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BRIDGING BITCOIN'S GENDER GAP

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I.

INTRODUCTION

This note discusses the disparity between male and female users of Bitcoin, examines possible causes of the low proportion of female Bitcoin users, and suggests potential solutions from both a business and legal perspective. This disparity and its potential resolution not only have implications for Bitcoin's growth but for gender equality in society more generally. This first section introduces Bitcoin and emphasizes its importance in the business world as a breakthrough technology. The second section shows evidence of a marked gender gap in Bitcoin users, noted by both the mainstream media and the Bitcoin community. The third section discusses possible reasons for the disparity from the perspective of gender theory, looking at Bitcoin's dual aspects of finance and technology. Since Bitcoin is rooted in both the world of finance and that of technology, the widespread adoption of Bitcoin by women could have even broader effects of breaking down gender barriers that still exist in these two arenas. The final section provides potential solutions to Bitcoin's gender problem, including targeted marketing and legal regulation that could in turn lead to the cryptocurrency's mainstream acceptance.

A. *What is Bitcoin?*

Bitcoin¹ is the first decentralized cryptocurrency, a term that applies to a subset of digital currencies.² Cryptocurrencies

1. Because Bitcoin is both a system and a currency, the uppercase 'Bitcoin' refers to the network and technology, whereas the lowercase 'bitcoin' refers to the units of value. HANDBOOK OF DIGITAL CURRENCY: BITCOIN, INNOVATION, FINANCIAL INSTRUMENTS, AND BIG DATA 14 (David Lee Kuo Cheun ed., 2015) [hereinafter HANDBOOK].

2. *Id.* at 6. FAQ - *Bitcoin, How Does Bitcoin Work?*, BITCOIN PROJECT,

operate as a peer-to-peer type of electronic cash.³ Practically speaking, this means that value can be transferred between people without passing through the hands of any financial institution.⁴ Similarly, no government or legal entity controls or backs Bitcoin.⁵ Instead, Bitcoin is a decentralized alternative currency, which generally may be transacted outside any governance without falling under any traditional legal regulation.⁶ In fact, it was in part the loss of trust in fiat (government-sponsored) currencies and financial institutions that sparked interest in cryptocurrencies.⁷

Bitcoin began in 2008, when Satoshi Nakamoto (whose identity remains a mystery), published a paper on the Internet.⁸ The open-source software created after Nakamoto's invention can be downloaded, viewed, and run by anyone.⁹ The software solves the main problem of digital money—concern for double-spending—by keeping a ledger of balances called a blockchain. The system runs a protocol over a network of computers belonging to individuals who maintain the core blockchain.¹⁰ The protocol essentially instructs those computers to log and verify the transactions made in bitcoins,¹¹ using cryptographic proof in place of a third party intermediary.¹² All of the computers in this network must agree on the validity of each transaction, to ensure that the digital money is not counterfeit (or being used in a duplicate transaction¹³).¹⁴ This consensus is then added to the blockchain as a record in the chain of transactions, to be checked in validating future

<https://bitcoin.org/en/faq#how-does-bitcoin-work> (last visited Jan. 17, 2016).

3. HANDBOOK, *supra* note 1, at 8.

4. *Id.* at 8. *But see* the discussion *infra* Section IV.B of recent attempts to regulate Bitcoin.

5. HANDBOOK, *supra* note 1, at 7.

6. *Id.* at 7.

7. *Id.* at 8.

8. *See* Satoshi Nakamoto, *Bitcoin: A Peer-to-Peer Electronic Cash System*, BITCOIN PROJECT (2008), <https://bitcoin.org/bitcoin.pdf>.

9. HANDBOOK, *supra* note 1.

10. PAUL VIGNA & MICHAEL J. CASEY, *THE AGE OF CRYPTOCURRENCY: HOW BITCOIN AND DIGITAL MONEY ARE CHALLENGING THE GLOBAL ECONOMIC ORDER* 8–9 (2015) (ebook).

11. *Id.*

12. HANDBOOK, *supra* note 1, at 14.

13. HANDBOOK, *supra* note 1, at 15.

14. VIGNA & CASEY, *supra* note 10, at 9.

transactions.¹⁵ The blockchain is made possible by an intensive computational process called mining, whereby bitcoins themselves are generated at a decreasing pace over time.¹⁶ The algorithm will eventually release up to twenty-one million bitcoins, and as of January 2016, fifteen million have entered circulation.¹⁷

Although the backdrop of Bitcoin is technical, users need not interact with the protocol.¹⁸ Instead, a typical Bitcoin user would exchange fiat money to acquire bitcoins (either online or at a bitcoin ATM), store the private keys for their bitcoins in a virtual wallet (or a hardware wallet), and either keep them as an investment or use them to purchase goods.¹⁹ Due to the increased popularity of the bitcoin since 2009, a contemporary user could shop at both online businesses as well as some brick-and-mortar merchants who now accept bitcoins.²⁰ Despite increasing popularity of Bitcoin, users still face the risk of its volatility.²¹ In 2015 alone, the value of one bitcoin fluctuated between \$177 to \$437 United States Dollar (USD).

B. *Why is Bitcoin Important?*

Bitcoin has received abundant media attention, but the hype still leaves many unconvinced and underwhelmed.²² De-

15. HANDBOOK, *supra* note 1, at 16.

16. HANDBOOK, *supra* note 1, at 20. See FAQ - Bitcoin, *How Are Bitcoins Created?*, BITCOIN PROJECT, <https://bitcoin.org/en/faq#how-are-bitcoins-created> (last visited Jan 17, 2016).

17. *Total Bitcoins in Circulation*, Blockchain, <https://blockchain.info/charts/total-bitcoins> (last visited Jan. 17, 2016) [hereinafter BLOCKCHAIN].

18. FAQ - Bitcoin, *How Does Bitcoin Work?*, *supra* note 2.

19. HANDBOOK, *supra* note 1, at 18.

20. Matthew Kien-Meng Ly, *Coining Bitcoin's "Legal-Bits": Examining the Regulatory Framework for Bitcoin and Virtual Currencies*, 27 HARV. J.L. & TECH. 587, 591 (Spring 2014) (citing *Use Bitcoins in the Real World*, USE BITCOINS.INFO, <http://usebitcoins.info/index.php/bitcoin-in-the-real-world>; Ashley Boncimino, *Where You Can Shop with Bitcoin in Chicago*, CHICAGO BUS. (June 13, 2013), <http://www.chicagobusiness.com/article/20130613/NEWS/08/130619907/where-you-can-shop-with-bitcoin-in-chicago>; Kashmir Hill, *Living on Bitcoin for a Week: The Journey Begins*, FORBES (May 1, 2013), <http://www.forbes.com/sites/kashmirhill/2013/05/01/living-on-bitcoin-for-a-week-the-journey-begins/#426cb799e188>.

21. *Id.*

22. See VIGNA & CASEY, *supra* note 10, at 3.

spite some reputational road bumps (Mt. Gox,²³ Silk Road²⁴) and price panics,²⁵ Bitcoin supporters remain optimistic for the practical potential of the technology. Innovators see Bitcoin as a technological breakthrough with the potential to revolutionize the way transactions occur. Bitcoin already offers current users the benefit of privacy and convenience. In some places, Bitcoin has given individuals an alternative to shaky fiat currency and transactions via expensive or inaccessible financial institutions. Finally, whether Bitcoin grows as a currency or not, it has already generated substantial interest in the world of business and finance.

1. *Technological Breakthrough and Potential to Revolutionize*

Consumers and businesses around the world have recognized Bitcoin as a major breakthrough in how value is exchanged.²⁶ The blockchain system has solved what computer science considered a nearly unsolvable problem²⁷: how to establish trust between otherwise unrelated parties over an untrusted network like the Internet.²⁸ This same technology that creates trust between two unknown parties could reach far beyond the currency to revolutionize digital transactions such as

23. U.S. authorities seized the assets of Mt. Gox in 2013, when it was one of the world's largest Bitcoin exchanges, due to suspicions of money transmission without an appropriate license. In 2014, Mt. Gox shut down after a security breach caused the loss of around 750,000 of its customers' bitcoins. See Kien-Meng Ly, *supra* note 20, at 603–04.

24. In 2013, the FBI seized the Silk Road website, which was known as an online market for drugs and other illicit products. The FBI also arrested the owner of the website for narcotics trafficking and money laundering conspiracy. Afterwards, the FBI went on to arrest top sellers and buyers of the site. See Kien-Meng Ly, *supra* note 20, at 603.

25. Jacob Davidson, *Bitcoin's Price Plummeted Over the Weekend*, TIME (Oct. 6, 2014), <http://time.com/money/3474838/bitcoin-price-crash/> (“In 2013, the currency lost almost 40% of its value . . . when the price dropped from its all-time high of \$1147 to \$694 in less than a week. After partially regaining those losses, Bitcoin fell 40% again from December 15 to 18, going from \$879 to \$522.”).

26. John Watts et al., Center for Regulatory Strategies, Deloitte, *Bitcoin at the Crossroads: There Is a Race to Regulate Bitcoin, Is It Too Soon?* 2 (2015), <http://www2.deloitte.com/content/dam/Deloitte/us/Documents/regulatory/us-advisory-bitcoin-regulation-dcrs.pdf>.

27. *Id.*

28. Marc Andreessen, *Why Bitcoin Matters*, N.Y. TIMES (Jan. 21, 2014), http://dealbook.nytimes.com/2014/01/21/why-bitcoin-matters/?_r=0.

signatures on contracts, digital stock trading, and online voting.²⁹ Indeed, Bitcoin technology has “the potential to be an important force in finance.”³⁰

2. *Practical Impact for Users*

Because Bitcoin users benefit from both privacy and convenience, Bitcoin can be used in ways that fiat currency cannot. Bitcoin’s structure allows private transactions conducted without an intermediary, while parties remain almost anonymous.³¹ Bitcoin users also experience convenient transfers to anyone around the globe with nearly nonexistent transaction fees.³² Both of these features make Bitcoin useful in many situations where fiat currency and traditional financial institutions fall short. For example, the potential exists (and in some cases has been realized)³³ for ‘unbanked’ individuals to utilize Bitcoin as a less expensive alternative to banking. Especially in countries without modern banking systems, it could fulfill that need.³⁴ Similarly, in the case of unstable governments causing fiat currency to lose value, some people are turning to bitcoins as a safer, less politically influenced alternative.³⁵ In this way, as a currency that does not rely on a sovereign for its value, Bitcoin could prove a powerful tool for fighting corruption, shifting power away from those unstable governments simply by replacing the fiat currency.³⁶

29. *Id.* Matthew Daniel, *Blockchain Technology: The Key to Secure Online Voting*, BITCOIN MAG. (June 27, 2015), <https://bitcoinmagazine.com/articles/blockchain-technology-key-secure-online-voting-1435443899>.

30. *See* VIGNA & CASEY, *supra* note 10, at 10.

31. Kien-Meng Ly, *supra* note 20, at 593.

32. *Id.* at 594.

33. Alex Court, *Breaking the Bank: Bitcoins Hit Africa’s Money Transfer Traditions*, CNN (Feb. 17, 2015), <http://www.cnn.com/2015/02/17/business/bitcoin-africa-unbanked/> (discussing examples of Bitcoin service use in sub-Saharan Africa, where 75% of the population is unbanked).

34. *See* Andreessen, *supra* note 28. *See also id.*

35. For a journalistic perspective on the case of Bitcoin in Argentina, see Nathaniel Popper, *Can Bitcoin Conquer Argentina?*, N.Y. TIMES (Apr. 29, 2015), <http://www.nytimes.com/2015/05/03/magazine/how-bitcoin-is-disrupting-argentinas-economy.html>.

36. *See* VIGNA & CASEY, *supra* note 10, at 10–11. “Just consider this: control of a currency is one of the most powerful tools a government wields; ask anybody in Ireland, Portugal, Greece, or Cyprus who lived through those countries’ recent financial crises. Bitcoin promises to take at least some of

3. *Burgeoning Bitcoin Business*

Regardless of what the future holds for Bitcoin as a currency, the business world has begun to focus on harnessing its technological potential. Besides the hundreds of millions being spent by venture capital firms,³⁷ corporations in other industries have begun incorporating Bitcoin as well.³⁸ Nasdaq, a multinational financial services corporation, plans to incorporate Bitcoin technology to transform private company share trading.³⁹ Both Western Union and MoneyGram are studying ways for their customers to send and receive bitcoins through their services.⁴⁰ Barclays is working with a startup to investigate how it could use Bitcoin blockchain technology in everyday banking, and Santander has set up research to study the same.⁴¹ Likewise, IBM is considering adopting the underlying blockchain technology behind Bitcoin to create a digital cash and payment system for major fiat currencies in order to cut down on transactions costs.⁴² Bitcoin could even have implications for the world of intellectual property; one startup using Bitcoin blockchain to record digital ownership of creative

that power away from governments and hand it to people. That alone augurs significant political, cultural, and economic clashes." *Id.*

37. Over \$800 million had been invested in Bitcoin and blockchain startups as of July 2015, and nearly 200 firms have invested. Pete Rizzo, *10 VC Firms Betting Big on Bitcoin and Blockchain*, COINBASE (July 19, 2015), <http://www.coindesk.com/10-vc-firms-bullish-on-bitcoins-potential/>. See Andreesen, *supra* note 28. See also Joseph Young, *Bitcoin Venture Capital Markets Heating up as Five Bitcoin Startups Raise \$45 Million*, BITCOIN MAG. (Sept. 10, 2015), <https://bitcoinmagazine.com/articles/bitcoin-venture-capital-markets-heating-five-bitcoin-startups-raise-45-million-1441923699>.

38. Watts et al., *supra* note 26, at 5.

39. Bradley Hope & Michael J. Casey, *A Bitcoin Technology Gets Nasdaq Test; Pilot to Take Place in Fledgling Nasdaq Private Market*, WALL ST. J. (May 10, 2015), <http://www.wsj.com/articles/a-bitcoin-technology-gets-nasdaq-test-1431296886>.

40. Andrew R. Johnson, *Money Transfers in Bitcoins? Western Union, MoneyGram Weigh the Option*, WALL ST. J. (Apr. 18, 2013), <http://www.wsj.com/articles/SB10001424127887324493704578431000719258048>.

41. Oscar Williams-Grut, *Barclays is Experimenting with Bitcoin's Blockchain*, BUS. INSIDER (June 23, 2015), <http://www.businessinsider.com/barclays-bitcoin-startup-safello-blockchain-fintech-2015-6>.

42. Gertrude Chavez-Dreyfuss, *IBM is Looking to Adopt Bitcoin Technology for Major Currencies*, BUS. INSIDER (Mar. 12, 2015), <http://www.businessinsider.com/r-exclusive-ibm-looking-at-adopting-bitcoin-technology-for-major-currencies-2015-3>.

works has already raised two million dollars in seed funding.⁴³ Even if Bitcoin never reaches critical mass, “[t]he bottom line is that . . . we’ve seen a way of doing business that is faster and cheaper, that cuts out the middleman and the rentier, brings in millions of ‘unbanked’ people, and gives everyone a measure of control over his or her finances and businesses that has not existed before.”⁴⁴ In the words of *The Wall Street Journal’s* Paul Vigna and Michael Casey, “once you see this, there is no way to unsee it.”⁴⁵

II.

THE STRIKING GENDER GAP IN BITCOIN USER DEMOGRAPHICS

Starting in 2013, Bitcoin came into the international spotlight, hitting record high values and attracting attention from the media and investors alike.⁴⁶ However, when those interested in the success of the new cryptocurrency took a closer look at the demographics of Bitcoin users, the data was less than encouraging. In 2013, the majority of Bitcoin owners were involved with Bitcoin as an investment instead of a practical currency.⁴⁷ Still, Bitcoin appeals to and attracts people from both ends of the political spectrum, resulting in an ideologically diverse user base.⁴⁸ Unfortunately, these ideologically diverse users all look similar in every other demographic aspect. Bitcoin users as a whole are homogenous, suggesting both a potential challenge for future Bitcoin expansion and a deeper implication for gender equality in society.

43. Stan Higgins, *Blockchain Startup Raises \$2 Million for Intellectual Property Solution*, COINDESK (June 24, 2015), <http://www.coindesk.com/blockchain-startup-2-million-intellectual-property/>.

44. VIGNA & CASEY, *supra* note 10, at 12.

45. *Id.*

46. Neils Christensen, *2013: Year of the Bitcoin*, FORBES (Dec. 10, 2013), <http://www.forbes.com/sites/kitconews/2013/12/10/2013-year-of-the-bitcoin/>.

47. Jeremiah Bohr & Masooda Bashir, *Who Uses Bitcoin? An Exploration of the Bitcoin Community*, TWELFTH ANNUAL CONFERENCE ON PRIVACY, SECURITY AND TRUST 95 (2014).

48. “While libertarians view Bitcoin as an alternative currency that can free the individual from state power structures, left-of-center users may be more attracted to Bitcoin as a decentralized payment system that challenges power structures within the realm of finance.” *Id.* at 101.

A. *Demographic Data Shows Severe Disparity in Gender of Users*

A 2013 online survey of Bitcoin demographics documented the average Bitcoin user as male, thirty-two years old, with a full-time job.⁴⁹ In addition, users and those familiar with Bitcoin are predominately white.⁵⁰ However, the most startling (and potentially crippling) disparity of all is gender. The 2013 survey indicated that 95.2% of Bitcoin users are male. The preliminary findings of the 2014 survey indicates that these numbers have not improved much, as males currently account for ninety-three percent of Bitcoin users.⁵¹ While this voluntary online survey might not encompass all Bitcoin users, evidence from online wallet companies (where many Bitcoin users store and exchange bitcoins) also supports the idea that women are underrepresented in the Bitcoin community. For example, the co-founder of virtual currency wallet company Coinbase informed the New York Department of Financial Services Panel that his user base had been “[ninety-three] percent male.”⁵² Coinbase is one of the earliest and largest wallet companies⁵³ that endeavors to create and spread an easy user experience

49. Lui Smyth, *The Demographics of Bitcoin*, SIMULACRUM (Apr. 13, 2013), <http://simulacrum.cc/2013/03/04/the-demographics-of-bitcoin-part-1-updated/>.

50. Kyle Coward, *Why Are So Few Black People Using Bitcoin?*, THE ATLANTIC (Jan 7, 2015), <http://www.theatlantic.com/business/archive/2015/01/why-are-so-few-black-people-using-bitcoin/384268/>.

51. Lui Smyth, *Bitcoin Community Survey 2014*, SIMULACRUM (Feb 1, 2013) <http://simulacrum.cc/2014/02/01/bitcoin-community-survey-2014/> (noting the slight 2% increase of female Bitcoin usership in a more recent, yet still unfinished survey).

52. *New York Department of Financial Services Public Hearing Regarding Virtual Currencies*, (Jan. 28–29, 2014) (Statement of Fred Ersham, Co-founder of Coinbase), <http://www.totalwebcasting.com/view/?id=NYsdfs> (follow: “Panel 2 Day 2- Virtual Currency Commerce and Consumer Protections” hyperlink, at 14:40).

53. See Coinbase, <https://www.coinbase.com/>; Victor Luckerson, *Top 10 Exciting Startups*, TIME (Dec. 4, 2013), <http://business.time.com/2013/12/04/business/slide/top-10-exciting-startups/>; Paul Vigna & Michael J. Casey, *Coinbase Raises \$75 Million in Funding Round*, WALL ST. J. (Jan 20, 2015), <http://www.wsj.com/articles/coinbase-raises-75-million-in-funding-round-1421762403>. Bitcoin Magazine considers Coinbase the “first global bank” and the “AOL of Bitcoin”. Giulio Priso, *Look Out NASDAQ, Here Comes the Winklevoss Gemini Exchange*, BITCOIN MAG. (Feb 17, 2015) (quoting David Bailey), <https://bitcoinmagazine.com/articles/look-nasdaq-comes-winklevoss-gemini-exchange-1424217669>.

for Bitcoin users.⁵⁴ While their data is limited to Bitcoin users who employ their services, it is nonetheless striking that even a user-friendly company seeking to grow the community struggles to attract women. A more recent 2015 survey reaching 4000 Bitcoin users around the world showed only a slight increase in female usership, with closer to ten percent of the respondents identifying as women.⁵⁵

B. *Bitcoin Insiders and Mainstream Media Alike Take Note of the Disparity*

The popular media and investment world has taken notice of the gender gap, and many Bitcoin users fear that the volatile coverage of the demographic data might be further harming Bitcoin's recently precarious public image. Despite the support Bitcoin receives from many liberal-leaning Bitcoin users, The Huffington Post released a scathing article in 2014 entitled "Bitcoin Is Apparently A Rich, White, Male Disaster."⁵⁶ This article spurred a widespread media discussion of Bitcoin's demographics. Lui Smyth of Simulacrum (whose survey study results appeared in the article) acknowledged the importance of the article as an indicator of Bitcoin's outward appearance,⁵⁷ but advised that a more nuanced view could be found within the Bitcoin community itself.

Brett Scott, author of *The Heretics Guide to Global Finance*, wrote an article based on his 2013 London Bitcoin Expo talk concerning the worrisome implications of male dominance in the Bitcoin community, which prides itself on breaking boundaries and challenging traditional socio-political structures.⁵⁸ Banks Worst Fear, a website founded by an anonymous organi-

54. See Anthony Effinger, *Coinbase Leads Move to Bring Bitcoin to the Masses*, BLOOMBERG (Sept. 30, 2014), <http://www.bloomberg.com/news/articles/2014-09-30/coinbase-leads-move-to-bring-bitcoin-to-masses>.

55. *New Coindesk Report Shows Who Really Uses Bitcoin*, COINDESK (June 10, 2015), <http://www.coindesk.com/new-coindesk-report-reveals-who-really-uses-bitcoin/>.

56. Mark Gongloff, *Bitcoin Is Apparently A Rich, White, Male Disaster*, HUFFINGTON POST (Feb. 28, 2014), http://www.huffingtonpost.com/2014/02/28/bitcoin-user-demographics-libertarian-men_n_4874727.html.

57. Lui Smyth, *The Politics of Bitcoin*, SIMULACRUM (March 7, 2014), <http://simulacrum.cc/2014/03/07/the-politics-of-bitcoin/>.

58. Brett Scott, *Crypto-Patriarchy, The Problem of Bitcoin's Male Domination*, THE HERETIC'S GUIDE TO GLOBAL FIN. (Jan. 12, 2014), <http://suitpossum.blogspot.co.uk/2014/01/crypto-patriarchy-problem-of-bitcoins.html>.

zation with the explicit goal of ending the current financial system, largely focuses on Bitcoin as a means to do so.⁵⁹ This website acknowledges that Bitcoin is a “male, more specifically white male, dominated space and this should be a growing concern for the Bitcoin community.”⁶⁰ Bitcoin supporters are concerned about the gender gap because the “obvious gender imbalance in the community . . . is serving as a significant roadblock to growth.”⁶¹ The website suggests that women’s tendency to be risk-averse might discourage women from entering Bitcoin, and at the same time, this lack of caution might be Bitcoin’s downfall.⁶² The anonymous author concludes, “Bitcoin and all its counterparts need more women to sustain future growth.”⁶³ Both Bitcoin critics and supporters are aware of the gender disparity in usership, and supporters agree that it is in Bitcoin’s best interest to find a way to broaden its user base.

III.

WHY IS THERE A GAP?

If Bitcoin needs women to thrive, the first step in diversifying Bitcoin’s demographics and growing the currency is to understand why Bitcoin fails to attract women. This section will explain how the financial and technological aspects of cryptocurrencies, combined with a lack of consumer protection, make Bitcoin somewhat formidable to most would-be users. Because women in particular have encountered underrepresentation in the worlds of technology⁶⁴ and finance, Bitcoin’s gender gap also points to the continuing struggle for gender equality in both of these fields.

59. The Daemon, *About Us*, BANKS WORST FEAR, <http://banksworstfear.com/about/>.

60. The Daemon, *The Bitcoin Gender Gap*, BANKS WORST FEAR (July 4, 2014), <http://banksworstfear.com/the-bitcoin-gender-gap/>.

61. *Id.*

62. *Id.*

63. *Id.*

64. Judy Wajcman, *Feminist Theories of Technology*, 34 CAMBRIDGE J. ECON., 143, 145 (2010) (“Women’s employment in the information technology, electronics and communications (ITEC) sector is much lower than their participation in the workforce generally, and it is declining in most industrialised countries.”).

A. *Bitcoin's Novel Technological Aspects Present Obstacles*

1. *Bitcoin is New Technology*

Bitcoin at its most fundamental level is a revolution in computer science; it “builds on twenty years of research into cryptographic currency and forty years of research in cryptography, by thousands of researchers around the world.”⁶⁵ According to Marc Andreessen, co-founder of a venture capitalist firm investing in Bitcoin, Bitcoin has solved a fundamental problem of the Internet: it gives users, for the first time, a way to transfer a unique piece of digital property in a way that is guaranteed to be safe, secure, and transparent.⁶⁶ Although not everyone believes Bitcoin has solved this difficult problem, many would agree that Bitcoin is a new technology with the potential to revolutionize transactions. Because Bitcoin is a groundbreaking concept, proponents frequently compare Bitcoin to the early Internet,⁶⁷ which also started as an obscure and largely male-dominated technology. Bitcoin, like the Internet, has been called a break-through technology,⁶⁸ and as such, follows the pattern of new technology adoption as a gendered phenomenon.

2. *Gender Theory and Technology*

Contemporary feminist theory both offers insight into the dearth of female Bitcoin users and highlights the necessity of increasing female influence in the technosphere. Feminist theory explains that technology, since its beginnings in industrial machinery and military weapons, has traditionally been cast in terms of masculinity, creating an enduring association be-

65. Marc Andreessen, *supra* note 28.

66. *Id.*

67. See, e.g. Carrie Kirby, *Andreessen at CoinSummit: Bitcoin Today is the Internet in 1994*, COINDESK (Mar. 25, 2014) <http://www.coindesk.com/marc-andreessen-balaji-srinivasan-discuss-bitcoin/> (stating that like Bitcoin, the Internet arose as “fringe technology” accompanied by “fringe characters” and “fringe politics.”); Anthony Cuthbertson, *Bitcoin Growing 25% Faster Than the Internet in its Early Years*, INT’L BUS. TIMES (July 27, 2015), <http://www.ibtimes.co.uk/bitcoin-growing-25-faster-internet-its-early-years-1512717>; Leigh Drogan, *Here's How Bitcoin is Like the Early '90s Internet*, BLOOMBERG (Mar. 28 2014), <http://www.bloomberg.com/news/videos/b/754d07ec-00f0-4e5e-9aae-bab5db69073e>.

68. Andreessen, *supra* note 28.

tween tech and manliness.⁶⁹ Despite the fact that various technologies are now used regardless of gender,⁷⁰ gender theory posits that the “engrained cultures of masculinity are still ubiquitous within these industries, causing many young women to reject careers and older women to leave the field.”⁷¹

One reason that women might not be immediately attracted to technology involves the idea that in order to participate in a traditionally masculine field, women experience a de-gendering barrier to entry that does not exist for men in technology.⁷² The case of Bitcoin is no exception to male-dominated tech culture; while some women in Bitcoin today describe wholly positive experiences in the community, there have also been reports of harassment and various forms of ‘othering,’ from male community members.⁷³

Bitcoin’s missing female contingent is indicative of a more menacing consequence of inequality. Although feminist theories approach the discussion from different perspectives,⁷⁴ over the last two decades, gender theory emphasizes the mutual shaping of gender and tech. Some feminist scholars have agreed that technical change can influence gender power relations to the point where “technology is . . . key to achieving

69. Wajcman, *supra* note 64, at 144. “The taken-for-granted association of men and machines is the result of the historical and cultural construction of gender.” *Id.*

70. The role of women in innovation and technology should not be understated. Although the numbers of women in the industry as a whole are lower, there have been many outstanding contributions to the field by women. See Stephen Newton, *Breaking the Code: Women Confront the Promises and the Perils of High Technology*, 29 *WOMEN’S STUD. Q.* 71, 73 (2001), <http://www.jstor.org/stable/40003743?>. See also Jennifer S. Light, *When Computers Were Women*, 40 *TECH. & CULTURE* 455, 482–83 (1991) (explaining how women’s omission from the history of computing obscures their active roles and perpetuates a negative stereotype with relation to women in the tech industry).

71. Wajcman, *supra* note 64, at 145–46.

72. *Id.*

73. See Arianna Simpson, *This is What it is Like to Be a Woman at a Bitcoin Meetup*, *MEDIUM BLOG* (Feb 21, 2014), <https://medium.com/@ariannasimpson/this-is-what-its-like-to-be-a-woman-at-a-bitcoin-meetup-b07f3bb6ab5b#prfnxr9up> (describing a Bitcoin meetup as both stimulating and demeaning); Victoria Turk, *Bitcoin Needs Women*, *MOTHERBOARD* (Dec. 27, 2013), <http://motherboard.vice.com/blog/bitcoin-needs-women> (describing the largely hostile Bitcoin community for women).

74. See Sue V. Rosser, *Through the Lenses of Feminist Theory, Focus on Women and Information Technology*, 26 *FRONTIERS: J. WOMEN’S STUD.* 1, 1 (2005).

gender equality.”⁷⁵ Because business and life take place in a technological culture, the gender politics of technology (including emergent technologies such as Bitcoin) are central to promoting broader gender equality.⁷⁶

3. *Early Technology Adoption and Gender*

Throughout the history of recent technology, researchers have attempted to define what causes some technologies to catch on and others to fail. Several of these studies, some of which are discussed below, have shown that men are more likely than women to adopt technology in its early stages. Since the 1960s, early innovation adoption behavior has been the subject of sociological studies, and continues to be relevant in the field of technology. Everett M. Rogers, known as the inventor of the ‘Diffusion of Innovations’ theory, classified adopters of technology into five categories: early adopters, early majority, late majority, and laggards.⁷⁷ Under this theory Innovators were the first 2.5% who adopt the new innovation (or technology), characterized by riskier behavior and a desire to act as a change agent in their reference group, and willing to tolerate initial problems that may accompany new products or services.⁷⁸ After the innovators, the next 13.5% are the early adopters, who are typically social leaders looking to increase their ability to compete in their industry and willing to take high risks for the possibility of high rewards.⁷⁹

A 1997 study on the adoption of Windows 95 applied this terminology to the identification of early adopters of this operating system, concluding that “[o]pinion leadership, consumer novelty seeking, computer experience, and gender were found to be significant factors in affecting the timing of adoption of Windows 95.”⁸⁰ The study found a significant relationship between the gender of an individual and the timing of adoption; early adopters tended to be male, while later adopters skewed female.⁸¹ A 2010 study of students and technology

75. Wajcman, *supra* note 64, at 143.

76. *Id.* at 151.

77. Everett M. Rogers, *DIFFUSION OF INNOVATIONS* 169–171 (1962).

78. *Id.* at 162, 169.

79. *Id.*

80. Patrick Y.K. Chau & Kai Lung Hui, *Identifying Early Adopters of New IT Products: A Case of Windows 95*, 33 *INFO. & MGMT.* 225, 228 (1998).

81. *Id.* at 229.

usage surveyed students about which group of adopters they felt best described them.⁸² About half of the male respondents saw themselves as innovators or early adopters, whereas just a quarter of females claimed those categories.⁸³

Not only do men and women differ in speed of adoption, but according to various studies, they also tend to approach tech adoption from different perspectives. One study argues that men are more driven by instrumental factors (such as perceived usefulness) while women are motivated by process (such as perceived ease of use) and social factors, including the opinions of others.⁸⁴ Another study documenting gender differences in adoption of e-commerce technology confirmed that perceived compatibility, perceived ease of use, perceived trustworthiness, and visibility had greater impact on women's "use intentions."⁸⁵ A 2005 study by Women in Technology International, IDC, and Intel supported the theory, stating "[w]hile women will not buy something for the sake of being first, women are early adopters of technologies that will clearly improve their lives."⁸⁶ In fact, most research supports the idea that social influences play a much stronger role in technology for women than men.⁸⁷ Even in the workplace (and controlled for variables such as income, organization level, education, and computer skills), subjective norm factors more strongly influenced women's decision to adopt new technology.⁸⁸

82. Educause Ctr. for Applied Research, *Technology Adoption and Ownership of IT*, STUDENTS & INFO. TECH. 37 (2010).

83. *Id.* at 39.

84. Viswanath Venkatesh & Michael G. Morris, *Why Don't Men Ever Stop to Ask for Directions? Gender, Social Influence, and Their Role in Technology Acceptance and Usage Behavior?*, 24 MIS Q. 120, 129 (2000), <http://www.jstor.org/stable/3250981>.

85. Craig Van Slyke, France Belanger, & Ross Hightower, *Understanding Gender-Based Differences in Consumer E-Commerce Adoption*, Proceedings of the 2005 Southern Association of Information Systems Conference 24, 27.

86. Laura Rich, *Shiny New Things: What Digital Adopters Want, How to Reach Them, and Why Every Marketer Should Pay Attention*, YAHOO AD AGE INSIGHTS 12 (March 15, 2010), http://adage.com/images/bin/pdf/shiny_new_things.pdf; David Leighton & Dana Thorat, *WITI and IDC'S Survey Results Reveal Women Are Early Adopters, Mobile, Style Conscious*, WITI (May 5, 2005), https://www.witi.com/center/aboutwiti/press/downloads/WITI_IDC_Survey_results.pdf.

87. Educause Ctr. for Applied Research, *supra* note 82, at 40.

88. Viswanath Venkatesh, Michael G. Morris, & Philip L. Ackerman, *A Longitudinal Field Investigation of Gender Differences in Individual Technology*

Whereas men tend to be more focused in their approach to deciding whether or not to adopt technology, women are more balanced, taking multiple factors into account.⁸⁹

Because early adopters usually inform whether a technological product will spread in usage or fall flat, early adopters have played a crucial role in product launches, including more recent technology such as YouTube and Facebook.⁹⁰ It is perhaps not surprising, then, that the technology industry focuses on men in marketing.⁹¹ However, the industry's focus may not necessarily be warranted. There is evidence by Intel researcher Genevieve Bell that shows men's role in technology adoption might be overstated because of their early involvement. For example, once past the initial adoption stage, "women in Western countries use the internet seventeen percent more . . . than their male counterparts."⁹² In addition, Bell's research shows that women are more likely to use mobile phones, Skype, and social networking sites.⁹³ They are also the majority owners of all internet-enabled devices, such as readers and GPSs.⁹⁴ Despite the obvious role women consumers play in the world of Internet technology, tech companies might still pursue male consumers because of the erasure of women's historical role in creating technology.⁹⁵ Based on the eventual demographic outcome of Internet users, the Bitcoin industry would be wise to take note of the possibility that women could even surpass men in Bitcoin usership and tailor their marketing accordingly.

Adoption Decision-Making Processes, 83 ORGANIZATIONAL BEHAVIOR & HUMAN DECISION PROCESSES 33, 50.

89. *Id.*

90. Rich, *supra* note 86, at 5.

91. Alexis C. Madrigal, *Sorry, Young Man, You're Not the Most Important Demographic in Tech*, ATLANTIC (June 2012), <http://www.theatlantic.com/technology/archive/2012/06/sorry-young-man-youre-not-the-most-important-demographic-in-tech/258087/>.

92. *Id.*

93. *Id.*

94. *Id.*

95. *See id.* ("[A]s Xenia Jardin pointed out in response to a New York Times article that overemphasized the role men have played in the creation of the Internet. When you look around, it *seems* as if technology is by and for dudes, but the reality is much more complicated than that."). *See also* Light, *supra* note 70, at 455.

The difference in how women choose to adopt technology (based on ease and social cues) combines with the tendency of the technology market to target those male consumers to result in alienation of women by technology in general. Bitcoin itself is no exception. In fact, Bitcoin's volatile history of insecurity makes it seem like very risky technology.⁹⁶ If women value social cues from the media, they might be more reluctant to try Bitcoin.⁹⁷ Further, the concept of Bitcoin is very complex, and although complexity does not necessarily take away from potential use in every day life, it does seem more risky to those unwilling to expend the energy to fully comprehend it. And, if understanding Bitcoin theoretically is overly time-consuming or difficult, women might perceive it as easy enough to be valuable. Furthermore, if, as suggested in studies, women value simplicity of use more than potential advantages in utility,⁹⁸ the process of obtaining, storing, and using bitcoins might seem unnecessarily cumbersome relative to the uncertain benefits Bitcoin offers.

B. *Financial Aspect of Bitcoin Presents Adoption Challenges*

1. *Bitcoin Is a Risky Investment*

Although many proponents of Bitcoin prefer to categorize it as a "virtual currency," it is not recognized as legal

96. See Rhys Thomas, *MtGox Scandal Puts Spotlight on Bitcoin Security*, WORLD FIN. (Apr. 22, 2014), <http://www.worldfinance.com/markets/mtgox-scandal-puts-spotlight-on-bitcoin-security> (highlighting Bitcoin's very public, very serious security issues). Cf. Heidi Moore, *The Mt Gox Bitcoin Scandal Is the Best Thing to Happen to Bitcoin in Years*, GUARDIAN (Feb. 26, 2014), <http://www.theguardian.com/money/us-money-blog/2014/feb/25/bitcoin-mt-gox-scandal-reputation-crime> (hypothesizing that the Mt. Gox scandal was actually the beginning of a new, more legitimate, more powerful Bitcoin).

97. Mainstream media has often portrayed Bitcoin as novel, dangerous and unpredictable. See Brian Stoeckert & Timothy O'Brien, *A "C" Change for Virtual Currency*, 13 ACAMS TODAY 26, 27 (2014). See also David Groshoff, *Kickstarter My Heart: Extraordinary Popular Delusions and the Madness of Crowdfunding Constraints and Bitcoin Bubbles*, 5 WM. & MARY BUS. L. REV. 489, 523 (2014) ("Some critics have likened Bitcoin to a currency equivalent of PayPal for criminals, and others—approximately 217,000 hits' worth on a Google search in August—have called Bitcoin a 'Wild West' 189 type of finance.") (citations omitted).

98. See Venkatesh, Morris, & Ackerman, *supra* note 88.

tender in the United States.⁹⁹ Furthermore, in 2014, the IRS categorized it as property rather than currency for tax purposes,¹⁰⁰ meaning that in order to be compliant, gains and losses due to the value fluctuation of Bitcoin need be calculated for every transaction involving the cryptocurrency. Based on actual usage patterns, finance experts generally consider Bitcoin an investment rather than a currency. The Winklevoss Bitcoin Trust, one of the first Bitcoin exchange traded funds to seek SEC approval,¹⁰¹ noted that bitcoins are rarely used in the commercial marketplace, and that the largest use of bitcoin is by speculators.¹⁰² In fact, Bitcoin does not seem like a currency at all when measured by the criteria used by most economists for determining currencies: a currency must function as a medium of exchange, a unit of account, and a store of value.¹⁰³

First, very few people actually use Bitcoin as a medium of exchange, mostly because it is unwieldy in daily transactions for goods and services.¹⁰⁴ Second, Bitcoin is not a good unit of account due to the fact that it is not used as a denomination for any lenders, credit cards, or debit cards.¹⁰⁵ Third, Bitcoin

99. Prableen Bajpai, *Countries Where Bitcoin Is Legal & Illegal*, INVESTOPEDIA (May 6, 2015), <http://www.investopedia.com/articles/forex/041515/countries-where-bitcoin-legal-illegal.asp> (explaining that Bitcoin is not accepted as a substitute for any country's legal tender). However, it is legal to possess Bitcoins in the United States. *Is Bitcoin Legal?*, COINDESK (Aug. 19, 2014), <http://www.coindesk.com/information/is-bitcoin-legal/> [hereinafter *Is Bitcoin Legal?*].

100. I.R.S. Notice 2014-21, 2014 I.R.B. 16; Ryan Selkis, *Bitcoin IRS Tax Guide for Individual Filers*, INVESTOPEDIA (last visited Jan. 17, 2016), <http://www.investopedia.com/university/definitive-bitcoin-tax-guide-dont-let-irs-snow-you/>.

101. See Giulio Prisco, *Bitcoin Investment Trust Becomes the First Publicly Traded Bitcoin Fund*, BITCOIN MAG. (Mar. 2, 2015), <https://bitcoinmagazine.com/articles/bitcoin-investment-trust-becomes-first-publicly-traded-bitcoin-fund-1425338908>. See also Winklevoss Bitcoin Trust, Prospectus (Amend. 5, Form S-1) (Dec. 30, 2014), <https://www.sec.gov/Archives/edgar/data/1579346/000119312514457552/d721187dsla.htm>.

102. John Filar Atwood, *Companies Discussing The Potential Risks Of Using And Investing In Bitcoins 20 SEC Filings*, 11 SEC Filings Insight (June 3, 2014), 2014 WL 3707782.

103. David Yermack, *Is Bitcoin a Real Currency? An Economic Appraisal 2-3* (Nat'l Bureau of Econ. Research, Working Paper No. 19747, 2014), <http://online.wsj.com/public/resources/documents/NBER.pdf>.

104. *Id.* at 3.

105. *Id.*

does not function as a store of value due to several of its unique attributes that differentiate it from traditional currencies. For example, Bitcoin's current valuation is not stable and varies based on other exchange markets.¹⁰⁶ In addition, Bitcoin lacks a fixed exchange rate against traditional currencies, creating additional valuation difficulties.¹⁰⁷ Furthermore, unlike traditional currencies whose deflation is somewhat controlled by outside forces, Bitcoin may be subject to unmitigated deflationary pressures.¹⁰⁸ Without controlling regulations, Bitcoin is also subject to extreme risk of fraud or market panic resulting in permanent depression in value. Firms are beginning to look into insurance to minimize risks associated with Bitcoin use, but even for insurers, quantifying the Bitcoin risk remains a difficult endeavor with no clear solutions.¹⁰⁹ In sum, because it does not normally function as a medium of exchange, a unit of account, or a store of value, Bitcoin can more accurately be described as an investment than a true currency.

The U.S. Security and Exchange Commission (SEC) categorized Bitcoin as a security in the case *SEC v. Shavers*,¹¹⁰ when a federal judge found that the company Bitcoin Savings and Trust was defrauding investors through a Bitcoin Ponzi scheme.¹¹¹ Even when categorized as a security,¹¹² with the

106. *Id.*

107. Groshoff, *supra* note 97, at 520.

108. *Id.* at 518.

109. Lloyd's, *Bitcoin: Risk Factors for Insurance*, EMERGING RISK REPORT 2015, 1, 4, 25, <https://www.lloyds.com/~media/files/news%20and%20insight/risk%20insight/2015/bitcoin%20%20final.pdf>.

110. *SEC v. Shavers*, No. 4:13-CV-416, 2014 U.S. Dist. LEXIS 130781, at *23–24 (E.D. Tex. Sept. 18, 2014).

111. Judith Lee et al., *Bitcoin Basics: A Primer on Virtual Currencies*, 16 BUS. L. INT'L 21, 32 (2015) ("In so finding, the court held that the Bitcoin investments at issue qualified as 'investment contracts' and 'securities' under the Securities Act of 1933, as amended, and the Exchange Act of 1934, as amended."). *Id.*

112. Dan Stroh, *Secure Currency or Security? The SEC and Bitcoin Regulation*, U. CINCINNATI L. REV. (Nov. 18, 2014), <http://uclawreview.org/2014/11/18/secure-currency-or-security-the-sec-and-bitcoin-regulation/> ("As the court determined in *Shavers*, bitcoins are a security. There is an investment of money, common enterprise, and expectation of profits."). See also Ruoke Yang, *When is Bitcoin a Security Under U.S. Securities Law?*, 18 J. TECH. L. & POL'Y 99, 129 (2013) (concluding that treating bitcoins as securities is the first step to creating legal rules for virtual currencies). But see Jeffrey E. Al-

SEC's potential enforcement as protection, Bitcoin remains an especially volatile and risky investment route.¹¹³ The SEC issued an alert this year detailing the potential for fraud and volatility risks of investing in Bitcoin and other virtual currencies.¹¹⁴ In addition, Bitcoin and digital currency made the North American Securities Administrators Association's Top Ten list of threats to investors in 2013.¹¹⁵ The SEC also warned investors that due to the lack of central authority and because of the difficulty of tracing the flow of money through Bitcoin transactions, law enforcement is largely incapable of recovering bitcoins in case of fraud or theft.¹¹⁶ The Winklevoss Bitcoin Trust likewise noted that the Trust could be adversely affected both by price volatility and the possibility of technological amendments to Bitcoin protocols and software.¹¹⁷ Because of these risks, Bitcoin likely appeals less to female investors.

2. *Women and Risk-Averse Investing*

Within the field of behavioral finance and economics, experts assert that unraveling individual economic decision-making requires economics, finance, and psychological theories that account for factors such as social norms and emotions.¹¹⁸ To decipher why and how individuals make investing choices, scholars indicate that behavioral finance and economics theory is effective because it combines "individual behavior and market phenomena and uses knowledge taken from both the psychological field and financial theory."¹¹⁹

Psychological studies have indicated that women display greater risk aversion than men in non-financial spheres, de-

berts & Bertrand Fry, *Is Bitcoin a Security?*, 21 B.U. J. SCI. & TECH. L. 1, 21 (2015) (concluding that Bitcoin is not a security).

113. See Laura Shin, *Should You Invest in Bitcoin? Arguments Against as of December 2015*, FORBES (Dec. 28, 2015), <http://www.forbes.com/sites/laurashin/2015/12/28/should-you-invest-in-bitcoin-10-arguments-against-as-of-december-2015/#196b22585466>.

114. Atwood, *supra* note 102.

115. *Id.*

116. *Id.*

117. *Id.*

118. Groshoff, *supra* note 97, at 498.

119. *Id.* at 499.

pending on context.¹²⁰ More recent studies about risk in investing have been consistent with the body of evidence investigating risk and gender for non-financial domains.¹²¹ Even when other variables such as household wealth remain constant, comparing the proportion of risky assets held reveals a statistical difference between single men's and single women's holdings.¹²² The female population on average may be less confident making investment decisions or even investing at all,¹²³ in part due to the historical hostility towards women on Wall Street and in finance culture.¹²⁴

120. "Differences in behavior are more marked in some societies than others, but across a wide variety of environments and social structures, women avoid risk." Catherine C. Eckel & Philip J. Grossman, *Sex Differences and Statistical Stereotyping in Attitudes Toward Financial Risk*, 23 *EVOLUTION & HUMAN BEHAVIOR* 282, 282 (2002), <http://www.gannapogrebna.com/wp-content/uploads/2013/01/EckelGrossman-2002.pdf>.

121. See Nancy Ammon Jianokoplos & Alexandra Bermasek, *Are Women More Risk Averse?*, 36 *ECON. INQUIRY* 620, 620. "Consistent with the evidence for non-financial domains, non-professional women investors tend to appear to be more conservative and more risk averse than their male counterparts after controlling for factors such as age, education, wealth, race, etc." Robert A. Olsen & Constance M. Cox, *The Influence of Gender on the Perception and Response to Investment Risk: The Case of Professional Investors*, 2 *J. PSYCHOL. & FIN. MARKETS* 29, 30 (2001), http://www.tandfonline.com/doi/abs/10.1207/S15327760JPFM0201_3#.VJThrAA0. But see Julie A. Nelson, *Are Women Really More Risk-Averse Than Men? A Re-Analysis Of The Literature Using Expanded Methods*, 29 *J. ECON. SURVEYS* 566, 566 (2015) (suggesting that the difference in many studies demonstrating that risk-averse behavior varies between genders is really more closely correlated with context than with gender).

122. Jianokoplos & Bermasek, *supra* note 121, at 629.

123. See Kevin Chupka, *Financial Gender Gap: Study Shows Few Women Confident Making Investment Decisions*, *YAHOO FIN.* (May 8, 2014), <http://finance.yahoo.com/blogs/breakout/financial-gender-gap—study-shows-very-few-women-confident-making-investment-decisions-173932035.html>.

124. Blatant discrimination was widespread in the 1980s. Even after multiple lawsuits in the 1990s, it continues to exist in less conspicuous forms. See, e.g., LOUISE MARIE ROTH, *SELLING WOMEN SHORT: GENDER AND MONEY ON WALL STREET* 6 (2006) ("While the number of women in professional positions has risen, and securities firms have a heightened awareness of equal employment opportunity laws, Wall Street remains a male-dominated environment. And while the most obvious forms of differential treatment have been squelched, more subtle forms of discrimination still flourish on Wall Street."); Margo Epprecht, *The Real Reason Women are Leaving Wall Street*, *ATLANTIC* (Sep. 5, 2013), <http://www.theatlantic.com/business/archive/2013/09/the-real-reason-why-women-are-leaving-wall-street/279379/>.

Even among professional investors, female investors' behavior tracks that of the general female population to a lesser degree.¹²⁵ In 2011, data was gathered in a survey from two groups of Chartered Financial Analysts (about a third of which were women).¹²⁶ The findings of this study suggested that female financial professionals "place greater weight on downside or loss potential than men" when making investment decisions. In addition, female investors also seem to be more aware of uncertainty in an investment context.¹²⁷ Accordingly, even female investors show a tendency to give greater weight to security as opposed to gain while considering investment opportunities.¹²⁸

A 2006 study conducted by the Center for Survey Statistics and Methodology (CSSM) at Iowa State University for the NASD Investor Education Foundation found that the willingness to take risk varied significantly between men and women.¹²⁹ In this study, a majority of women surveyed preferred taking average or below-average risks, whereas roughly fifty percent of the men preferred taking above-average or substantial investment risks.¹³⁰ A 2009 study published by the National Academy of Sciences also found that men exhibited lower risk aversion than women, and while testosterone levels did not correlate to amount of risk aversion in men, they were statistically significant among women.¹³¹ While this correlation does not prove direct causation, it does support an interesting connection between testosterone and willingness to accept risk.

Still, the question of gendered risk-aversion is not settled, and there have been some older studies that suggest there is less correlation between risk and gender when it comes to making financial decisions.¹³² In one study published by the

125. See Olsen & Cox, *supra* note 121.

126. *Id.* at 31.

127. *Id.* at 34.

128. *Id.*

129. DEP'T OF CONSUMER SCIENCES, THE OHIO STATE UNIVERSITY, MILESTONE 3 REPORT, GENDER DIFFERENCES IN INVESTMENT BEHAVIOR 2 (2006).

130. *Id.*

131. Paola Sapienza et al., *Gender Differences in Financial Risk Aversion and Career Choices Are Affected by Testosterone*, 106 PROCEEDINGS OF THE NAT'L ACAD. OF SCI. OF THE U.S., 15268, 15268 (2009).

132. Renate Schubert et al., *Financial Decision-Making: Are Women Really More Risk-Averse?*, 89 AM. ECON. REV., 381, 381-82 (1999). See also Dinky Daruvala, *Gender, Risk, and Stereotypes*, 35 J. RISK & UNCERTAINTY 265, 279

American Economic Association in 1999, both men and women were presented with investment and insurance choices, and in this case no gender differences in risk attitudes were found.¹³³ Still, this study acknowledges that risky financial decisions are “inherently contextual.”¹³⁴ This means that the lack of appeal for Bitcoin may be related to multiple factors besides the financial aspect, such as the novel technology and murky legal environment.¹³⁵ Therefore, because of the ambiguity and risk of Bitcoin as an investment, it is possible that women might be more likely to avoid it, creating a gender gap in those interested in holding bitcoins for any period of time.

IV.

WILL THE GAP CLOSE?

A variety of solutions could address both of the above reasons for Bitcoin's lopsided user demographics in order to attract more women users. If Bitcoin continues to grow, time will naturally tend to level the gap as more knowledge of the technology leads to more comfort. This section will show that Bitcoin startups and promoters can speed this process by focusing in on techniques to increase consumer's trust and familiarity with Bitcoin.¹³⁶ Legal regulation will also narrow the expanse between male and female adoption by making Bitcoin adoption less risky and therefore more appealing to risk-averse populations.

(2007) (also finding no significant correlation between gender and risk, but noting that both sexes believed that women are more risk-averse than men).

133. Schubert et al., *supra* note 132.

134. *Id.* at 385.

135. It is legal to possess Bitcoins. *Is Bitcoin Legal?*, *supra* note 99. However, since the IRS declared bitcoins property for taxation purposes, the tax compliance implications are still complex and vague. See Notice 2014-21, 2014 I.R.B. 16; Selkis, *supra* note 100. This, along with the potential for future regulations to completely stunt bitcoins' value, creates an even more risky environment than typical investment decisions.

136. See David Gefen, *E-Commerce: the Role of Familiarity and Trust*, 28 OMEGA: INT'L J. MGMT. SCI. 725 (2000) <http://citeseerx.ist.psu.edu/viewdoc/download?doi=10.1.1.453.787&rep=rep1&type=pdf>, for a discussion and study of the prominent roles familiarity and trust play in adoption of novel technologies such as e-commerce.

A. *Increasing Female Users Despite the Early Technology Aversion*

Since Bitcoin technology is new and experts are optimistic about how popular the technology will become, current users could still be considered ‘early adopters,’ who tend to be male.¹³⁷ Given the technology’s early stage, user demographics could still organically grow to include more women as Bitcoin moves to a phase where more ‘early majority’ adopters begin to take interest. Assuming Bitcoin is as similar to the Internet as proponents claim,¹³⁸ the Internet’s growth¹³⁹ can provide a useful model for a possible best-case trajectory for Bitcoin. Other similar, more recent technologies can also inform Bitcoin’s current situation.

During the Internet’s first ten years as a tool utilized by the public, in the 1990s, the existence of a gender gap in user-ship is well documented. At that time, women viewed men as

137. See Charalambos Tsanidis et al., *Greek Consumers and the Use of Bitcoin*, 6 BUS. & MGMT REV. 295, 296 (2015), http://www.abrmm.com/myfile/conference_proceedings/Con_Pro_52588/2015icbed35.pdf. (citing Diginomics, *The Staggering Rate of Bitcoin Adoption* (2014), <http://diginomics.com/the-staggering-rate-of-bitcoin-adoption/>) (“[T]he trend, as of 2014, seems to lie somewhere at the midpoint of early adoption”). But see John Maudlin, *The 5 Phases of Bitcoin Adoption*, FORBES (Dec. 23, 2014), <http://www.forbes.com/sites/johnmauldin/2014/12/23/the-5-phases-of-bitcoin-adoption/> (estimating that the early adopter phase ended in 2013, when world-class venture capitalists began investing in Bitcoin in a way that outpaces the early years of the Internet). Both Tsanidis and Maudlin would agree that the anticipated global/mass adoption has not yet occurred.

138. See, e.g., *Investment Dollars: Bitcoin Today Versus the Internet in 1995*, BLOCKCHAIN AGENDA (Nov. 14, 2014), <http://insidebitcoins.com/news/investment-dollars-bitcoin-today-versus-the-internet-1995/26382>; Nicholas Carlson, *Star Silicon Valley Entrepreneur: Here’s Why Bitcoin Will Be Bigger Than The Internet*, BUS. INSIDER (Feb. 11, 2015), <http://www.businessinsider.com/how-bitcoin-may-have-more-impact-than-the-internet-2015-2>.

139. The World Wide Web was invented in 1990, and by 1997 had reached an impressive 70 million users (only 2% of the total people who now use the technology). *Internet Growth Statistics*, INTERNET WORLD STATS, <http://www.internetworldstats.com/emarketing.htm> (citing the International Data Corporation) (last visited Feb. 27, 2016); *A Little History of the World Wide Web*, THE WORLD WIDE WEB CONSORTIUM, <https://www.w3.org/History.html> (last visited Feb. 27, 2016). Fitting this trajectory to the framework of Diffusion of Innovation (and considering the enormous number of eventual users of the Web), the Internet was still in the innovator stage seven years after its invention. See *supra* Section III.E.2.

being better able to understand the Internet.¹⁴⁰ They also possessed less self-efficacy towards the computer, and had high levels of computer anxiety.¹⁴¹ As the Internet experienced accelerated growth, the gap between men and women with regard to Internet access narrowed and almost disappeared by 2000.¹⁴² Some studies, though, continued to show a gap in access to the Internet between genders in 2000, but found that this gap was the product of socioeconomic factors rather than gender.¹⁴³ After conducting a survey of 18,439 Americans from December 2001, one study showed “no significant difference in adoption rates by language spoken, gender, or number of children in the household.”¹⁴⁴

By this generous comparison to the Internet, Bitcoin still has a few years to catch on and still remain on the same path to popularity as the Internet. Of course, in order for Bitcoin's trajectory to match that of the once-obscure, now-ubiquitous Internet, it must evolve in the same way the Internet did to appeal to a wider audience. Even Bitcoin proponents agree that “Bitcoin was too technically demanding for mainstream use.”¹⁴⁵

Although Bitcoin is often compared to the Internet¹⁴⁶ in terms of breakthrough technology and adoption projections, a comparison to e-commerce technology might be more tailored to Bitcoin's unique adoption concerns. Bitcoin is lauded as the next Internet as a metaphor for its technological impact, but Bitcoin and the Internet serve very different purposes.¹⁴⁷ While from the beginning the Internet served as a general infrastructure, Bitcoin was created to accomplish one

140. Ira M. Wasserman, *Gender and the Internet: Causes of Variation in Access, Level, and Scope of Use*, 86 SOC. SCI. Q. 252, 253 (2005).

141. *Id.*

142. *Id.*

143. Bruce Bimber, *Measuring the Gender Gap on the Internet*, 81 SOC. SCI. Q. 868 (2000).

144. Avi Goldfarb & Jeff Prince, *Internet Adoption and Usage Patterns Are Different: Implications for the Digital Divide*, 20 INFO. ECON. & POL'Y 6 (2008). See also Wasserman, *supra* note 141, at 254.

145. Smyth, *supra* note 49.

146. Ariel Deschapell, *Is Bitcoin Really the Next Internet?*, COINDESK (Apr. 27, 2014), <http://www.coindesk.com/bitcoin-really-next-internet/>.

147. “Although [B]itcoin and the Internet are both decentralized, they serve rather distinct purposes.” *Id.*

main goal: peer-to-peer transfer of value.¹⁴⁸ E-commerce technology, like Bitcoin, aimed to create an infrastructure for on-line exchange. E-commerce was similarly controversial and was even prohibited in the U.S. in its infancy.¹⁴⁹ E-commerce also suffered from a gender disparity in usership that has since been resolved.¹⁵⁰

If Bitcoin now is similar to e-commerce in its infancy, some researchers' suggestions for attracting female consumers to early e-commerce markets may prove equally valuable for Bitcoin. For example, since the previously mentioned studies suggest that women value social cues in adopting new technology, increasing the visibility of Bitcoin in areas of commerce may be an effective way to normalize it.¹⁵¹ For the same reason, creating a community among female users might also encourage adoption.¹⁵²

A number of startups and initiatives are poised to solve two of the main factors that deter women from using Bitcoin: low perceived ease of use and negative social cues. Some are currently attempting to link Bitcoin and social networking, which would result in a larger community based on bitcoins. For example, TipperCoin is a service that allows users to tip with Bitcoin through tweets on Twitter.¹⁵³ The company Blockai emphasizes social sharing by allowing users to 'love' others' content and recognize other users with both tweets and micropayments.¹⁵⁴

148. *Id.*

149. Watts et al., *supra* note 26, at 4.

150. Kurt Schimmel & Jeananne Nicholls, *Gender Differences and E-commerce Behavior and Perceptions*, 8 J. INTERNET BANKING & COM. (2003), <http://www.arraydev.com/commerce/JIBC/0306-01.htm>. See Steve Denning, *Women are the Rocket Fuel of Ecommerce*, FORBES (Mar. 21, 2011), <http://www.forbes.com/sites/stevedenning/2011/03/21/women-are-the-rocket-fuel-of-ecommerce/#1b83adef308a> (highlighting "the business reality that women are the dominant purchasing population" in e-commerce).

151. "Increasing the visibility of e-commerce may be more effective in attracting women to e-commerce. For example, 'bricks-and-clicks' retailers could emphasize the availability of online shopping in their offline advertisements, which would increase the visibility of e-commerce." Slyke, Belanger, & Hightower, *supra* note 85, at 27–28.

152. *Id.*

153. Ilya Pozin, *Is the World Ready for Bitcoin to Go Mainstream?*, FORBES (Mar. 19, 2015).

154. *Id.*

Aiming to make Bitcoin relevant in the social media sphere seems to be a smart move to attract women, both because it increases positive social cues and because women are already frequent social media users.¹⁵⁵ Bitcoin could even take a page from successful social media business strategies, which also focus on community and network tools. For example, Instagram far surpassed its predecessor Hipstamatic by “focusing on community and building network effects” rather than simply providing a technology infrastructure.¹⁵⁶ Likewise, LinkedIn has had more success than Monster because of its network effects and larger community.¹⁵⁷ Another recent initiative could also increase positive visibility and inclusive community: Bitcoin Women’s Day. Held online on March 8th, 2015, this was a global campaign sponsored by leading Bitcoin organizations such as the Digital Currency Counsel.¹⁵⁸ It was organized with the intent to “celebrate the accomplishments of women in the space . . . to raise awareness of issues and barriers they face both within and outside of that space . . . and . . . to promote Bitcoin as a means of addressing some of the issues that women face around the world.”¹⁵⁹ Catering specifically to women through events such as this one could promote a female Bitcoin community that sends positive social cues, initiating a positive feedback loop that encourages more women to adopt Bitcoin.

Other currency companies aim to increase Bitcoin’s perceived ease of use. Coinbase is lauded as the “consumer-friendly” wallet, and it has simplified the user experience by

155. For example, 77% of female Internet users use Facebook. MAEVE DUGGAN, PEW RESEARCH CTR., *THE DEMOGRAPHICS OF SOCIAL MEDIA USERS*, (Aug. 19, 2015), <http://www.pewinternet.org/2015/08/19/the-demographics-of-social-media-users/>.

156. Sangeet Paul Choudary, *10 Startup Business Puzzles Visualized and Explained*, SLIDESHARE 52 (Mar. 17, 2015), http://www.slideshare.net/sanguit/10-startup-business-puzzles-visualized-and-explained/52-Hipstamatic_InstagramTechnology_InfrastructureNetwork_CommunityDataTechnology_InfrastructureInstagram.

157. *Id.*

158. Digital Currency Council, *Join Us on March 8th for Bitcoin Women’s Day*, <http://www.digitalcurrencycouncil.com/uncategorized/join-us-on-march-8th-for-bitcoin-womens-day/>.

159. Christie Harkin, *Recognizing Women in Bitcoin The Week in Review from Decentral.TV*, BITCOIN MAG. (Mar. 9, 2015), <https://bitcoinmagazine.com/articles/recognizing-women-bitcoin-week-review-decentral-tv-1425934199>.

eliminating the long alphanumeric Bitcoin addresses in favor of sending and receiving from email addresses.¹⁶⁰ In this way, some of the more complex, technological aspects of Bitcoin are hidden behind a simpler user interface. As a company that recognizes the importance of usability, their sole focus has been “building useful products that bring the efficiencies of bitcoin to more people.”¹⁶¹ CoinBeyond, whose CEO was featured on CoinFilter’s Top 40 Women of Bitcoin,¹⁶² aspires to “make Bitcoin easy for regular people to use as a normal part of their everyday lives.”¹⁶³ CoinBeyond differs from other startups because of its focus on in-person transactions and “tearing down the barriers to entry for mainstream adoption.”¹⁶⁴ Since female technology adopters are more likely to adopt practical, easy to use technology, startups like this could widen Bitcoin’s demographic beyond the typical “early adopter” crowd.

These and other companies focusing on streamlined user-friendly interface and processes¹⁶⁵ could attract both women and other later adopters. Mainstream users could benefit from start-ups like this in the same way that Internet users benefited from interfaces increasingly built for ease of use. The

160. Matt Schlicht, *A Rare Look Inside of Coinbase: One of the Fastest Growing Bitcoin Companies in the World*, MEDIUM BLOG (Apr. 6, 2015), <https://medium.com/zapchain-magazine/a-rare-look-inside-of-coinbase-one-of-the-fastest-growing-bitcoin-companies-in-the-world-bfb5219f1ed4#.i5iq725ab> (interviewing Nick Tomaino from Coinbase).

161. *Id.*

162. Coinfilter, *The Top 40 Women of Bitcoin*, (Jan. 15, 2015), <http://www.coinfilter.com/top-40-women-of-bitcoin/>.

163. CoinBeyond, *About Us*, <https://coinbeyond.com/about/> (last visited Jan. 15, 2016).

164. *Id.*

165. Another prominent example is Abra, a company that has created an application for international remittances that relies on the Bitcoin blockchain but does not even mention the technology in their promotional materials to consumers. Kyle Torpey, *Brock Pierce: It's Easy To Sell Companies On Bitcoin When It Saves Them Money*, INSIDE BITCOINS (Nov. 20, 2015), <http://insidebitcoins.com/news/brock-pierce-its-easy-to-sell-companies-on-bitcoin-when-it-saves-them-money/35976>. Instead, Abra promotes that it requires no transfer fees and that the process is “instant and convenient.” Abra, *How It Works*, https://www.goabra.com/home.html#how_it_works. Abra won first place in the 2015 Launch Competition, placing it amongst companies like Dropbox and Fitbit, who won in 2008. Launch Festival, *Competition*, <http://www.launchfestival2015.com/competition/>; Launch Festival, *Launch Festival 2015 Best Overall Winner*, <http://www.launchfestival2015.com/abra>.

growth of this technology depends on its accessibility, just as the Internet's growth depended on broadened access. If Bitcoin companies can combine ease of use with community involvement and social networking, Bitcoin's trajectory might continue to resemble the Internet's and e-commerce's paths to mainstream popularity.

B. *Reducing Bitcoin's Risk Via Regulation*

Start-ups like Coinbase and CoinBeyond (which embrace Bitcoin's usefulness in buying products and services) only work towards solving half of the problem. Unlike the Internet (but similar to e-commerce) Bitcoin's intimidation factor stems not only from technophobia, but also from the very real threat of financial loss that accompanies entering the Bitcoin world. Legal counsel at the Bitcoin Foundation agree that in order to change the mainstream public perception of Bitcoin as "scary and risky," regulation that makes the currency more attractive to consumers should be implemented.¹⁶⁶

Although regulation is not always a popular idea within the Bitcoin community (in fact, the greatest community fear for Bitcoin is "regulatory/legal intervention" followed by "reputation problems"),¹⁶⁷ regulation could reduce the discouraging effect of risk on the consumer. Some proponents of Bitcoin warn that although its "freewheeling nature and lack of any central authority leave it prone to volatility," this risk is often "exacerbated by external factors such as the impacts from government restrictions."¹⁶⁸ However, government restrictions could help many consumers feel safer about investing in Bitcoin.¹⁶⁹ The current lack of regulation for Bitcoin financially "imperils not just crypto-currency businesses and their investors, but also their users."¹⁷⁰ Regulation might be

166. Clare Hutchinson, *Bitcoin Needs Regulatory Framework to Change 'Risky' Image*, REUTERS (May 13, 2015), <http://www.reuters.com/article/us-bitcoin-regulations-idUSBREA4C0LQ20140513>.

167. Smyth, *supra* note 49.

168. Jeffrey D. Neuburger & Jonathan P. Mollod, *The Exciting Present And Uncertain Future Of Bitcoins And Digital Currency*, 31 WESTLAW J. 1 (2014) WL 31 No. 23.

169. *Id.*

170. Sarah Jane Hughes & Stephen T. Middlebrook, *Regulating Cryptocurrencies in the United States: Current Issues and Future Directions*, 40 WM. MITCHELL L. REV. 813, 842 (2014).

most important for consumers; “ordinary, law-abiding individuals eventually will expect the same kinds of protections from unauthorized or fraudulent transactions they receive on credit and debit cards.”¹⁷¹ Many throughout the industry recognize that Bitcoin will need to “prove safer and less vulnerable to large-scale theft before being widely adopted for everyday purchases.”¹⁷² At this point, many experts believe regulation to be inevitable, since it is needed both to protect consumers and to bring legitimacy to digital currencies.¹⁷³

While some regulators have moved to address Bitcoin concerns, most of the federal regulations in place so far protect against Bitcoin crime rather than against consumer risk. As mentioned above, the SEC and the IRS both provide potential enforcement routes if bitcoins are used for an illegal purpose (in terms of money laundering and tax noncompliance). Although they have not issued specific regulations, the U.S. Commodity Futures Trading Commission (CFTC) issued an order on September 17, 2015 against Coinflip’s operation of a Bitcoin options trading platform.¹⁷⁴ In doing so, the CFTC simultaneously categorized Bitcoin as a commodity and asserted their enforcement jurisdiction over the cryptocurrency.¹⁷⁵ In this order, the CFTC clarified that because Bitcoin is a commodity, any platform for cryptocurrency swaps must be registered.¹⁷⁶ FinCEN has released guidance that requires virtual currency administrators and exchanges to register as Money Service Business (MSB). MSBs must maintain an effective Anti-Money Laundering compliance program under the Bank

171. *Id.*

172. Tara Mandjee, *Bitcoin, Its Legal Classification and Its Regulatory Framework*, 15 J. BUS. & SEC. L. 1, 61 (2014).

173. *Id.* at 27. “Bitcoin has attracted the attention of regulators who all agree that regulation is inevitable. However, as this industry is in expansion, it is ‘critical not to overly burden its participants’ by state or federal regulation. Therefore, the question becomes what kind of regulation will be imposed on the industry, and, more specifically, how much regulation is too much.” *Id.*

174. Latham & Watkins, *Cryptocurrencies Are Commodities: CFTC’s First Bitcoin Enforcement Action Client Alert*, LW (Sept. 21, 2015), <https://www.lw.com/thoughtLeadership/LW-CFTC-first-bitcoin-enforcement-action>.

175. *Id.*

176. *In re Coinflip, Inc., d/b/a/ Derivabit, et al.*, CFTC No. 15-29 (Sept. 17, 2015), <http://www.cftc.gov/ucm/groups/public/@lrenforcementactions/documents/legalpleading/enfcoinfliporder09172015.pdf>.

Secrecy Act and the Patriot Act.¹⁷⁷ FinCEN's main goal is to "ensure the integrity and transparency of the U.S. financial system so that money laundering and terrorist financing can be prevented."¹⁷⁸ This goal, while necessary for national security, does little good for Bitcoin consumers and even negatively impacts Bitcoin by increasing risk of value depression.

While increasing the scope of federal agencies willing to enforce Bitcoin regulations (currently the SEC, the IRS, and the CFTC) might lead to more perceived security on the part of consumers, more direct consumer protection measures might speed the acceptance by a potential female user demographic. The federal government has not been completely silent on consumer protection. After a Government Accountability Office (GAO) report in May 2014 urging the Consumer Financial Protection Bureau (CFPB) to act, the CFPB issued a consumer advisory identifying characteristics and explaining pitfalls of virtual currencies and Bitcoin more specifically.¹⁷⁹ The CFPB also began accepting consumer complaints regarding Bitcoin, but have not yet taken further action to protect consumers.¹⁸⁰

State regulators seem more willing to work towards regulations that not only reduce illegal transactions, but that also foster more secure growth for Bitcoin. New York, California, and Connecticut have all attempted to create regulatory schemes that will both provide consumer protection and increase the use of digital currencies.¹⁸¹ Benjamin Lawsky, Superintendent of the New York State Department of Financial Services (NYDFS), has focused legislation on consumer protection as a regulatory goal for Bitcoin. He recently stated that regulators "are challenged to develop guidelines that will protect consumers and prevent money laundering while not

177. Stoeckert & O'Brien, *supra* note 97, at 27.

178. *The Present and Future Impact of Virtual Currency, Hearing Before the Subcomm. on Nat'l Sec. & Int'l Trade & Fin. & Subcomm. on Econ. Policy of the S. Comm. on Banking, Hous., & Urban Affairs*, 113th Cong. 8 (2013) (statement of Jennifer Shasky Calvery, Dir. Fin. Crimes Enforcement Network U.S. Dept. of the Treasury).

179. Edward V. Murphy, M. Maureen Murphy, & Michael V. Seitzinger, CONG. RESEARCH SERV., R43339, BITCOIN: QUESTIONS, ANSWERS, AND ANALYSIS OF LEGAL ISSUES 12 (2015).

180. *Id.*

181. *Id.* at 14.

stifling innovation in payments.”¹⁸² It seems that he has high hopes for Bitcoin not just as an investment, but as a currency with “great potential to enable people to send money to countries without modern banking systems, to reduce the cost of remittances, improve security, and move valuable information, such as property deeds, in addition to moving money.”¹⁸³

New York State’s 2015 regulation requires that Bitcoin servicers (businesses involved in transmitting, storing, buying, selling, exchanging, issuing, or administering a virtual currency) obtain a “BitLicense” from the state.¹⁸⁴ In order for NYSDFS to grant a license, the Department will examine the financial condition, character, and general fitness of any applicant. NYSDFS will only grant a license upon finding that business will be conducted in “a manner commanding the confidence and trust of the community.”¹⁸⁵ This license represents the “basic bargain that when a financial company is entrusted with safeguarding customer funds and receives a license from the state to do so—it accepts the need for heightened regulatory scrutiny to help ensure that a consumer’s money does not just disappear into a black hole.”¹⁸⁶ Lawsky justifies the need for a BitLicense by referencing the similarity between the activities of virtual currency firms and those of other financial firms.¹⁸⁷ The regulations that some call onerous have created tension in the community; at least twenty Bitcoin firms have fled New York since their enactment.¹⁸⁸ Yet others, such as “entrepreneurial firms eager to earn legitimacy by tapping

182. Tom Groenfeldt, *New York is Ready with Revision of Bitcoin Regulations*, FORBES (Dec. 18, 2014), <http://www.forbes.com/sites/tomgroenfeldt/2014/12/18/new-york-is-ready-with-revision-of-bitcoin-regulations/>.

183. *Id.*

184. N.Y. COMP. CODES R. & REGS. tit. 23, § 200.3 (2015).

185. N.Y. COMP. CODES R. & REGS. tit. 23, § 200.6 (2015).

186. *Excerpts from Superintendent Lawsky’s Remarks at the Benjamin N. Cardozo School of Law*, NYSDFS (Oct. 14, 2014), <http://www.dfs.ny.gov/about/speeches/sp141014.htm>

187. “[M]ost of what virtual currency firms are being asked to do—whether it is examinations, anti-money laundering compliance, accounting, or record-keeping—is similar to what other financial firms must do.” Groenfeldt, *supra* note 183.

188. Owen Davis, *Months After Bitcoin Consumer Protection Laws Enacted, Digital Currency Businesses Have Fled New York*, INT’L BUS. TIMES (Nov. 5, 2015), <http://www.ibtimes.com/months-after-bitcoin-consumer-protection-laws-enacted-digital-currency-businesses-2171303>.

into the growing interest in bitcoin technologies on Wall Street” remain.¹⁸⁹ These firms that can comply with state regulations could be safer for consumers and contribute to a more trustworthy image of the Bitcoin industry as a whole, attracting users who would typically avoid Bitcoin as too risky.

California has also made way for Bitcoin industry growth by adopting a bill that makes bitcoins and other digital currencies legal. Before the 2014 bill, an older law prohibited conducting commerce in anything but USD.¹⁹⁰ By legalizing cryptocurrency commerce, California has both expanded the currency’s growth opportunities and paved the way for future creation of consumer protections by state regulators.

In Connecticut, the state legislature amended the Connecticut Money Transmission act in June 2015 to require licenses for any online currency businesses in Connecticut.¹⁹¹ In order to comply with Connecticut state laws, companies must account for potential fluctuations in digital currency value by maintaining a surety bond.¹⁹² The legislation also gives the Connecticut Banking Commissioner authority both to impose conditions on the licensee or to deny an application if the business model seems to pose “undue risk of financial loss to consumers.”¹⁹³ In the same way as the New York legislation, the Connecticut state laws aim to minimize risk to consumers engaging in commerce with virtual currency.

Although Bitcoin is currently regulated by a patchwork of federal and state agencies, a legislative act could greatly increase confidence in cryptocurrencies. At a similar stage of development, the Internet had the Telecommunications Act of 1996, which paved the way for its growth by essentially providing it an “oasis from regulation.”¹⁹⁴ Although there have been congressional hearings surrounding Bitcoin and virtual currencies, there have not yet been any major legislation enacted. On May 7, 2014, Congressman Steve Stockman introduced the Virtual Currency Tax Reform Act. This Act would have com-

189. *Id.*

190. Mandjee, *supra* note 173, at 45.

191. 2015 Conn. Acts 16 (Reg. Sess.)

192. Murphy, Murphy & Seitzinger, *supra* note 180, at 17.

193. Murphy, Murphy & Seitzinger, *supra* note 180, at 17.

194. Ev Ehrlich, PROGRESSIVE POL’Y INST., *A Brief History of Internet Regulation* 8 (Mar. 2014), http://www.progressivepolicy.org/wp-content/uploads/2014/03/2014.03-Ehrlich_A-Brief-History-of-Internet-Regulation1.pdf.

pelled the IRS to treat Bitcoin as a foreign currency rather than property, removing one of the difficult barriers to mainstream use by consumers, but it died in the 113th Congress.¹⁹⁵

In addition to legal initiatives, more widespread self-regulation by the Bitcoin industry might also contribute to a less risky, more trustworthy image. Companies such as Bitrated¹⁹⁶ have filled a niche by ensuring more secure Bitcoin transactions through a sort of escrow account service. Although Bitcoin cannot be made reversible, this service layers an approval system onto the transaction process before the bitcoins can be transferred. Bitrated involves potential intervention from an arbitrator third party if the receiver of goods is not satisfied and wants to make sure the transaction is not completed. Bitrated also adds a community network component by giving users scores based on their online social media presence, trust relationships with other users on Bitrated, and ratings based on past transactions.¹⁹⁷

Despite the hostility of some Bitcoin proponents towards regulation and the difficulty of compliance for small startups, it seems that consumer protection regulation in particular will actually serve to create a more stable public image of Bitcoin. This increase in public confidence could attract more risk-averse female investors as well as more mainstream consumers as a whole. The solution to Bitcoin's risky image is not limited to the legal sphere; startups that focus on making Bitcoin safer for risk-averse consumers can also increase trust in the currency. Whether it comes from the legal world or from within the industry itself, consumer protection regulation will decrease the perceived financial risk surrounding Bitcoin and increase usership.

195. Virtual Currency Tax Reform Act, H.R. 4602, 113th Cong. (2014).

196. BITRATED, <https://www.bitrated.com/> (last visited Feb. 6, 2016).

197. Nir Hirshman, *The Next Level of Bitcoin Consumer Protection Revealed: Bitrated Introduces an Online Reputation Management and Payment System for Bitcoin Users*, PRNEWswire (Feb. 18, 2015), <http://www.prnewswire.com/news-releases/the-next-level-of-bitcoin-consumer-protection-revealed-bitrated-introduces-an-online-reputation-management-and-payment-system-for-bitcoin-users-292390651.html>.

V.
CONCLUSION

Bitcoin's demographics show a distinct gender gap due to the virtual currency's dual footholds in the worlds of both finance and technology: fields where women were historically unwelcome or ignored. Attracting female users marks a crucial step for the growth of Bitcoin beyond its obscure, white male-dominated beginnings. Beyond Bitcoin growth concerns, the gap between female and male users also shows a continuation of a discouraging pattern in technology and finance: one that need be addressed as women push towards broader equality in these fields.

By increasing Bitcoin marketing to women and focusing on important factors such as ease of use and social value, Bitcoin businesses can appeal to female technology adopters more quickly. By decreasing the financial risk that Bitcoin poses, consumer protection regulation can offer Bitcoin the seal of security that female investors seek. These measures could also attract a generally reluctant public, spurring growth beyond the early adopter phase and allowing Bitcoin technology to reach its full potential. Regulation that decreases consumer risk will be especially vital for creating usership growth, increasing the popularity of Bitcoin, and opening the door for what proponents hope will be a financial and technological revolution in a more equal space.