LLM, SJD, incoming Hauser Global Fellow at NYU School of Law and Co-Leader of the Central Bank Digital Currency Project with the Paul Tsai China Center at Yale Law School, “Regulating Blockchain? A Retrospective Assessment of China's Blockchain Policies and Regulations”, Tsinghua China Law Review, 12 Tsinghua China L. Rev. 313, Lexis

Under the direction of the national policy objective on technology, blockchain-related policies and regulations pursue the same path of innovation. Technology innovation in the blockchain field possesses distinctive implications owing to the novelty of blockchain and its implementations. Thus, three secondary policy objectives unique to blockchain characteristics are: (1) [\*345] building a blockchain ecosystem connecting everything in cyberspace; (2) standardizing the blockchain industry; and (3) acquiring leading innovation capacities for blockchain.

#### There’s a blockchain crackdown now that’s shredding confidence

Kellie Mejdrich 21, Senior Reporter at Law360, Financial Services Reporter at Politico, BA in Journalism from the University of Arizona, “‘Massive Wake-Up Call’: Crypto Faces Growing Legal Crackdown”, Politico, 8/17/2021, https://www.politico.com/news/2021/08/17/cryptocurrency-legal-crackdown-505595

Federal regulators are pursuing cryptocurrency startups in court and striking a growing number of legal settlements for rule violations, triggering complaints from the industry and sympathetic lawmakers who say it threatens a growing sector of the economy.

Over the past month alone, the Securities and Exchange Commission, the Commodity Futures Trading Commission and the Treasury Department announced more than $120 million in penalties aimed at digital currency exchanges and other service providers that officials said weren't complying with federal markets regulations and anti-money-laundering requirements. Several states also escalated their own crypto enforcement crackdowns this summer.

CFTC Commissioner Dan Berkovitz said in an interview that some cryptocurrency companies believe "the rules don't apply to them." He said regulators are now vigorously pursuing legal action to protect customers, ensure market integrity and prevent systemic risk. SEC Chair Gary Gensler also warned this month that crypto was rife with "fraud, scams and abuse" and that his agency was prepared to use its authorities "as far as they go" to police the market.

"This should serve as a massive wake-up call to the crypto industry," said Charley Cooper, a former CFTC chief operating officer now with software and blockchain technology firm R3. "A policy or a posture of ignoring Washington or showing disdain for Washington ... will ultimately be a failed strategy."

The enforcement actions are fueling debate about how cryptocurrency players fit into financial regulations. Federal regulators say the new digital currency platforms must adhere to existing rules, but industry players counter that it's not that simple and that it's time for Congress to pass new laws that are more tailored to crypto.

"This regulation by enforcement that we're seeing is not the way to go because it doesn't create good policy," said Kristin Smith, who advocates for the cryptocurrency industry as executive director of the Blockchain Association. "Regulators — in particular the SEC — think that the laws and regulations are crystal clear and that they're very easy to interpret. But for those of us on the other side of the table that are working in the industry and its ecosystem, the laws aren't clear, and it's very difficult to figure out how to apply them."

The market value of Bitcoin and other digital currencies hit $2 trillion again this week, meaning the stakes have never been higher for companies looking to enter the space. The movement has also spawned a whole sector of decentralized finance applications — so-called DeFi apps — that offer automated, autonomous trading and lending services with minimal human interaction. One such DeFi service, Poly Network, disclosed losing $600 million in a breach earlier this month.

Regulators in recent weeks have made clear they’re zeroing in on crypto exchanges and DeFi platforms.

Two high profile cases in August — a $100 million CFTC and Treasury settlement with crypto derivatives service BitMEX and a $10 million SEC settlement with digital asset exchange Poloniex — revolved around charges that the companies were operating unlicensed trading platforms. Another SEC settlement this month with decentralized lender DeFi Money Market accused its backers of selling more than $30 million in unregistered securities using so-called smart contracts and DeFi technology.

Some of the targeted crypto companies are trying to signal that they now take the rules more seriously. BitMEX CEO Alexander Höptner said in a blog post after his exchange's settlement that "crypto is becoming more responsible."

"We are committed to becoming a regulated exchange and are looking to set the benchmarks in this new era for crypto," said George Godsal, spokesperson for BitMEX operator 100x.

The federal cases came as five states including New Jersey, Texas and Kentucky took action against the startup BlockFi for offering interest-earning accounts that regulators say could be unregistered securities products.

BlockFi spokesperson Madelyn McHugh said the company believes its products and services are lawful and appropriate for crypto market participants, and that "we remain steadfast in our commitment to protect consumers’ rights to earn interest on their crypto assets."

"We’re hopeful that BlockFi will lead the charge in collaborating with regulators to define a regulatory path for our ecosystem going forward," McHugh said.

Lawyers tracking the cases said they showed that, even though some digital assets businesses assert certain laws don't apply to them, that doesn't stop the government from taking action.

"We've all been telling our clients and we've been telling people publicly for years that just because you come up with some name for something doesn't mean that the laws don't apply," said Stephen Palley, partner at the law firm Anderson Kill.

Vincent McGonagle, the CFTC's acting enforcement director, said in a statement that "there is a strong need for regulatory compliance in the digital asset market space and for bad actors to be identified and held accountable."

"The CFTC will continue to use the tools available to us to the fullest extent possible to closely monitor these evolving markets," McGonagle said. "The recent resolution with BitMEX and other enforcement actions by the commission, including those in the spot markets for digital assets, reflect our strong commitment to aggressively pursue actionable conduct within our jurisdiction."

Davis Polk partner Robert Cohen, former chief of the SEC's cyber unit, said that agency has taken an active approach to crypto enforcement since 2017, and it's no surprise it's continued under the Biden administration.

One of Trump-era SEC Chair Jay Clayton's final actions at the helm of the agency last December was to sue financial technology startup Ripple for allegedly selling unregistered securities in the form of the XRP cryptocurrency. The move triggered litigation between the SEC and Ripple that continues to this day over the extent to which digital currency should be regulated as an investment product.

"A question going forward is whether there will be progress on rulemaking and guidance for the community that provides the clarity and certainty needed to operate within the SEC’s regulatory system," Cohen said.

Some lawmakers are beginning to push back on the enforcement crackdown and warn there is an urgent need for Congress to draft new rules for the industry's business model.

Rep. Patrick McHenry of North Carolina, the top Republican on the House Financial Services Committee, said "regulation through enforcement hinders innovation."

"It's creating uncertainty in a really important and growing industry in the United States and globally,” McHenry said in an interview. “If we don't bring regulatory clarity here in this space, it's going to go to other regimes around the world that are more conducive for its development."

Rep. Don Beyer (D-Va.) has introduced legislation that would require the CFTC and SEC to issue new cryptocurrency rules. His bill would give the CFTC — which today regulates derivatives linked to things like oil and also fiat currencies — authority over digital assets. It would give the SEC — the U.S. stock market regulator — authority over digital asset securities.

McHenry has also proposed a bill that would convene a working group between the SEC, CFTC and industry to report on cryptocurrency regulation.

"The lack of legal clarity has hindered investment and innovation, and Congress should provide clear rules of the road for this growing market," Beyer said in a statement.

#### The plan signals intent to go narrow by targeting the root layer AND only the nucleus, a subset of the chain that demonstrates technical competence AND is welcomed by users who hate anticompetitive exclusion---that’s Schrepel.

[1AC SCHREPEL – FOR REFERENCE]

Enforcement is the second pillar of a collaborative approach between law and tech, antitrust and blockchain. I realize that this may seem counterintuitive; enforcement is, by definition, confrontational. In reality, distinct types of enforcement can lead to varying degrees of confrontation: some harm the entire blockchain, while others target the sole perpetrators of illegal practices. One should avoid the former, as it would reduce blockchain’s usefulness and thus deprive policymakers and regulators of an important ally. It is in the interests of both communities to encourage the latter.

AND

The second category concerns practices that centralize blockchain ecosystems artificially. More specifically, agencies should target practices that centralize the infrastructure level of a blockchain. As I have explained, that level has a critical influence on the decentralization of other levels. Prohibiting artificial forms of centralization at that layer will free most of the ecosystem from coercive forms of power. In doing so, it will make blockchain a more potent ally to antitrust law. Furthermore, this type of enforcement will prove increasingly important over time. If blockchain adoption continues to increase, it could very well become a key infrastructure for the world economy. At that point in time, the artificial centralization of blockchain will become antitrust agencies’ top enforcement priority.

Overall, directing enforcement activities toward these two types of practices would free blockchain, and its economic ramifications, from the most restrictive practices without diminishing its usefulness or creating resentment within blockchain communities. Antitrust would thus become the ally of blockchain ecosystems and would start being perceived as such.

#### It’s a surgical approach that leaves most conduct to self-regulation---that reverses the perception of overreach

Dr. Thibault Schrepel 21, PhD in Antitrust Law from Université Paris-Saclay, LLM in International Law and Legal Studies from the Brooklyn Law School, Associate Professor of Law at VU Amsterdam University, Faculty Affiliate and Creator and Director of the Computational Antitrust Project at the Stanford University CodeX Center, Blockchain + Antitrust: The Decentralization Formula, p. 240-244

3.2 Law + Code

3.2.1 Why together?

We are facing a conundrum. On the one hand, blockchain architecture requires us to find ways to prohibit illegal behaviors (and only those). On the other hand, confrontational law may hamper the technology and therefore reduce the common good or stay ineffective. It is crucial that we find a way around this conundrum. Blockchain code reveals, probably more than ever, the need for collaboration between law and technology: between policymakers, regulators and blockchain communities. This may spark a pivotal moment in legal history, forcing the creation of a new paradigm that leads to the emergence of hitherto unexplored synergies.29

If they work together, these two communities can put in place mechanisms to stop and punish anticompetitive practices once committed by creating a way for legal enforcement instead of trying to prevent all illegal practices from happening in the first place.30 That requires us to find a way for blockchain communities, alongside the regulator, to take practical actions when necessary and give them incentives to do so.

The code that underlies blockchain ecosystems is an ideal candidate to achieve this aim. Code is the language of technology and the principal determinant of behavior within a digital ecosystem. The maxim “code is law” describes that reality.31 As I have explained, blockchain’s architecture creates trust between participants. It is the same architecture that can build “too much trust,” leading to illegal practices because it creates (a sentiment of) impunity from the law. The occurrence of these practices therefore implies that one must adapt the architecture. If policymakers and regulators want the help of blockchain communities, they must translate the law into code so they can implement it and monitor its application.

This is the “law is code” ex-post approach I am arguing for,32 which I distinguish from other “law is code” ex-ante solutions that lead to the prohibition of practices before they even occur or automatic enforcement by code.33 In practice, ex-ante solutions suffer from the rigidity of code language and, above all, from our cognitive and imaginative limits.34 Instead, the “law is code” ex-post approach I am offering relies on, and allows, other constraints (law, market, norms) to play a part in deterring most illegal practices; and, when implemented, creates a gateway for legal enforcement.

3.2.2 Blockchain code

The “law is code” approach I suggest strikes what I find to be a satisfying MOAF balance. In terms of accuracy, modifying code to allow other constraints creates few false negatives and even fewer false positives. There is no need for overreaching regulations or to break the blockchain door altogether. This “law is code” approach is more surgical. In terms of manageability, it gives power to blockchain communities which are the first to implement and enforce blockchain code. Policymakers and regulators will trust new blockchain architectures; only the costs of verification will remain.

In terms of objectivity for private actors, one can trust that blockchain communities will know the rules they enforce. The extent to which these communities should enforce the rules on their own, or with the supervision of regulators, is debatable (see below). In terms of flexibility, that “law is code” approach is non-coercive, as it is agreed upon, implemented and enforced by blockchain communities. The more significant the role of the community agreeing to enforce these rules, the less top-down and coercive they will become. In the end, there is every reason to believe that such as “law is code” ex-post approach will achieve proper deterrence. If mechanisms are in place to deter and punish illegal practices, and if blockchain participants are made aware of these mechanisms, then the number of such practices will be significantly reduced. Again, as Beccaria said:

one of the greatest checks on crime is not the cruelty of punishments, but their inevitability ... the certainty of a chastisement, even if it be moderate, will always make a greater impression than the fear of a more terrible punishment that is united with the hope of impunity.35

Two mechanisms can be used in that regard: a first that allows communities to discourage and sanction anticompetitive practices, and a second that enables courts and regulators to “enter” blockchains. Both come with specific challenges. The first will partially recentralize blockchain, but it proves to be best for “targeting.” The second requires participants to trust the rule of law on top of the rule of code, but maximizes “objectivity,” since the regulator has no financial interest in the blockchain, unlike the other participants.

4 CHAPTER SUMMARY AND BEYOND

In this chapter, I started by analyzing the new challenges that blockchain creates for policymakers and regulators. I showed that blockchain has singular characteristics that require specific regulations in response. In the absence of such regulations, blockchain creates a nearly impenetrable fortress. One must then find a solution to make the law applicable. With that in mind, I introduced four principles against which to assess potential regulation: (1) accuracy, (2) manageability, (3) objectivity and (4) flexibility. I explained that one cannot maximize them all at once, as significant tradeoffs are involved.

Against this analytical framework, I have assessed distinct types of regulatory approaches. I concluded that a classic confrontational approach would not lead to good results. I explained this confrontational approach would either threaten the survival of blockchain technology or simply prove to be ineffective. Conversely, when law and code are combined, the results are more satisfactory. This collaboration implies that blockchain communities and regulators must find common ground to introduce mechanisms that sanction illegal practices when they are committed and, even before that, prevent them from taking place by relying on other constraints. In the next chapter, I detail the terms of this arrangement and explore how blockchain communities would ultimately agree to take part in the “law is code” approach that I have advocated for.

1 A POSITIVE AGENDA

In this section, I introduce a positive agenda that would lead agencies to create comfort zones and to direct legal enforcements toward certain specific practices. The objective is to create the right incentives for blockchain communities to implement the “law is code” approach described in Chapter 13 - that is, translating the law into code in a way that opens up ex post enforcement. This approach would lead to a cooperative relationship between law and technology. The result would be better legal protection for blockchain communities (which would suffer from fewer anticompetitive practices) while ensuring blockchain creates a positive impact outside the ecosystem.1 But getting there will require mutual concessions.

#### The signal of a antitrust crackdown has already been clearly sent

Lina Saigol 1-19, Head of Corporate News, EMEA, Dow Jones Media Group, BA from McGill University, “Mergers Are Booming. U.S. Regulators Are Gearing Up to Crack Down on Them.”, Barron’s, 1/19/2022, https://www.barrons.com/articles/mergers-booming-us-regulators-crackdown-51642534456?tesla=y

Aggressive antitrust enforcement is back.

That is the stark message that President Joe Biden has sent the business community, and regulators have already kicked into action, threatening to rein in a record-setting merger boom.

Those charged with delivering Biden’s message are two Big Tech critics: Lina Khan, chair of the Federal Trade Commission, and Jonathan Kanter, head of the Justice Department’s antitrust division. On Tuesday, they outlined a plan to revise how the agencies will review mergers. They want public comment on how to update federal guidelines “to better detect and prevent illegal, anticompetitive deals,” they said in a statement.

“Our country depends on competition to drive progress, innovation, and prosperity,” Kanter said. “We need to understand why so many industries have too few competitors, and to think carefully about how to ensure our merger enforcement tools are fit for purpose in the modern economy.”

That is due in part because the FTC is constrained by limited manpower and budget. Also, regulators don’t have authority on their own to block a merger—federal judges can issue orders blocking it.

“Of course there has been an increased level of scrutiny and managements and boards have raised the bar on what they will consider, but we will continue to see large deals with compelling strategic imperative,” Bruce Evans, global co-head of M&A at Deutsche Bank , told Barron’s.

In December, the FTC sued to block computer-chip powerhouse Nvidia (ticker: NVDA) from spending $40 billion for British technology provider Arm, saying the blockbuster deal would unfairly stifle competition.

Just weeks earlier, the Justice Department sued to halt a proposed $2.2 billion tie-up between publishers Penguin Random House and Simon & Schuster, which would create a mega-publisher in the books market. The agency argues that consolidation would hurt authors and readers.

The lawsuits come after Biden signed a sweeping executive order in July aimed at curbing the power of big business by cracking down on anticompetitive practices in sectors ranging from agriculture to pharmaceuticals to labor.

#### Expanding blockchain massively boosts the economy

Kieran Brown 19, Senior Managing Consultant in London with the Berkeley Research Group, Michael Jelen, Director in the Global Applied Technology Practice at the Berkeley Research Group, and Nabil Manzoor, Director of Health Technology at PwC, “Blockchain Could Unleash Economic Growth—But Only if Governments Step Up with Clear Policy and Leadership”, ThinkSet Magazine, 6/27/2021, https://thinksetmag.com/insights/blockchain-econ-growth

Blockchain Could Unleash Economic Growth—But Only if Governments Step Up with Clear Policy and Leadership

The technology could revolutionize security and transparency, but only if we trust it. That’s where the government comes in.

Blockchain has a trust problem. Or, at least, a *perceived* trust problem.

A decade after the ascents of Bitcoin and later Ethereum, the technology behind those cryptocurrencies—blockchain, a distributed electronic database that records and automates transactions—is still widely misunderstood among the public and even within boardrooms. It’s too often conflated with the unruly markets of cryptocurrencies, enveloping blockchain in a cloud of mistrust and confusion.

The perception that blockchain can’t be trusted is both unfortunate and inaccurate. It’s also preventing blockchain from achieving its potential as a technology that could radically improve transparency and security across a broad range of industries in the public and private sectors.

Getting past blockchain’s trust problem is the key to unlocking the technology’s enormous potential. And the best, fastest way to do that is through regulation and smart policymaking. That might sound like anathema to free-market hawks and cyberlibertarians, but proactive government involvement doesn’t have to be the government-dominated, centrally controlled nightmare they fear. Rather, it is the crucial ingredient needed to unlock this emerging technology’s potential, allowing innovation and business to flourish.

Blockchain beyond crypto

It’s ironic that blockchain, a technology designed to promote trust in transactions, still faces questions about trust. But it’s becoming increasingly clear that many trust issues facing blockchain stem from a lack of understanding.

What’s crucial for business leaders and the general public to understand is that blockchain technology completely transforms the concept of trust (for the better). Trust, of course, is an essential part of how economies and markets operate. It enables and facilitates transactions that create value. Therefore, through the lens of economic theory, blockchain represents a new way of answering an age-old question: How can we create enough trust to peacefully, efficiently enable parties to exchange something of value?

Blockchain is really just a distributed electronic database of transactions, individually secured with a mathematical signature (block) and then linked together (chain). As the MIT Technology Review editors put it, “blockchains distributed across thousands of computers can mechanize trust, opening the door to new ways of organizing ‘decentralized’ enterprises and institutions.” The potential to increase and mechanize the number and efficacy of trusted transactions is enormous. And the more transactions that can be verified (deemed trustworthy) and automated, the more economic opportunities will emerge.

Blockchain is really just a distributed electronic database of transactions, individually secured with a mathematical signature (block) and then linked together (chain).

Blockchain’s ability to enable the frictionless transfer of assets is revealing itself rapidly in fascinating functions in the private and public sectors. Blockchain applications are involved with managing complex shipping and logistical issues at international ports (Maqta Gateway in Abu Dhabi and the Port of Antwerp in the Netherlands), providing a transparent record of trading activity on the Australian stock market and securing end-to-end transactions as part of a pilot program by the UK Land Registry.

Those functions should be viewed as at least as indicative of blockchain’s potential as Bitcoin. But instead, the technology’s conflation with cryptocurrency has created an association with volatile markets, spectacular risk and unsavory dark-web actors—and not the mathematical structure that relies on decentralized nodes for recording and storing data to allow for greater transparency, auditability and security.

Governments, policymakers and regulators are positioned to confer trust and legitimacy on blockchain—and to unlock its transformative economic potential—by promoting its adoption and developing best-use cases. To do this effectively, they need to invest in human capital, subject-matter expertise, a clear permission policy framework and governance. They must educate not only themselves on the applications of blockchain technology, but also their citizens.

How governments can lead expanding blockchain application

The internet’s utility and value aren’t limited to any single industry—it’s a general-purpose technology that has supported an explosion of economic activity and opportunity across every industry around the world. Likewise, we’re starting to see blockchain’s myriad applications beyond the financial sector.

Blockchain has the potential to radically upend traditional business models in a number of different areas: supply chain logistics, fair trade practices, property transactions, personal identity management and government, to name a few. Supply chain matters, where blockchain has made its first inroads outside of the financial sector, involve a complex series of transactions that move through multiple parties and transactions, each with its own contract and fulfillment terms. Blockchain enables the parties to automate and verify fulfilment of the terms at every step along the way, and to send and record payments instantly.

#### War will cause supply AND energy shocks, tank stocks AND confidence---highly likely causing recession

Nouriel Roubini 3/1, Professor Emeritus of Economics at New York University’s Stern School of Business, is Chief Economist at Atlas Capital Team, CEO of Roubini Macro Associates, and Co-Founder of TheBoomBust.com, “Russia's War and the Global Economy,” MarketWatch, 3/1/2022, <https://www.marketwatch.com/story/putins-war-promises-to-crush-the-global-economy-with-inflation-and-much-slower-growth-11645803074>

In late December, I warned that 2022 would prove to be much more difficult than 2021 – a year when markets and economies around the world fared well overall, with growth rising above its potential after the massive recession in 2020. By the eve of the new year, it had become apparent that the surge of inflation would not be merely temporary, that the ever-mutating coronavirus would continue to sow uncertainty around the world, and that looming geopolitical risks were becoming more acute. First among the three geopolitical threats that I mentioned was Russian President Vladimir Putin’s massing of troops near its border with Ukraine.

After two months of stop-start diplomacy and bad-faith negotiations on the part of the Kremlin, Russia has now launched a full-scale invasion of Ukraine, in what American officials say is an operation to “decapitate” the current democratically elected government. Despite repeated warnings from the Biden administration that Russia was serious about going to war, the images of Russian tanks and helicopter squadrons blitzing through Ukraine have shocked the world.

We now must consider the economic and financial consequences of this historic development. Start with a key geopolitical observation: This is a major escalation of Cold War II, in which four revisionist powers – China, Russia, Iran, and North Korea – are challenging the long global dominance of the United States and the Western-led international order that it created after World War II. In that context, we have entered a geopolitical depression that will have massive economic and financial consequences well beyond Ukraine.

In particular, a hot war between major powers is now more likely within the next decade. As the new cold war rivalry between the US and China continues to escalate, Taiwan, too, will increasingly become a potential flashpoint, pitting the West against the emerging alliance of revisionist powers.

A STAGFLATIONARY RECESSION

A major risk now is that markets and political analysts will underestimate the implications of this geopolitical regime shift. By the close of the market on February 24 – the day of the invasion – US stock markets had risen in the hope that this conflict will slow down the willingness of the US Federal Reserve and other central banks to raise policy rates. But the Ukraine war is not just another minor, economically and financially inconsequential conflict of the kind seen elsewhere in recent decades. Analysts and investors must not make the same mistake they did on the eve of World War I, when almost no one saw a major global conflict coming. Today’s crisis represents a geopolitical quantum leap. Its long-term implications and significance can hardly be overstated.1

In terms of the economy, a global stagflationary recession is now highly likely. Analysts are already asking themselves if the Fed and other major central banks can achieve a soft landing from this crisis and its fallout. Don’t count on it. The war in Ukraine will trigger a massive negative supply shock in a global economy that is still reeling from COVID-19 and a year-long build-up of inflationary pressures. The shock will reduce growth and further increase inflation at a time when inflation expectations are already becoming unanchored.

The short-term financial market impact of the war is already clear. In the face of a massive risk-off stagflationary shock, global equities will likely move from the current correction range (-10%) into bear market territory (-20% or more). Safe government bond yields will fall for a while and then rise after inflation becomes unmoored. Oil and natural gas prices will spike further – to well above $100 per barrel – as will many other commodity prices as both Russia and Ukraine are major exporters of raw materials and food. Safe haven currencies such as the Swiss franc will strengthen, and gold prices will rise further.

The economic and financial fallout from the war and the resulting stagflationary shock will of course be largest in Russia and Ukraine, followed by the European Union, owing to its heavy dependence on Russian gas. But even the US will suffer. Because world energy markets are so deeply integrated, a spike in global oil prices – represented by the Brent benchmark – will strongly affect US crude oil (West Texas Intermediate) prices. Yes, the US is now a minor net energy exporter; but the macro-distribution of the shock will be negative. While a small cohort of energy firms will reap higher profits, households and businesses will experience a massive price shock, leading them to reduce spending.

Given these dynamics, even an otherwise strong US economy will suffer a sharp slowdown, tilting toward a growth recession. Tighter financial conditions and the resulting effects on business, consumer, and investor confidence will exacerbate the negative macro consequences of Russia’s invasion, both in the US and globally.1

The coming sanctions against Russia – however large or limited they turn out to be, and however necessary they are for future deterrence – inevitably will hurt not only Russia but also the US, the West, and emerging markets. As US President Joe Biden has repeatedly made clear in his public statements to the American people, “defending freedom will have costs for us as well, here at home. We need to be honest about that.”

Moreover, one cannot rule out the possibility that Russia will respond to new Western sanctions with its own countermeasure: namely, sharply reducing oil production in order to drive up global oil prices even more. Such a move would yield a net benefit for Russia so long as the additional increase in oil prices is larger than the loss of oil exports. Putin knows that he can inflict asymmetrical damage on Western economies and markets, because he has spent the better part of the last decade building up a war chest and creating a financial shield against additional economic sanctions.

DAMAGE CONTROL IS LIMITED

A deep stagflationary shock is also a nightmare scenario for central banks, which will be damned if they react, and damned if they don’t. On one hand, if they care primarily about growth, they should delay interest-rate hikes or implement them more slowly. But in today’s environment – where inflation is rising and central banks are already behind the curve – slower policy tightening could accelerate the de-anchoring of inflation expectations, further exacerbating stagflation.1

On the other hand, if central banks bite the bullet and remain hawkish (or become more hawkish), the looming recession will become more severe. Inflation will be fought with higher nominal and real policy rates, increasing the price of money, and thereby dampening the overall economy. We have seen this movie twice before, with the oil-price shocks of 1973 and 1979. Today’s re-run will be almost as ugly.

Although central banks should confront the return of inflation aggressively, they most likely will try to fudge it, as they did in the 1970s. They will argue that the problem is temporary, and that monetary policy cannot affect or undo an exogenous negative supply shock. When the moment of truth comes, they will probably blink, opting for a slower pace of monetary tightening to avoid triggering an even more severe recession. But this will de-anchor further inflation expectations.1

Politicians, meanwhile, will try to dampen the negative supply shock. The US will try to mitigate the increase in gasoline prices by drawing down its Strategic Petroleum Reserves, and by nudging Saudi Arabia to use its spare capacity to increase its own oil production. But these measures will have only a limited effect, because widespread fears of further price spikes will result in global hoarding of energy supplies.

Under these new circumstances, the US will feel even more pressure to reach a modus vivendi with Iran – another potential source of oil – on reviving the 2015 nuclear deal. But Iran is effectively allied with China and Russia, and its leaders know that any deal they do today could be tossed aside in 2025 if Donald Trump or a Trump wannabe comes to power in the US. A new nuclear deal with Iran is thus unlikely. Worse, in the absence of one, Iran will continue to advance its nuclear program, heightening the risk that Israel will launch a strike against its facilities. That would deliver a double-whammy negative supply shock to the global economy. The upshot is that various geopolitical constraints will severely limit the West’s ability to counter the stagflationary shock inflicted by the war in Ukraine.

A NEW-OLD PROBLEM

Nor can Western leaders rely on fiscal policy to counter the growth-dampening effects of the Ukraine shock. For one thing, the US and many other advanced economies are running out of fiscal ammunition, having pulled out all the stops in response to the COVID-19 pandemic. Governments have amassed increasingly unsustainable deficits, and servicing these debts will become much more expensive in an environment of higher interest rates.

More to the point, a fiscal stimulus is the wrong policy response to a stagflationary supply shock. Though it may reduce the negative growth impact of the shock, it will add to inflationary pressure. And if policymakers rely on both monetary and fiscal policy in responding to the shock, the stagflationary consequences will become even more severe, owing to the heightened effect on inflation expectations.

The massive monetary and fiscal stimulus policies that governments rolled out after the 2008 global financial crisis were not inflationary because the source of that shock was on the demand side, driven by a credit crunch at a time when inflation was low and below target. The situation today is entirely different. We are facing a negative supply shock in a world where inflation is already rising and well above target.

It is tempting to think that the Russia-Ukraine conflict will have only a minor and temporary economic and financial impact. After all, Russia represents merely 3% of the global economy (and Ukraine much less). But the Arab states that imposed an oil embargo in 1973, and revolutionary Iran in 1979, represented an even smaller share of global GDP than Russia does today.1

The global impact of Putin’s war will be channeled through oil and natural gas, but it will not stop there. The knock-on effects will strike a massive blow to global confidence at a time when the fragile recovery from the pandemic was already entering a period of deeper uncertainty and rising inflationary pressures. The knock-on effects of the Ukraine crisis – and from the broader geopolitical depression it augurs – will be anything but transitory.

#### But, it’s completely resilient

Clint Rainey 1-19, MA in Journalism from Columbia University, BA in Journalism from the University of Texas, Investigative Journalist and Freelance Writer for NYMag, Fast Company, Businessweek, MIT Technology Review, “For Some Reason, CEOs Are More Optimistic Than Ever About The Economy”, Fast Company, 1/19/2021, https://www.fastcompany.com/90713799/for-some-reason-ceos-are-more-optimistic-than-ever-about-the-economy

Business leaders’ optimism about the short-term economy is at its highest point in a decade despite, well, crises seemingly in every direction you look. (A short list includes a two-year-long global pandemic, record inflation, supply shortages, the Great Resignation, and the past seven years being Earth’s seven hottest on record.)

That’s according to accounting giant PwC’s latest Global CEO Survey, released yesterday.

The annual survey, now in its 25th year, polled 4,446 CEOs worldwide back in late fall of 2021, which, it’s worth noting, was also before the omicron wave broke. Still, just 15% of them said they believe economic conditions can’t get any worse in 2022—a relatable position, perhaps—but the vast majority, 77%, go even further, predicting “a stronger global economy in the coming year.” PwC says this is the “most confident” that global CEOs responding to its survey have been since 2012, when recovery from the Great Recession was in full swing.

It’s fair to say respondents worldwide are optimistic, but breaking their answers down country by country muddies the waters a bit. Optimism was highest in India, where 94% of CEOs anticipate global growth in the coming year, 6 points higher than last year. It climbed among CEOs in Japan as well (up 16 points to 83%), and in the UK (up 5 points to 82%), then leapt a ton in Italy (up 18 points to 89%) and France, which recorded the biggest increase (up 25 points to 85%).

Meanwhile, optimism took a hard tumble in four very big, key countries: the U.S. (down 18 points to 70%), China (down 9 points to 62%), Brazil (down 8 points to 77%), and Germany (down 4 points to 76%). Tellingly, however, American CEOs told PwC they’re just as confident as CEOs in India about their own company’s 2022 growth prospects—in both countries, about 40% are “extremely confident” that they’ll achieve revenue growth this year.

In his statement, PwC’s global chairman, Bob Moritz, writes that this level of optimism “speaks to the strength and resilience of the global economy and the ability of CEOs to manage through uncertainty.” He sums it up like this: “There is nothing ‘normal’ about the world we are working in, but we are getting used to it.”

By teaching their workforce technical, human, and learning skills, organizations will be better prepared for the challenges of tomorrow

The looming question—Why?—is not one PwC answers. Other first-of-the-year reports in recent days paint bleaker pictures for 2022. Last week, the World Bank released one warning that the world’s poorest countries face $35 billion in debt repayments this year, enough to potentially push some to the brink of default. In the run-up to Davos, the World Economic Forum just released its annual global risks report. Answers to a question asking 1,000 global leaders to identify the planet’s most imminent risks read like themes from a Cormac McCarthy novel: “extreme weather,” “livelihood crises,” “infectious diseases,” “debt crises,” and “social cohesion erosion.” Even in PwC’s own survey, CEOs still said despite their optimism that they worry in the coming year about cyber threats, health crises, climate change, geopolitical conflict, social inequality, and “macroeconomic volatility.”

#### Decline doesn’t cause war

Dr. Stephen M. Walt 20, Robert and Renée Belfer Professor of International Relations at Harvard University, PhD in International Relations (with Distinction) from Stanford University, MA in Political Science from the University of California, Berkeley, “Will a Global Depression Trigger Another World War?”, Foreign Policy, 5/13/2020, https://foreignpolicy.com/2020/05/13/coronavirus-pandemic-depression-economy-world-war/

On balance, however, I do not think that even the extraordinary economic conditions we are witnessing today are going to have much impact on the likelihood of war. Why? First of all, if depressions were a powerful cause of war, there would be a lot more of the latter. To take one example, the United States has suffered 40 or more recessions since the country was founded, yet it has fought perhaps 20 interstate wars, most of them unrelated to the state of the economy. To paraphrase the economist Paul Samuelson’s famous quip about the stock market, if recessions were a powerful cause of war, they would have predicted “nine out of the last five (or fewer).”

Second, states do not start wars unless they believe they will win a quick and relatively cheap victory. As John Mearsheimer showed in his classic book Conventional Deterrence, national leaders avoid war when they are convinced it will be long, bloody, costly, and uncertain. To choose war, political leaders have to convince themselves they can either win a quick, cheap, and decisive victory or achieve some limited objective at low cost. Europe went to war in 1914 with each side believing it would win a rapid and easy victory, and Nazi Germany developed the strategy of blitzkrieg in order to subdue its foes as quickly and cheaply as possible. Iraq attacked Iran in 1980 because Saddam believed the Islamic Republic was in disarray and would be easy to defeat, and George W. Bush invaded Iraq in 2003 convinced the war would be short, successful, and pay for itself.

The fact that each of these leaders miscalculated badly does not alter the main point: No matter what a country’s economic condition might be, its leaders will not go to war unless they think they can do so quickly, cheaply, and with a reasonable probability of success.

Third, and most important, the primary motivation for most wars is the desire for security, not economic gain. For this reason, the odds of war increase when states believe the long-term balance of power may be shifting against them, when they are convinced that adversaries are unalterably hostile and cannot be accommodated, and when they are confident they can reverse the unfavorable trends and establish a secure position if they act now. The historian A.J.P. Taylor once observed that “every war between Great Powers [between 1848 and 1918] … started as a preventive war, not as a war of conquest,” and that remains true of most wars fought since then.

The bottom line: Economic conditions (i.e., a depression) may affect the broader political environment in which decisions for war or peace are made, but they are only one factor among many and rarely the most significant. Even if the COVID-19 pandemic has large, lasting, and negative effects on the world economy—as seems quite likely—it is not likely to affect the probability of war very much, especially in the short term.

#### Antitrust now and inevitable---it’s already priced in by business

Chris Matthews 12-27, Stocks Reporter at MarketWatch, “Look for Washington Regulators — Not Congress — To Try to Block More Mergers in 2022, Analysts Say”, MarketWatch, 12/27/2021, https://www.marketwatch.com/story/look-for-washington-regulators-not-congress-to-try-to-block-more-mergers-in-2022-analysts-say-11640110564

“In the absence of new laws, the FTC will act and act aggressively,” Kaminski said. “The current FTC believes that prior ones haven’t done enough. They are not worried about doing too much,” adding that investors should expect the FTC to “challenge more mergers and file more lawsuits,” not just in the technology sector but across the U.S. economy.

The FTC and DOJ have already launched lawsuits against Facebook parent Meta Platforms Inc. FB, -2.33% and Google parent Alphabet Inc., but the most important impact that these agencies may have in the coming year is in the mergers that they sue to block or that companies don’t attempt to merge at all, Mills of Raymond James said.

“I’m interested to see how much or how frequently the FTC or DOJ will sue companies that are seeking to merge,” he said. “In the past what these agencies fought for most was to get a resolution. They didn’t want to lose and set a bad precedent. That’s not as much of a concern as it used to be,” he added, noting that this dynamic is likely to weigh on multiples of small cap stocks, RUT, -0.15% SML, -0.04%, given that large companies are less likely to acquire them.

### FTC Trade-Off DA---2AC

#### It makes all antitrust enforcement far more taxing AND forces an agency ramp up

Dr. Thibault Schrepel 21, PhD in Antitrust Law from Université Paris-Saclay, LLM in International Law and Legal Studies from the Brooklyn Law School, Associate Professor of Law at VU Amsterdam University, Faculty Affiliate and Creator and Director of the Computational Antitrust Project at the Stanford University CodeX Center, Blockchain + Antitrust: The Decentralization Formula, p. 179-180

The second element concerns the technical difficulties created by blockchain, as it will complexify the work of antitrust agencies. First, blockchain protects users’ identities. That is all the more so with public blockchains, where there is no need for the creator of a blockchain to approve users. Second, the transactions recorded on the blockchain are encoded and cannot be decrypted by anyone other than the parties to a transaction. This encryption also protects colluders by preventing agencies from tracing the history of their collusion. Third, even if users’ identity and purpose of their transactions were known, the deletion of the data contained therein by agencies would remain quite challenging (to say the least).73 In this respect, perhaps the exit of companies with the automatic destruction of information by smart contracts would be preferable to a leniency application with no subsequent possibility of eliminating the collusive agreement, or at least, the information illegally published.

The third element is linked to the fact that, besides its technical characteristics, blockchain enables colluders to manage the risk of detection. In turn, this should reduce the number of leniency applications. Most of these procedures are indeed started by colluders who fear being discovered. Technology helps in that regard. This is all the more true with private blockchains, as they can be set up so that only specific users can access the entire blockchain. This will limit their ability to hand over incriminating information to antitrust agencies. As a result, when choosing between leniency and an exit through smart con- tract,74 there is every reason to believe that blockchain would, at least partially, overshadow leniency applications.

How worrying is all this? At first sight, the expected decrease in the number of leniency applications may seem problematic, as antitrust agencies rely heavily on them to detect collusive agreements.75 According to the Organisation for Economic Co-operation and Development (OECD), the per- centage of cartel cases detected through leniency applications is reported in the survey to range between 45 and 55 percent for countries such as Canada, Chile, Germany, Korea and New Zealand, and over 85 percent for the European Union.76 In the United States, more than 90 percent of the penalties imposed by the DOJ in recent years are linked to investigations assisted by leniency applicants.77 This report shows a reactive policy by antitrust agencies. It also signals to companies that a well-designed collusive agreement that frames and rectifies disagreements has a good chance of (extended) survival.78 By undermining leniency programs’ effectiveness, blockchain will force competition agencies to become proactive again, failing which companies will have a growing sense of impunity from antitrust and competition law. Only a strengthening of proactive detection will increase the risk of punishment and force companies to seek leniency again.79

#### 2. CREDIBILITY. Funding is at 40 year lows AND they’re losing staff because they can’t win bold cases---that’s Rich.

[1AC RICH – FOR REFERENCE]

For years the commission's budget and staffing levels have been chipped away. It now has roughly 50 per cent of the staff it had in 1980 and is currently trying to review a record number of mergers. In the first nine months of this fiscal year, the FTC received 2,573 notifications ahead of a large merger - already 50 per cent more than were received in the whole of last year.

Last week, the commission published a statement warning that it would not be able to review all mergers within 30 days of a notification being made, as required by law. Instead, the FTC said, if it had not had time to review a merger before it took place, it would reserve the right to take action even after it had been completed.

The commission is also facing an uphill battle to retain staff. Some people say they feel demoralised by the pace of change and irritated they have not yet met their new chair - something Khan's allies say is an unfortunate result of the pandemic. "There are only so many times you can hear that your institution has failed for years before you start to doubt your place in it," says one staff member.

#### That saves resources through deterrence

Rebecca Slaughter 20, JD from Yale Law School, BA in Anthropology from Yale University, “Antitrust at a Precipice,” GRC, 11/17/2020, https://tinyurl.com/yckdf62n

On top of that. I think the FTC’s win rate in court is a result of jurisprudence that is so permissive that it incentivizes companies to take a chance by proposing anticompetitive mergers or engaging in anticompetitive conduct. We are forced to file too many cases against mergers and conduct that should never have gotten out of the boardroom because firms are willing to take a chance at engaging in anticompetitive or monopolistic conduct or proposing mergers that are so clearly anticompetitive.

We spend far too many of our enforcement dollars on mergers that are clearly illegal. For example, this past summer, our staff litigated and won a merger challenge in a clear merger-to-monopoly of coal producers in the Southern Powder River Basin.15 Earlier this year, the FTC challenged the acquisition by Illumina. a monopolist, of PacBio. one of the only other firms capable of competing to make next-generation DNA sequencing systems.16 We also had to litigate all the way through trial and appeal a clear merger to monopoly of two healthcare providers in North Dakota.17 These mergers are only a few of the many data points that suggest a breakdown in the deterrent effect of antitrust enforcement.

Firms may also calculate that they have little to lose by engaging in anticompetitive conduct. These cases are critical, but they tend to be fewer and farther between, more time-consuming, and very fact-specific: sporadic enforcement may limit the deterrent effect. The one exception to this may be the Commission's decades of effort devoted to stopping anticompetitive pay-for-delay settlement agreements.18 But, even in that area, it took a very long time get from the early challenges to a resolution. Knowing that, some firms may still determine it is worth the risk.

Let me be clear: I am extraordinarily proud of the work the FTC has done to bring a record-breaking number of cases this past year. Our staff has been working non-stop, night and day, throughout the pandemic, conducting investigations and litigating both merger and conduct cases. I cannot give them enough credit for the way they have adapted to the circumstances and continued to focus on the work in front of them, even as many of them are juggling family and other challenges at the same time.

It is up the leadership of the agency to push forward and challenge underlying assumptions. I also think that where we are today, with this breakdown in deterrence, is the result of 40 years of courts' narrowing case law and periods of time where there the antitrust agencies intentionally took a hands-off approach to market concentration and market power.

#### Funding is normal means AND boosts are coming

Dylan Byers 21, Senior Media Reporter for NBC News; Internally Citing George Washington University Professor and Former FTC Chair William Kovacic; “Is Facebook Untouchable? It's Complicated,” NBC News, 7-1-2021, https://www.nbcnews.com/tech/tech-news/facebook-untouchable-complicated-rcna1323)

The House Judiciary Committee recently advanced six bills that would bolster the government's ability to regulate Big Tech. They range from simple budgeting measures — one would give more funding to the FTC and the Department of Justice for their antitrust enforcement efforts — to profound reforms — one that would stop platform companies from preferencing their products over those of their competitors and another that would make it illegal for companies to eliminate competitors through acquisitions.

This legislative package faces an arduous road ahead. House Majority Leader Steny Hoyer, who sets the House floor schedule, has said none of the six bills are ready for a vote, which suggests they don't have broad bipartisan support. If and when they do make it through the House, they face an even harder battle in the Senate.

"It's hard to imagine that the larger legislative package is accomplished this year," Kovacic said, though he predicted a few of the less-threatening bills — budgeting, for example — are likely to pass on their own.

"The funding for the FTC and DOJ antitrust divisions, it's nearly 100 percent likely that Congress will pass that law," he said. He said another bill, which would block the tech firms from moving court hearings to more favorable states, was also likely to pass.

#### Monetary penalties recirculate and build the budget

Dr. Marek Martyniszyn 21, Senior Lecturer in Law at Queen’s University Belfast, PhD from University College Dublin, LLM (with Specializations in EU Economic and World Trade Law) from the Saarland University’s European Institute, MA Degree from the Warsaw School of Economics and Postgraduate Certificate in Higher Education Teaching (PGCHET) from Queen's University Belfast, “Competitive Harm Crossing Borders: Regulatory Gaps And A Way Forward”, Journal of Competition Law & Economics, Volume 17, Issue 3, September 2021, https://academic.oup.com/jcle/article/17/3/686/6095856

Furthermore, international cartelists should face more severe sanctions for their violations. Despite the increasing interest in criminalization and individual liability more broadly, the most common sanctions for cartel conduct are corporate fines. The prevalent fining methodology is to impose fines that are benchmarked to the relevant in-country turnover of the culprits.71 Given the nature of the present regulatory regime, this practice is friendly to cartelists. Assuming, for the sake of argument, that corporate fines and fine-setting methodology are both sufficient and just, an international cartel would face appropriate sanctions only if it were to be held responsible in each and every affected jurisdiction. That is virtually impossible. Moreover, the common practice is to introduce maximum limits on fines. Quite often fines cannot exceed either a specific monetary amount, provided for in the relevant domestic rules, or a fixed percentage of the violator’s last year-relevant in-forum turnover, typically ten per cent.72 There is no theory or empirical evidence supporting such thresholds. Even if there were, in practice such thresholds are never met. The imposed fines are set at astonishingly low levels compared to illegal profits, even within the sanctioning jurisdictions.73 Given the practical impossibility of effective enforcement in every harmed state, those jurisdictions which have the capacity to bring transnational cases should increase the severity of their sanctions to increase deterrence. They should do so by, at least, both increasing permissible fine limits and by utilizing the full available spectrum of punitive measures. In this context, the transnational nature of a violation, leading to a transfer of wealth abroad, should be taken into account.

From the deterrence perspective it would be advisable to relate fines to overall, not just in-forum turnover. This would undoubtedly lead to the defendants’ bar raising the double jeopardy argument, conflating the question of which harm is being addressed and which legal interest is being protected with the issue of appropriate sanctions. In the current regulatory framework, each jurisdiction addresses the harm caused on its own market. Therefore, double jeopardy is not and would not become an issue. To avoid this misleading double jeopardy argument, it may be worth considering replacing turnover as a sanctioning benchmark with the overall value of the violator’s assets. In general, the type and severity of sanctions is a sovereign matter. For example, the US provides for imprisonment of up to ten years for individuals involved in a cartel,74 although in many other countries around the world such conduct is not subject to any criminal sanctions, or even to any individual sanctions. Since this is a sovereign choice and there are no binding universal norms to the contrary, it cannot be contested. That said, there is no reason why agencies and courts should not continue with the good practice, which has already emerged, of taking into account sanctions already imposed by other jurisdictions. This practice should continue as a matter of comity, especially in cases involving non-financial sanctions.

Moreover, fines levied on foreign violators could be left, at least partially, in domestic competition agencies’ budgets to facilitate future enforcement and advocacy activities. Sceptics may argue that this would skew the incentives, making the agencies more likely to bring such cases. That is, in fact, the very objective of this proposal. As explained above transnational cases are generally more complicated, presenting higher risks for enforcers. The system should reflect that and incentivize the taking of such risks. More fundamentally, given that transnational violations tend to cause greater harm and lead to outflow of wealth, they warrant agencies’ enhanced attention.

#### Tons of antitrust now

V. Kathleen Dougherty 3-4, Partner in the Government Investigations and White Collar Litigation group at McGuireWoods LLP, et al., “DOJ, Federal Maritime Commission to Cooperate on Antitrust Enforcement in Ocean Shipping Industry”, JD Supra, 3/4/2022, https://www.jdsupra.com/legalnews/doj-federal-maritime-commission-to-8464532/

In his March 1, 2022 State of the Union Address, President Joe Biden again emphasized his commitment to increased competition — this time directing attention to the ocean shipping industry. In support of this commitment, the Department of Justice (DOJ) and Federal Maritime Commission (FMC) announced this week new steps to share resources for antitrust-related enforcement.

The FMC, which regulates international ocean shipping, will now give DOJ’s Antitrust Division “support and maritime industry expertise for Sherman Act and Clayton Act enforcement actions,” and the Antitrust Division will provide the FMC with attorney and economist support to enforce the Shipping Act and related statutes. This announcement also coincides with the introduction of proposed legislation, with bipartisan sponsorship, aimed at repealing federal laws that provide certain antitrust exemptions for ocean carriers.

In comments at a shipping conference this week, FMC Chair Daniel Maffei emphasized that, although the agency to date had found “no evidence” of actionable antitrust behavior in the ocean shipping industry, the FMC would be increasing reporting requirements and “deepening” its analysis of the industry. As reported by Bloomberg, Maffei pegged recent shipping rate increases to jumps in U.S. demand. He shared that “the ocean carriers on the whole are, in fact, moving many more containers than pre-pandemic.”

These announcements are the latest in a series of actions implementing stricter antitrust enforcement stemming from President Biden’s July 9, 2021 executive order on competition. In another recent development, on Feb. 17, 2022, the DOJ Antitrust Division and FBI announced an initiative targeting collusion exploiting COVID-19-related supply-chain disruptions. Together, these initiatives signal expanded antitrust scrutiny of all aspects of the transportation industry.

#### FTC is overloaded

Henry Burke 21, and Andrea; May 28; B.A. in Political Science and Labor Studies from the University of California at Los Angeles; Research Assistant, B.A. in Economics from the University of Maryland; Revolving Door Project, “Hobbled FTC Lacks Budget to Combat Corporate Buying Spree,” <https://therevolvingdoorproject.org/hobbled-ftc-lacks-budget-to-combat-corporate-buying-spree/>

Even if the will to stop it exists, the FTC doesn’t have the funding to stop this boom. In fact, it hasn’t had the funding to keep up with a steady uptick in mergers in years. Aside from the recent spike, the total number of premerger filings [increased](https://www.ftc.gov/system/files/documents/reports/federal-trade-commission-bureau-competition-department-justice-antitrust-division-hart-scott-rodino/p110014hsrannualreportfy2019_0.pdf) by 80 percent over the last 10 years. In 2010, corporations filed 1166 premerger notifications. By 2019, yearly filings almost doubled to 2089.

While the number of transactions the FTC is charged with regulating has increased steadily, the number of enforcement actions — challenges to anticompetitive mergers or conduct — has stagnated.  A 2020 paper from Equitable Growth showed that while the number of [enforcement actions](https://equitablegrowth.org/wp-content/uploads/2020/11/111920-antitrust-report.pdf) from both the FTC and DOJ hovered at about 40 challenges per year from 2010 to 2019, even as the number of corporations seeking merger approval grew. The FTC’s enforcement actions over the past ten years show the agency hasn’t kept up with increased HSR filings: while FY 2010 saw 22 enforcement actions for 1166 reported mergers, a ratio of approximately one enforcement action for every 53 mergers, FY 2019 saw a mere 21 enforcement actions for 2089 mergers, meaning there was only one FTC enforcement action for every 99 mergers.

Overall funding and staffing levels at the FTC have similarly stagnated. Then-FTC commissioner Rebecca Slaughter said in 2020 that it is an “[indisputable](https://www.ftc.gov/system/files/documents/public_statements/1583714/slaughter_remarks_at_gcr_interactive_women_in_antitrust.pdf)” fact that FTC funding has not kept up with market demands; according to Slaughter, the FTC budget has only increased by 13% since 2010 and the employee headcount decreased. This budget increase has not come from increased discretionary appropriations from Congress however, but from a massive increase in merger filings and their accompanying fees. Startlingly, Slaughter notes that “the FTC had roughly 50% more full-time employees at the beginning of the Reagan Administration than it does today.” The situation has become so dire that increased budgets for the enforcement agencies has become a rare [bipartisan](https://www.law360.com/articles/1368496/klobuchar-says-congress-has-rare-shot-at-antitrust-overhaul) issue in the Senate.

#### Alt causes---Taliban resurgence, failed states, etc.

#### Terrorists adapt---cutting funding makes them stronger

Major David N Santos 11, Active Duty Army Intelligence Officer Currently Attending the U.S. Army Command & General Staff College, “What Constitutes Terrorist Network Resiliency?”, Small Wars Journal, 5/31/2011, http://smallwarsjournal.com/jrnl/art/what-constitutes-terrorist-network-resiliency

As important as ideology and social networking are, their benefits will only carry a terrorist organization to a certain extent. As with virtually any other organization or activity around the world, money, is the lifeblood of any organization or movement. Without a reliable source of funding a terrorist organization loses its ability to be proactive in conducting operations as well as procure needed support services and material items. Since acquiring and maintaining sources of financing is vital to the existence of a terrorist organization, security for those sources of funding along with the methods of transferring and storing funds is equally vital. As a result, terrorist organizations have proved to be exceptionally agile in identifying and implementing numerous methods of funding and transferring money in order to prevent effective countermeasures by state governments (Williams, 2005).

The process of globalization has created unprecedented levels of interconnectivity among not only state governments but also among domestic and international financial institutions. As such, vast sums of money can be transferred from one part of the world to another nearly instantaneously. The sheer pace and vastness of the globalization process with developments in information and telecommunications technology has created a nearly impossible task to monitor effectively daily financial transactions to ensure there is no link to terrorist activity. Previous attempts to counter terrorist financing, such as in the wake of the 9/11 attacks, has been to freeze known or suspected terrorist financial assets. Yet this countermeasure has only yielded limited success. As Williams (2005) notes, current attempts to identify and attack terrorist financing has only served to increase the “capacity of terrorist organizations to adapt quickly to new regulations by adopting novel methods of circumventing rules and regulations” (pp. 6).

If Williams (2005) is correct in his analysis that current efforts to target terrorist funding are only resulting in making smarter and more efficient fiscally minded terrorist organizations than what is enabling this trend? One of the key issues is current international law is lacking in specificity and applicability to the nature of the threat posed by transnational terrorist organizations like al Qaeda. One of the main deficiencies with international law is with the Financial Action Task Force (FATF) which had been created in 1989 by the G-7 states to counter money laundering activities conducted by international criminal and drug trafficking organizations (Williams, 2005). The FATF identified 40 recommendations to be implemented to counter money laundering activities. However, no formal binding convention or treaty was created therefore consistent implementation of the FATF recommendations did not occur thus leaving loop holes in international law for use by terrorist organizations to circumvent the FATF. Efforts like the FATF can only be successful if they receive the full support of the international community. Limited or no support provides opportunities for terrorist organizations to continue their financing operations relatively unmolested. The FATF was a lackluster effort to combat terrorist financing due to inefficiency in the manner in which it operated resulting in money laundering not being truly deterred but rather shifted to other areas around the globe where these activities could be conducted more freely (Williams, 2005). The FATF is only one example of inconsistencies in international economic law (as well as with state domestic law) which have inhibited effective terrorist financing countermeasures. The ineffectiveness of the FATF and other counter drug and organized crime measures which have been used to target terrorist financing has only served to actually create more experienced and smarter terrorist financing practices. Instead of preventing terrorist financing, efforts such as the FATF have only facilitated it to expand.