We hope everyone had a wonderful 4th of July celebrating with family and friends. This quintessential summer holiday is often punctuated with parades, barbecues, baseball, and fireworks, but amongst these favorite American pastimes, we pause to focus on the patriotism, freedom, and independence that make it all possible. In a quote on freedom, William Faulkner states, "We must be free not because we claim freedom, but because we practice it." One of the many ways we do so is by exercising our right to vote, which brings us to the feature article in this issue of the Rynoh*Horn* by Chamber of Digital Commerce Founder & President, Perianne Boring, who offers her solution for improving the process of voting: **blockchain**. Now that's a word we've heard a lot in our industry lately, so after you've had a chance to read about how it can be applied to democracy, be sure to register for our upcoming webinar, *Blockchain Demystified*, to learn more about the technology and what it means for our industry. Further, if you're curious to see how your state measures up in introducing legislation that supports the growth of blockchain technology, we've included a special **Blockchain Report Card** from the Chamber of Digital Commerce for you to peruse. Enjoy!

Perianne Boring
Founder & President, Chamber of Digital Commerce

The Future of Voting Is Blockchain

by Perianne Boring *originally published Nov 5, 2018, reprinted with permission from the Chamber of Digital Commerce*
The views and opinions expressed in this article are those of the author and do not necessarily reflect the official policy or position of Rynoh.

The U.S. has suffered its share of challenges when it comes to collecting and counting votes – from long lines at the polls, to ensuring citizens are registered (and motivated) to vote, to questions surrounding whether a chad was left "hanging" during the 2000 Presidential election, to a myriad of other concerns. No matter what side of the political aisle you fall, we can all agree that the process of casting a ballot could use some improvement.

Despite having evolved over time from the physical tokens used in ancient Athenian democracy to medieval little balls ("ballots") to paper slips to mechanical voting machines to punch cards to optical scanners — the process of voting continues to be vexed with potential vulnerabilities and shortcomings.

Today, with the midterm elections upon us, the public is eagerly awaiting details on the progress made in the voting process. Could blockchain offer the solution?

How it Works: Blockchain Creates a Tamper-Free Electronic Record

One of the reasons that electoral officials have been slow to migrate voting online is fear that election integrity could be compromised by hackers. It seems the headlines are riddled with concerns regarding cybersecurity, so it's no wonder. But that's where blockchain comes in, which promises to combine much-needed ballot security with voting convenience.

Blockchain integrates cryptography into software in a unique way. It creates a tamper-free record that can easily be checked to ensure votes are accurately recorded.

Due to the secure and immutable nature of blockchain, votes may be cast by computer or mobile device instead of having voters show up at a local polling place or cast a mail-in-ballot to be processed manually by election officials. Votes tracked through a blockchain provide for a quicker, tamper-proof way of counting votes, which could lead to greater voter participation, better ballot security, and at lower cost.

Blockchain's Bolstered Security is Being Put to Practice Today

West Virginia, for example, is piloting a program to allow its military workers to vote remotely and securely via a blockchain-enabled platform from abroad. This November, all overseas workers from West Virginia will be offered the opportunity to vote via the blockchain network which will distribute and store the votes in 16 different locations – meaning hackers would need to hack into multiple locations in order to tamper with the results. In the nonpolitical voting zone, the Rock and Roll Hall of Fame used Chamber member Votem's blockchain voting system to register 1.8 million votes. That 2017 Hall of Fame inductee process proved that blockchain voting could be effectively and efficiently used by millions, without fraud compromise or attacks.

Votem is introducing a token which will enable citizens to easily vote online, including from their mobile devices with an unprecedented level of verifiability, accessibility, security, and transparency.

Pete Martin, Votem Founder and CEO, sees the public's leeriness of electronic voting and recent voting scandals as "both an opportunity and an issue."

"It just requires more education on our part. People are fearful, and I get it. But we're not going to shirk our responsibilities to make sure we can engender the trust with elections officials and people buying the system," said Martin.

The implications for developing countries which do not yet have the voting infrastructure that the United States has are even more dramatic and could prove a powerful instrument for the continuing spread of representative democracy.

Voting should be as easy as hopping online from home to pay bills from your checking account. In today's digital age, we can do better. By using blockchain to make voting more convenient and secure, we will encourage more people to vote.

Voting began, in ancient Athens, by the "casting" of clay or metal tokens. Now, in the 21st century, we are observing the emergence of 21st century tokenization of voting: casting our ballots via blockchain technology.

Welcome to blockchain: the 21st century way of voting.

ABOUT THE AUTHOR: Perianne Boring is the founder and president of the Chamber of Digital Commerce, the world's largest trade association representing the blockchain industry, which she established in 2014. The Chamber's members consist of the world's leading innovators, operators and investors in the blockchain ecosystem, including Microsoft, IBM, Cisco, Nasdaq, Bloq, Bitpay, Block.one, TrustToken and many others. The Chamber also sponsors a number of keystone industry initiatives including the Token Alliance, which fosters best practices and frameworks for the responsible growth of tokenized networks and applications. For more information about the Chamber, visit https://digitalchamber.org.

Perianne was named America's Top 50 Women in Tech by Forbes. In 2016, she was named 10 Most Influential People in Blockchain by CoinDesk. Prior to forming the Chamber, Perianne was a television host and anchor of an international finance program. She began her career as a legislative analyst in the U.S. House of Representatives, advising on finance, economics, tax and healthcare policy.

FREE WEBINAR

Our 2019 Rynoh*Ed* Webinar Series for title industry professionals continues with the third topic of the series, *Blockchain Demystified: Unraveling the mystery of one of our industry's latest buzzwords*, on Tuesday, August 20th.

What the heck is blockchain? A simple online search will produce an array of results including tech articles, hobbyist blog posts, and explainer videos, but what does any of that have to do with the title industry and, on a more personal level, why should you care? Join us on Tuesday, August 20th at 2PM ET as we break it all down with special guest presenter, SafeChain Founder and CEO, Tony Franco. From the basics of blockchain to its application in real estate transactions, attendees of this 60-minute live webinar will unravel the mystery of one of our industry's latest buzzwords.

BLOCKCHAIN DEMYSTIFIED

TUESDAY, AUGUST 20TH
2PM ET / 1PM CT
60-MINUTE WEBINAR

featuring
Tony Franco
Founder & CEO, SafeChain

SafeChain leverages blockchain-backed technology to improve the security of real estate transactions and modernize operations for both the public and private sectors of the land title industry.

REGISTER TODAY! https://bit.ly/2XFSNeq

Is your browser secure? Key things to consider when selecting a web browser.

by Matt Field, *Rynoh Director of Security and Product Development*

From work-related documents to banking and financial information, many of us regularly use our web browser to transmit confidential and personally identifiable information. Having a secure browser is critical: a browser that is not well-secured could expose you to some significant risk. But with web browsers being a commonplace (and sometimes virtually invisible) utility, how can you make sure that your browser has the security features needed to protect you?

Let's discuss some of the most important things to consider when selecting a web browser, in addition to some of the most popular web browsers available today — starting with Microsoft's own Internet Explorer.

Microsoft Internet Explorer Isn't Your Best Bet
IE has the advantage of coming pre-installed on many computers, but while it is convenient, it isn't always the most secure option. Internet Explorer runs on a tremendous amount of technical debt — and it's become an outdated, unsupported technology. That doesn't mean you should immediately switch to Microsoft Edge, but it does mean that you should look closely at any applications using IE.

In order to maintain its compatibility with older websites, Internet Explorer has become progressively larger and more cumbersome.

Support for older websites introduces a greater potential for exploits, and many new web standards are specifically designed to avoid security flaws and privacy breaches. The larger a system is, the more likely it is to have introduced faults.

Additionally, since Internet Explorer is often implemented as an easy, fast solution, it isn't locked down as much as it should be. By default, Internet Explorer's security settings are fairly broad, allowing websites ease of control over the user's system in favor of an easier user experience. While this does facilitate a smoother user experience, it also opens up users to potential danger.

And, of course, there's Microsoft: Microsoft has been attempting to push people off of Internet Explorer in favor of Edge for some time, and to that end, has not invested a lot in making sure that Internet Explorer is secure. Microsoft Edge is the spiritual successor to Internet Explorer, and Microsoft has invested quite a lot in its development and its adoption.

Ultimately, IE is an outdated platform that's been all but abandoned: its chief advantage is that it's intuitive and ubiquitous. It's an inherently insecure solution both because it encourages bad security practices and because it prioritizes usability over security to begin with.

MEET OUR TEAM Spotlight: Corey Bush

What is your role at Rynoh?
I am a client support specialist.

Before working at Rynoh, what was the most unusual or interesting job you've ever had?
Most interesting would have been working at Wells Fargo in claims. You wouldn't believe all the stories you hear about how people were frauded.

What is your favorite part about working for Rynoh?
The people. Everyone here is really welcoming and easy going.

What does a typical day look like for you and what are you currently working on?
A typical day for me right now begins with running tokens in the morning, then working on retrieval errors, adaptor errors, and helping clients via email or phone with those fixes. I am currently working on pending bank accounts.

What advice would you give to a new Rynoh client?
I would say ask a lot of questions.

If you had to eat one meal every day for the rest of your life what would it be?
Arroz con pollo. I eat a lot of Spanish food, but that is something I could eat every day. I love it.

When you were younger, what did you want to be when you "grew up"?
I wanted to be an actor. I always loved theatre in high school.

Any favorite line from a movie?
"All that is gold does not glitter, not all those who wander are lost; The old that is strong does not wither, deep roots are not reached by the frost." – The Fellowship of the Ring, J.R.R.Tolkien

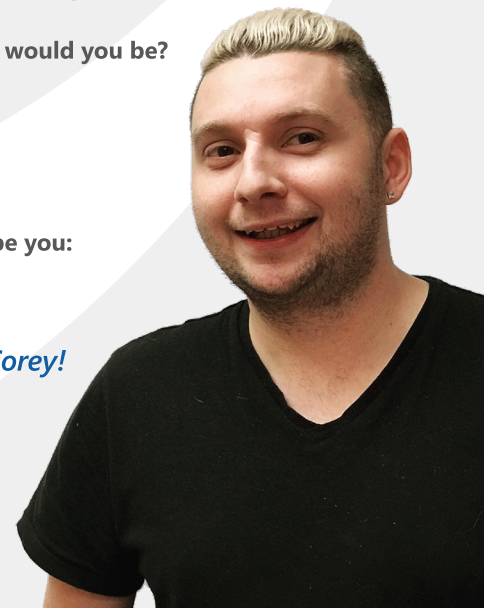**If you were an animal what would you be?**
Definitely a horse.

Motto or personal mantra?
Be free and live life fully.

Three words to best describe you:
Honest. Fun. Thrill seeker.

Welcome to the team, Corey!

So, if IE is a bad browser, what is a good browser?

What Makes Browser Applications More or Less Secure?

If not Internet Explorer, then which browser should you use? In fact, what makes a browser more secure at all? Secure browsers enforce web standards and make security settings transparent and accessible. A secure browser puts security before issues of appearance and compatibility, though user experience still does matter.

Features of a secure web browser include:

🔒 **Frequent updates.** New exploits are discovered all the time; if a browser isn't regularly patching it against these security exploits, then it is not secure. In terms of Internet Explorer, the software itself is no longer supported and will be discontinued.

🔒 **Malware detection.** Browsers can maintain blacklists of websites that are known to be malicious in nature. Chrome has this turned on by default. By warning you when a site is dangerous, it can help you avoid internet "bad neighborhoods": areas that are likely to involve malicious programs or scams.

🔒 **Sandboxing.** Sandboxing ensures that the browser itself operates in an isolated environment, without interacting with the rest of your computer environment: even if something malicious runs in the browser, it won't be able to escape the sandbox.

🔒 **Transparent security features.** Easily visible, transparent, and modifiable security features make it easier for you to protect yourself, such as the ability to easily attach a VPN to your browser.

Many people don't choose a browser based on security but rather ease of use, but as security is becoming an even larger concern for most people, it's become important to prioritize. The above features are the hallmarks of a browser that is putting security first.

Choosing the Right Browser for You

Most people choose browsers based on how easy they are to use, how reliable they are, and how well-supported they are cross-platform. Many people may use different browsers for their tablet than their PC, or may find that a browser isn't natively supported on their smartphone.

Considering all of this, Chrome is likely to be the most secure and most functional browser. While there are other browsers such as Brave and Tor that could be considered more secure because of their focus on privacy, they are less user-friendly and less popular overall.

Here's a run down of the most popular browsers:

🔍 **Chrome.** Chrome has an extremely rapid update frequency, but it also experiences more attacks and exploits than other browsers because it is so popular. Nevertheless, as the major web browser for both mobile devices and personal computers, Chrome has a lot of advantages: it's well-supported, simple, and free. Chrome has a number of add-ons that can be used to enhance security and its security interface is accessible and simple. It also features advanced security options such as blacklisting and sandboxing.

🔍 **Firefox.** Firefox is very similar to Chrome in terms of raw security, though it has lagged behind somewhat in updates. Firefox is an open source browser solution, which is backed by a large community. A major advantage to Firefox is that it claims to be much faster than Chrome, as well as avoiding some of the memory leaks that often prompts Chrome to run sluggishly. It's also available on a larger number of platforms. At the same time, Firefox isn't quite as popular as Chrome and doesn't have as smooth of a user experience.

🔍 **Safari.** Safari will automatically protect against malicious programs and phishing attempts. It has exposed security settings, so you can choose the level of security and privacy that you want, and it has a streamlined interface that's direct and easy to use. For those on iOS or Mac, Safari is likely to be the primary choice, and it works very well within that ecosystem. For the Mac, iOS, and iCloud ecosystem, Safari is thoroughly integrated — and historically this ecosystem has been less burdened by security issues altogether.

🔍 **Edge.** Microsoft Edge is designed to be more secure than Internet Explorer, and as the successor for Internet Explorer, naturally has frequent updates and modifications. At the same time, it's notable that developers at Google's Project Zero were successfully able to bypass Internet Explorer's security, which called into question its capabilities of detecting and defeating malicious code. Microsoft Edge is the new default browser for Windows and, consequently, is available virtually everywhere, but it's experienced some significant security issues even as its state-of-the-art new security technology has won awards. Many are waiting to see how this browser evolves as the new version of Edge will be built on Chromium, which has ties to Google.

Ultimately, your choice of browser is likely to come down to the browser that you feel most comfortable with. For most people, Chrome is going to be intuitive, easy-to-use, and safe. However, it's in your best interest to also know more about how to secure your web browsing and the things that could potentially occur if your web browsing is compromised.

In the future, it's possible that Microsoft Edge will catch up to Chrome in terms of user experience and security — and Safari is already a reliable option for those who are already within the Apple ecosystem. For today, Chrome remains the most popular and secure choice.

At Rynoh, we work tirelessly to explore the technology that will protect your business and help it grow. Using a secure web browser is one of the first steps towards securing your data.

Questions? Contact Matt at matt.field@rynoh.com

State legislators are recognizing the economic and consumer opportunities that blockchain technology can bring and are introducing legislation supporting its growth. Recognizing this upward trend, the Chamber published its **Legislator's Toolkit for Blockchain Technology** in December 2018 before most legislative sessions started in January to provide states with recommendations that would benefit the growth of blockchain technology. **In fact, the introduction of blockchain-related state legislation has exploded, from 64 bills introduced in 2018, to 237 and counting as of May 16, 2019.** Some efforts are quite progressive, while others were well-intentioned but could have benefitted from additional guidance from the industry.

How Are States Measuring Up?

The Legislator's Toolkit for Blockchain Technology suggests a number of legislative options for lawmakers to consider as they examine ways to stimulate their economies and facilitate growth in the blockchain industry. **Here's how the states stacked up**:

Toolkit Recommendation	# of Bills Supporting the Recommendation	States That Introduced These Bills
Create an Office Dedicated to Promoting Blockchain Technology	14	CT, FL, KY, ME, MA, NV, NY, OR, TX, UT, VA
Facilitate Regulatory Sandboxes	13	AZ, IL, KY, NE, NY, NC, SC, TX, UT, VT, WV, WY
Allow Businesses to Use Blockchain for Corporate Records Management	10	MO, NV, ND, SC, TX, VA, WY
Promote Insurance Innovation	6	IL, KY, NC, TN, VT
Create a Tax Policy that Promotes Innovation	5	CA, CO, IA, MT, RI
Amend Laws to Exempt "Utility" Tokens	5	CO, IA, MT, ND, RI
Clarify Application of Money Transmitter Laws	2	IA, UT

*This chart provides information from legislation introduced between January 1, 2019 - May 16, 2019. Please note that some states introduced multiple bills relating to the same Toolkit Recommendation.

**Wyoming was an early mover in introducing legislation to create an office dedicated to promoting blockchain technology, exempt utility tokens from securities laws, exempt digital tokens from money transmitter laws, and create a tax policy that promotes innovation. It enacted these bills in 2018, and thus are not included in this chart. Arizona was also the first state to launch a regulatory sandbox in 2018 and Delaware became the first state to enact legislation to use blockchain for corporate recordkeeping.

A Patchwork of Inconsistent Smart Contracts Legislation

Although legislation attempting to address the enforceability of blockchain and smart contracts is an effort to promote the technology, use of blockchain technology and smart contracts in electronic records and signatures is already permitted and enforceable under existing federal and state law through application of the **Electronic Signatures in Global and National Commerce Act (ESIGN Act)** and state **Uniform Electronic Transactions Act (UETA)** provisions. Unfortunately, 9 states have enacted bills that are inconsistently drafted and 4 states have introduced bills that will add to the state-by-state patchwork of laws.

States that Have Enacted Legislation to Amend Electronic Transactions Laws	AZ, AR, NV, ND, OH, OK, SD, TN, WA
States that Have Introduced Legislation to Amend Electronic Transactions Laws	CT, IL, IA, NY

States That Are Progressively Introducing Blockchain-Related Bills

The following states are leaders in introducing legislation to help the industry develop and grow — from introducing legislation to study and allocate funding for blockchain projects to enacting legislation and creating state initiatives.

CO

Colorado introduced legislation seeking to pilot the use of blockchain in cybersecurity, exempt utility tokens from securities laws, track water rights, study blockchain's agricultural applications, and claim a tax deduction on gains from the sale or exchange of virtual currency. Governor Jared Polis, former Congressional Blockchain Caucus Co-chair, stated he wants to make Colorado "a national hub for blockchain innovation in business and in government."

ND

North Dakota introduced legislation to enable use of blockchain in corporate recordkeeping, study the benefits of blockchain in government services and pilot its use, and exempt utility tokens from securities laws. In total, 5 bills followed the legislative proposals in our Toolkit and/or are supportive of industry.

CT

Connecticut introduced legislation seeking to study and incorporate the use of blockchain in government administration, study its use in online voting, and study how it can help manage elector information. Of the bills introduced, 5 followed the legislative proposals in our Toolkit and/or are supportive of industry.

VA

Virginia has introduced a diverse group of bills to create working groups, pilot the use of blockchain healthcare credentialing, explore blockchain-based mobile voting, and implement use of blockchain in managing business records. Unfortunately, each of these bills did not have support in the legislature and failed. Nevertheless, 5 bills followed the legislative proposals in our Toolkit and/or are supportive of industry.

NY

New York introduced a number of bills that seek to study how blockchain can help improve government services and help stimulate economic development within the blockchain industry. Legislators also introduced bills that create entities to work with the Department of Financial Services to study applications of blockchain and review virtual currency oversight. As a result, 14 bills followed the legislative proposals in our Toolkit and/or are supportive of industry.

WY

Wyoming broke out of the pack last year with progressive legislation such as a bill to exempt digital tokens from state securities laws and a bill to exempt virtual currency transactions from its money transmitter law. Some of these bills, such as its utility token bill, have been introduced in a number of states. This year, it introduced legislation to further support blockchain innovators. Overall, 7 bills followed the legislative proposals in our Toolkit and/or are supportive of industry. The State created the Wyoming Blockchain Task Force in 2017 to support the industry.

Delaware and *Illinois* are not included in the list above because they have not been active so far this year as in previous years, but they deserve recognition for progressive policies and legislation introduced through the Delaware Blockchain Initiative and Illinois Blockchain Task Force.

Legislator's Toolkit for Blockchain Technology:

https://digitalchamber.org/state-legislators-toolkit/

50+ state bills introduced in 2019 track the Chamber's recommendations in our Legislator's Toolkit