January 15, 2017

By Electronic Submission

Office of the Comptroller of the Currency
400 Seventh Street, SW, Suite 3E-218
Washington, DC 20219

Re: *Exploring Special Purpose National Bank Charters for Fintech Companies*

Dear Comptroller Curry:

In its proposal to create a new special purpose national bank charter for fintech companies the Office of the Comptroller of the Currency (the "OCC") asked whether digital currency products: "may require different approaches to supervision to mitigate risk for both the institution and the broader financial system?"[1] ShapeShift AG appreciates the opportunity to respond.

ShapeShift AG develops and operates a web and API platform that provides blockchain token[2] conversion services. Our service provides interoperability to the blockchain ecosystem by creating a liquid market for the tokens required to access these networks. The company does not accept or exchange national currencies and does not hold customer assets on deposit. We currently support 37 different types of blockchain tokens. Our products are engineered and designed so that our customers are not exposed to the risk of theft, mismanagement, or hacking while using our system; we call this approach Safe by Design.

As the OCC further explores how fintech companies could be chartered, care should be taken to maximize the consumer benefits and protections new technologies. This is particularly the case for nascent technologies like digital assets and blockchain networks. In order to enable a fair, safe, and competitive marketplace for new technologies, like blockchain networks, we believe the OCC should keep the following points in mind as it proceeds:

- Regulation should be proportional to the risks inherent in a particular product or service,
- Regulation should be "technology-neutral" such that competitive markets may flourish, and
- Regulation should be "principles-based" in meeting policy goals.

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[1] Office of the Comptroller of the Currency, Exploring Special Purpose National Bank Charters for Fintech Companies (December 2016) available at: https://www.occ.treas.gov/topics/bank-operations/innovation/special-purpose-national-bank-charters-for-fintech.pdf (last accessed 1/14/17).
[2] Sometimes referred to as "digital currency."

Blockchain Networks

Blockchain networks may be a transformative new technology for commercial activity and embody certain principles of openness, transparency and participation that could lead to improved access to and inclusion in financial services and the broader digital economy.[3] A blockchain network is a peer-to-peer network of computers that store and verify copies of a database. This database, the blockchain at the heart of the system, is used to record the possession of blockchain tokens and the conditions upon which they can be transacted. Blockchain transactions may be authorized by any user (human or machine) that can prove to the network that they have met the required conditions[4] and they are then recorded to the blockchain though the network's transparent validation process.[5]

Regulation should be proportional to the risks inherent in a particular product or service.

Blockchain tokens have been used for financial transactions and the first successful blockchain network, known as bitcoin, was developed as an "electronic cash system."[6] However, the blockchain networks that have since developed encompass many other non-financial uses like decentralized cloud data storage, internet domain name management, video games and entertainment, distributed computing, and proof of identity services. Some new services re-use existing blockchain network infrastructure, like the bitcoin blockchain, to provide ancillary services like notary and proof of existence. Commercial services on blockchain networks integrate financial transactions in such a way that non-financial uses are typically indistinguishable from the financial uses. Thus, some aspects of blockchain networks can almost always be construed to fall within the scope of some financial regulation, typically money transmission.

However, traditional financial regulation may be inapposite to blockchain networks in many instances because the primary commercial activity ought to, on principle, fall outside the scope of financial regulation. When the activity is primarily financial, traditional regulation may be ill-fitting because the risks these networks tend to present can be very different from the risks that our current financial regulatory systems were designed to effectively mitigate. Thus, special care should be given that financial regulations are not broadly interpreted and applied in ways that stifle innovation in novel new areas like blockchain networks, where financial and non-financial uses are often intertwined.[7]

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[3] *See e.g.*, The Economist, "The Trust Machine," (10/31/15) available at: http://www.economist.com/news/leaders/21677198-technology-behind-bitcoin-could-transform-how-economy-works-trust-machine. *See also*, World Economic Forum, "The Future of Financial Infrastructure," (August 2016) available at:
http://www3.weforum.org/docs/WEF_The_future_of_financial_infrastructure.pdf.

[4] This typically involves digitally signing the transaction with the private key from a cryptographic key pair. *See e.g.*, Patrick Murck, "Property Law and the Blockchain," (10/20/15) available at: https://cyber.harvard.edu/events/luncheon/2015/10/Murck.

[5] Oftentimes this is a complicated and computationally intensive process called "mining." *See e.g.*, Peter Van Valkenburgh, "What is Bitcoin Mining, and Why is it Necessary?" (12/15/14) Coin Center available at: https://coincenter.org/entry/what-is-bitcoin-mining-and-why-is-it-necessary.

[6] *See* Satoshi Nakamoto, "Bitcoin: A Peer-to-Peer Electronic Cash System" available at https://bitcoin.org/bitcoin.pdf (last accessed 1/14/17).

[7] *See e.g.*, Special Address of CFTC Commissioner J. Christopher Giancarlo Before the Depository Trust & Clearing Corporation 2016 Blockchain Symposium, available at: http://www.cftc.gov/PressRoom/SpeechesTestimony/opagiancarlo-13 (last accessed 1/14/17)("Regulators have a choice in this regard. I believe we can either follow a regulatory path that burdens the industry with multiple onerous regulatory frameworks or one where we come together and set forth uniform principles in an effort to encourage DLT investment and innovation. I favor the latter approach…. the private sector must lead and regulators must avoid impeding innovation and investment and provide a predictable, consistent and straightforward legal environment. Protracted regulatory uncertainty or an uncoordinated regulatory approach must be avoided, as should rigid application of existing rules designed for a bygone technological era."). *See also,* Bankers Association for Finance and Trade Letter to OCC re: Supporting Responsible Innovation in the Federal Banking System, page 5, available at: https://www.occ.gov/topics/bank-operations/innovation/comment-baft.pdf ("A rush to judgment or action on the part of regulators, without cause or evidence of

The OCC should apply the proportionality principle in developing requirements for newly chartered financial technology firms, particularly those in fast moving new areas like digital currency and blockchain networks.[8] Proportional application of financial regulations has been shown to increase greater financial inclusion[9] and will create a healthier environment for innovation.

Additionally, special attention should be paid to increasing interoperability within and among newly developing financial networks.[10] We agree with the Global Partnership for Financial Inclusion's recent finding that "a compelling argument can be made during the early stages of development of digital transactional platforms that policymakers should focus their attention on ensuring that interoperability is technologically feasible…"[11] Token interoperability for blockchain networks, like the services ShapeShift provides, will maximize future competition as these markets mature, which will in turn create more avenues for access and inclusion within those networks and markets.

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harm, would have a chilling effect on financial innovation from which the U.S. financial sector would likely have difficulty recovering. It is important to remember that these products and services are, in many cases, in their infancies. Like most innovation spurred by technology, these new financial services and applications are iterative and rapidly evolving. The U.S. government can play a crucial and positive role in fostering a nurturing environment for growth and investment in innovation that can improve the lives of its citizens and the economic strength of the country. Alternatively, uninformed or rash policy decisions can stifle and even suffocate solutions before they can be brought to market.").

[8] *See* Governor Daniel K. Tarullo, "Rethinking the Aims of Prudential Regulation," At the Federal Reserve Bank of Chicago Bank Structure Conference, Chicago, Illinois (5/8/14), available at: https://www.federalreserve.gov/newsevents/speech/tarullo20140508a.htm (last accessed 1/14/17) ("I have tried today to suggest that an explicit effort to specify relevant aims as they pertain to different kinds of banking organizations can provide a basis for rationalizing applicable regulatory frameworks--*sometimes by paring back or foregoing regulation for certain kinds of firms*, and sometimes by adding a regulatory measure where the relevant aim has not been adequately promoted by existing measures."). [emphasis added] *See also,* ICBA Supports Fed Governor Tarullo's Call for Tiered and Proportional Financial Regulation, Statement of Camden R. Fine, president and CEO of the Independent Community Bankers of America (May 8, 2014), available at: http://www.icba.org/go-local/why-go-local/news-media/news-media-2015/2014/05/08/icba-supports-fed-governor-tarullo-s-call-for-tiered-and-proportional-financial-regulation. ("ICBA fully agrees with Governor Tarullo that financial regulations should vary according to the size, scope and complexity of regulated organizations. *Tiered regulation would support a more effective regulatory system* and provide much-needed community bank relief from unnecessary regulatory burdens to enhance local economic growth." [emphasis added] We agree and feel that a tiered approach should not just be limited to community banks. Such a limited application of the proportionality principle would distort the market for financial services and impede innovation.).

[9] *See* Mariana Magaldi de Sousa, "Financial Inclusion and Global Regulatory Standards: An Empirical Study Across Global Economies," for the Center for International Governance Innovation (March 2015) at page 2 ("[T]he implementation of global regulatory standards at the country level must follow the proportionality principle, which requires attention not just to the risks of financial instability and lack of integrity, but also to the benefits of financial inclusion.");*see also* pages 10-11, ("This paper has assessed to what extent global regulatory standards have been applied in a proportionate manner, using original indices of financial inclusion for a sample of 90 developing and emerging countries… In the particular case of promoting the use of financial services through innovative instruments, the inclusion of market and operational risks, beyond credit risks, in the calculations of capital adequacy ratios has also impaired the participation of disadvantaged groups in the financial system. *The more stringent capital requirements are, the lower is a country's level of inclusion*… Taken together, these results suggest there is room for improvement. SSBs need to coordinate their actions better to find new ways to encourage proportionality.") [emphasis added].

[10] Peter Van Valkenburgh & Jerry Brito, "Comments to the Office of the Comptroller of the Currency on Supporting Responsible Innovation," (5/27/16), available at: https://www.occ.gov/topics/bank-operations/innovation/comment-coin-center.pdf ("… we should encourage responsible systems that truly improve financial services by increasing security and interoperability.").

[11] Global Partnership for Financial Inclusion 2016 White Paper, *Global Standard-Setting Bodies and Financial Inclusion*, page xix. *See also,* page 98-99(Recommendation 25: "*Explore the role, timing, and possible scope of regulatory mandates and other approaches to promoting interoperability of digital transactional platforms.* Case studies comparing mandated interoperability with market-driven approaches could be useful. The roles policymakers, regulators, and supervisors can play to encourage market-led approaches also merit examination and analysis. Given the frontier nature of the issue and variation in country and market context, guidance on these topics may be premature.").

Regulation should be "technology-neutral" such that competitive markets may flourish

We agree with the comments made by R3 CEV Ltd. that the OCC should focus on "facilitating responsible innovation generally and trusting the market to build appropriate solutions. Putting in place a regulatory framework around fintech innovation itself will only serve to stifle it."[12] Recent history has demonstrated how technology specific regulation of blockchain networks has limited consumer access within the regulators jurisdiction and forced innovators to find "safer, simpler shores."[13]

In spite of warnings to the contrary,[14] the New York Department of Financial Services set about to regulate the activities of firms specifically engaged in developing digital currency services. This process resulted in what has become known as the BitLicense, which has been widely criticized for applying inconsistent rules and failing to "fully appreciate the underlying technology."[15] Implementation of the BitLicense process has been haphazard and few licenses have actually been issued to firms since it went into force.[16] ShapeShift was one of many firms that reluctantly made the business decision to disable access to its service for customers residing in New York.[17] Thus, the effect of the BitLicense to date has been to limit the choices available to consumers in New York State, decreasing competition in the market and exporting innovation to more open-minded jurisdictions both within the U.S. and abroad.

The OCC can avoid a similar misstep by clearly stating the types of risks that firms should control for, rather than attempting to create technology-specific frameworks. An example of where the OCC could err in this regard would be to favor more familiar digital currency exchange models where customer funds are held in custody by the service provider to the detriment of newly emerging methods of conducting exchange without firms having to take custody over customer funds. These two models for the exchange of digital currency are technologically different and have different types of associated risks and benefits. So long as the risks and benefits are clearly disclosed and the OCC's overarching policy goals are met, consumers are in the best position to understand which approach best suits their needs.

[12] Charley Cooper, Response to Questions in "Supporting Responsible Innovation in the Federal Banking System: An OCC Perspective", R3 at page 2 (5/31/16) available at: https://www.occ.gov/topics/bank-operations/innovation/r3-response-to-occ-responsible-innovation.pdf.

[13] *See* Peter Van Valkenburgh & Jerry Brito, *supra* note 10 at page 4.

[14] *See e.g.* Testimony of Ernie Allen President and CEO The International Centre For Missing Exploited Children for the United States Senate Committee on Homeland Security and Governmental Affairs "Beyond Silk Road: Potential Risks, Threats and Promises of Virtual Currencies," (11/18/13) available at: http://www.icmec.org/press/ernie-allen-testimony-beyond-silk-road-potential-risks-threats-and-promises-of-virtual-currencies-for-the-u-s-senate-committee-on-homeland-security-and-governmental-affairs (last accessed 1/14/17) ("You [U.S. Senate Homeland Security and Government Affairs Committee] can ensure that the response of government to this fragile, emerging area is not so draconian that the effect is simply to push these new enterprises outside the United States to countries where there is little or no regulation.").

[15] John Beccia, Re: Comments on Supporting Responsible Innovation In The Federal Banking System: An OCC Perspective, Circle Internet Financial Inc., page 2 (5/31/16) available at: https://www.occ.gov/topics/bank-operations/innovation/comment-circle-financial.pdf ("While some aspects of the law adequately protect against risks associated with related activities, other parts of the regulations do not fully appreciate the underlying technology and are duplicative or inconsistent with federal regulations. In addition, the law provides too much discretion which could cause the regulator to apply the requirements inconsistently to different organizations. These lessons learned underscore the need for a process in the U.S. to properly vet new technologies within an agency that seeks to educate themselves and gain subject matter expertise to ensure the goals of responsible innovation are met." We note that Circle is one of the few companies that has been able to navigate New York DFS' byzantine process for obtaining a BitLicense.).

[16] Suzanne Barlyn, "New York's bitcoin hub dreams fade with licensing backlog" Reuters (10/31/16), available at: http://www.reuters.com/article/us-bitcoin-regulations-dfs-idUSKBN12V0CM. (last accessed 1/14/17).

[17] *See e.g.* Daniel Roberts, "Behind the "exodus" of bitcoin startups from New York," Fortune (8/15/15) available at: http://fortune.com/2015/08/14/bitcoin-startups-leave-new-york-bitlicense. (last accessed 1/14/17).

Regulation should be "principles-based" in meeting policy goals

A principles based approach to regulation recognizes that policy goals can be met in a number of ways including through the architecture and design of new networks, applications and services. As an example of this approach, ShapeShift employs a Safe by Design method of developing new products and services for our customers. We feel that our consumers are best protected through the avoidance of centralized custody, and therefore we designed our exchange so that no customer funds are ever held on deposit with ShapeShift and are thus never at risk. This is a market- and technology-related solution to the dangers caused by traditional custodial exchanges such as Mt. Gox. Additionally, we believe that transparent markets are fair markets, so on the ShapeShift platform all transactions are recorded on publicly accessible blockchain networks and published openly on our website and API for anyone to see, and thus fully transparent to the public, market regulators and law enforcement.

Of course, not all proposed innovations are of equal merit nor are all innovators of equal skill and merit,[18] and consumers should have the risks of using different products and services clearly disclosed to them. No technology can replace the role of humility and fair treatment of consumers in developing beneficial services. Nor should technology alone absolve innovators from meeting fairly developed policy goals like protecting consumers from fraud and theft or protecting our financial markets from abuse. We consider transparency and fairness critical to our brand and reputation in the industry.

We humbly appreciate that all internet enabled services are susceptible to hacking, cyberattacks and breaches. Like so many online services, organizations, and governments, ShapeShift has been the victim of a cyberattack and theft. What distinguishes the outcome of the ShapeShift breach as compared to others is that no consumer information or funds where ever at risk. This is the innovation we have brought to the marketplace, now available everywhere in the world, except New York. While ShapeShift lost funds[19] from its own corporate treasury, there were no customer assets or information for the attacker to steal and thus no customer losses, because our firm never holds valuable customer data and assets in the first place. This is what we mean when we state our principle of "Safe by Design" in our engineering.

We agree with the opinion stated by Marc Hochstein of American Banker that "[a]part from tightening up cybersecurity… this environment calls for a new mindset. A simple option would be to collect only what you absolutely have to in order to run the business and be compliant, and dispose of it as soon as you safely and legally can."[20] By giving clear, principals based guidance the OCC can encourage chartered financial institutions to learn from digital currency innovators how to adopt Safe by Design thinking as they build their products. OCC can and should support these efforts by eliminating redundant rules and requirements specifically suited to legacy technologies. Further, care should be taken to insure that new rules-based regulations are not implemented that would require system designs that would create consumer risks, like demanding greater data collection or unnecessary custody of consumer funds. That is a step backwards in a world where consumers suffer tens of billions of dollars every year in losses from identity theft.

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[18] *See e.g.* Cade Metz, "The Biggest Crowdfunding Project Ever-the DAO-Is Kind of a Mess" (6/6/16) available at: "https://www.wired.com/2016/06/biggest-crowdfunding-project-ever-dao-mess (last accessed 1/14/17). *See also*, Klint Finley, "A $50 Million Hack Just Showed That the DAO Was All Too Human" (6/18/16) available at: https://www.wired.com/2016/06/50-million-hack-just-showed-dao-human (last accessed 1/14/17).

[19] *See* Ledger Labs, ShapeShift Cyberattack Postmortem, available at: https://www.scribd.com/doc/309648683/ShapeShift-Cyber-Attack-Report (last accessed 1/14/17).

[20] Marc Hochstein, "Customer Data is a Liability", American Banker, (1/5/17) available at: https://www.americanbanker.com/news/customer-data-is-a-liability (last accessed 1/15/17).

In conclusion

We would like to thank the OCC for enabling a thoughtful dialogue on how we can all encourage responsible financial and technological innovation in the U.S. We appreciate the opportunity to lend our perspective and outlook in this proceeding. To the extent that the OCC and Office of Innovation in develop a special purpose bank charter for fintech companies, we hope to be of assistance in the prudent crafting of such a charter. We want to avoid what happened in New York, and we want to demonstrate to the world how blockchain technology makes the lives of individuals around the world freer, safer, and more efficient, not in any superficial or transient sense, but in a very real and lasting one.

When considering how nascent technologies like digital currency and blockchain networks are regulated and supervised, the OCC should strive to apply the proportionality principle and clearly identify the risks it seeks to mitigate. It should avoid applying banking and financial regulation to areas of blockchain technology which have little to do with banks or finance. Further, the OCC should take a principles based and technology neutral approach to managing risks so innovators and entrepreneurs will be incentivized to build products that are designed to inherently meet the OCC's policy goals of safety and soundness, fair access and fair treatment of customers in the United States of America.

Sincerely,

ShapeShift AG