Are Notaries an Endangered Species?

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Abstract
What does the Digital Age hold in store for more than 4 million American notaries? A comparison of traditional methods against the newest emerging technologies reveals the rapid pace of change that is now underway. Discussion topics include an overview of traditional notary functions in relation to electronic solutions; the expanding role of third-party validation in identity proofing; the introduction of remote e-notary services in Virginia; views on journaling; commentary on document handling methods and ramifications for the mortgage industry; and, the possibilities of leveraging a revolutionary new data structure known as the blockchain.

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I. Historical Perspectives

Administrative systems have been intertwined with record keeping and technology since the dawn of civilization. Among the earliest known record keepers were Egyptian scribes. A figure similar to our present-day notary public, the *tabellio,* came into being in the Roman Republic. Since paper had not yet been invented in the West, documents were drawn on papyrus and animal skins. The *tabellio* facilitated the transfer of property ownership by virtue of *fides publica*, a concept that translates as "public trust and confidence". Legal evidence of transactions was provided. Although land and property registries did not exist as we know them, each family's assets were inventoried by the Roman Census.

Today, more than 2,000 years later, the noble tradition of *fides publica* survives. All notaries in the U.S. are appointed at the state level, usually by their respective Secretaries of State, but in some jurisdictions by the Governor, State Treasurer or another licensing authority.

Here are some highlights from the past two decades with respect to legislative efforts to keep pace with newly emerging technology.

1995. Utah became the first jurisdiction in the U.S. to enact digital signatures statutes.

1996. The American Bar Association issued its *Guidelines on Digital Signatures.*

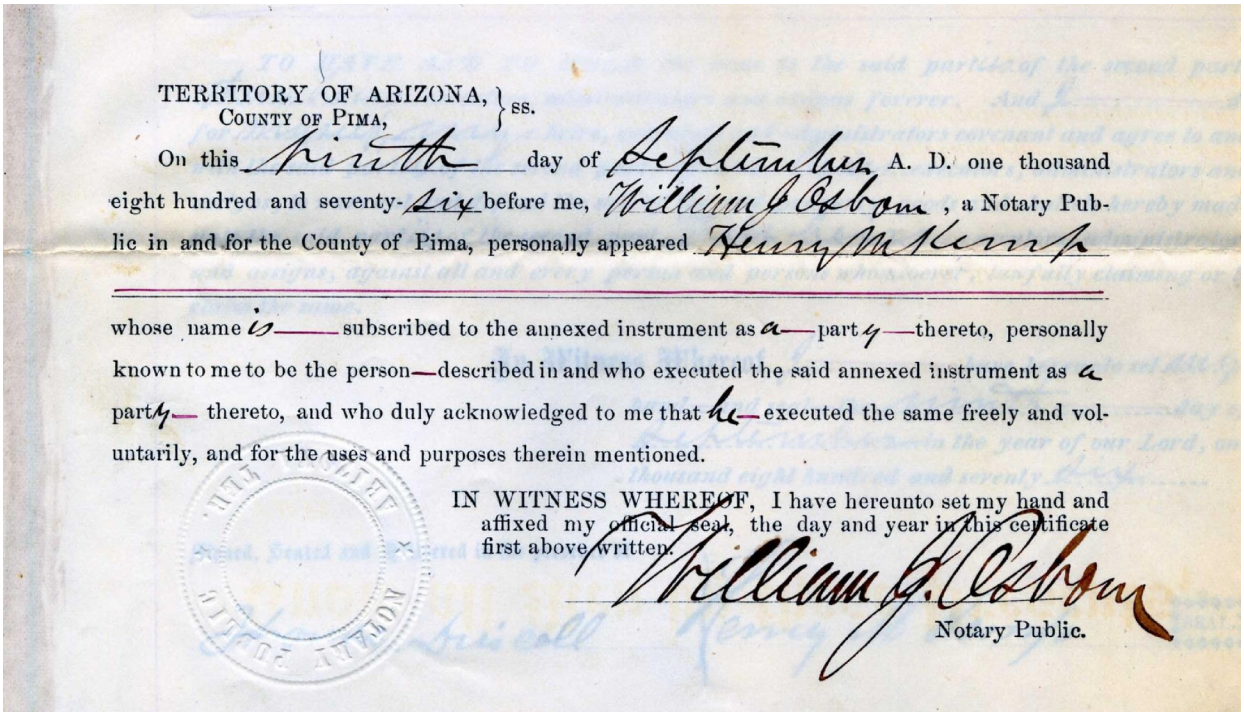
2000. After signing his name with traditional pen and ink, President Bill Clinton also used a smart card encrypted with his digital signature to "e-sign" the Electronic Signatures in Global and National Commerce Act (E-SIGN) into law. **"Sign here" was replaced with "click here".** Since then, we have used credit cards over the Internet as easily as at brick-and-mortar stores. Clinton stated, "Under this landmark legislation, online contracts will have the same legal force as equivalent paper contracts."

2010. The Interstate Recognition of Notarizations Act (IRON) was passed by the Congress, but **vetoed** by President Barack Obama on October 8. An attempt to override the veto failed in the House on November 17. The legislation would have required "any Federal or State court to recognize any notarization made by a notary public licensed by a State other than the State where the court is located when such notarization occurs in or affects interstate commerce."

2012. The Commonwealth of Virginia became the first state to allow a document signer to be in a remote location while having a document notarized electronically by an "e-notary" using audio visual conferencing technology.

II. Tradition Meets Modern Technology

To better understand the encounter between tradition and innovation, let us begin by reviewing the basic functions performed by the traditional common-law notary public. What do notaries actually do? The word *notarize* is helpful, but very broad. Notaries perform specific acts as authorized by state law. The most commonly performed notarial act is the **acknowledgment.**



TERRITORY OF ARIZONA, }
COUNTY OF PIMA, } ss.

On this Ninth day of September A. D. one thousand eight hundred and seventy-six before me, William J Osborn, a Notary Public in and for the County of Pima, personally appeared Henry McKenna

whose name is subscribed to the annexed instrument as a party thereto, personally known to me to be the person described in and who executed the said annexed instrument as a party thereto, and who duly acknowledged to me that he executed the same freely and voluntarily, and for the uses and purposes therein mentioned.

IN WITNESS WHEREOF, I have hereunto set my hand and affixed my official seal, the day and year in this certificate first above written.

William J. Osborn
Notary Public.

Above is a "vintage" acknowledgment certificate **from the year 1876.**

And here is a typical certificate **in use today:**

ACKNOWLEDGMENT CERTIFICATE

State of New York)
) ss.:
County of _____)

On the _____ day of _____ in the year 20____ before me, the undersigned, a Notary Public in and for said State, personally appeared, _____
_____,
personally known to me or proved to me on the basis of satisfactory evidence to be the individual(s) whose name(s) is (are) subscribed to the within instrument and acknowledged to me that he/she/they executed the same in his/her/their capacity(ies), and that by his/her/their signature(s) on the instrument, the individual(s), or the person upon behalf of which the individual(s) acted, executed the instrument.

_____
Notary Public, State of New York

As we can see from these two certificates, the layout and contents have not changed very much in the intervening 139 years. Acknowledgment certificates are, generally speaking, inserted by the attorney who is preparing the documentation or by a paralegal working under an attorney's supervision. For example, mortgages have acknowledgment certificates built into them by the settlement agent, who is the attorney representing the lender. At the closing table, when the mortgage is signed by the borrower, the notary completes the certificate, verifies identity and performs the **oral ceremony** by asking, “Are you signing of your own free will and accord, for the purposes stated in the document?” – to which the signer must respond with an utterance in the affirmative for the acknowledgment to proceed to completion. **Written as well as oral components** are intended to impress a measure of deliberation upon the signer.

Is it reasonable to make the assumption that acknowledgments, as described, could be automated? Advocates of electronic methods are not suggesting the wholesale automation of the entire process. **Audio visual technology** preserves the rapport between the notary and document signer under the unprecedented new rules in Virginia. Specific procedures allow Virginia's electronic notaries to conduct “virtual” interviews with signers through a secure Internet connection; third-party databases can be queried to verify identity. Similarly, Virginia allows witnesses to testify in legal proceedings via closed circuit television. Key features of Virginia's legal framework predisposed this particular state to emerge at the forefront of change. For all other states as well as the District of Columbia, the traditional rules still apply; “virtual”, “remote” and “webcam” protocols do not satisfy the requirement of personal appearance. Signers must appear before the notary in person – in the same room where they are breathing the same air and can look each other in the eyes. At training seminars in all states, notary candidates are cautioned not to officiate in the absence of the signer.

It should be pointed out that traditional notaries in California and 16 other states may display electronic documents on a computer screen during an in-person meeting with the signer. The notary's tamper-proof digital seal and signature are embedded into the final electronic document. These are electronic, but not *remote* electronic, acts. Thanks to President Clinton's E-SIGN Act, the digital signatures are legally equivalent to wet ink signatures.

In addition to the acknowledgment, another commonly performed act is the **oath.** We readily recognize the wording, “I do solemnly swear.... so help me God.” An **affirmation** is the legal equivalent of an oath and is equally binding; the affirmation may end with the words, “under penalty of perjury” in lieu of a reference to a higher power. An **affidavit** is an oath or affirmation that is reduced to a solemn written declaration. There is a higher level of deliberation, since the signer swears to the truthfulness of facts and circumstances detailed in the affidavit, and not merely to be signing freely for the purposes stated therein as with an acknowledgment.

The point to be understood is this: different types of official acts are performed; notaries do not just “notarize”. To further illustrate, other official acts are: taking depositions, carrying out the protest of negotiable instruments, taking inventory of safe deposit boxes when rental fees are not paid, completing nominating petitions for candidates running for public office, and more. In some states, notaries prepare certified copies. In Florida, South Carolina, Maine and Nevada,

notaries are authorized to conduct marriage ceremonies, and they may advertise their services as wedding officiants. What this means for the future is that electronic "modernizing" efforts have only just begun. The various traditional duties are fertile ground for ongoing innovation. **Some procedures appear to be better suited to electronic implementation than others.**

Electronic trends also bring concerns about liability. Procedural steps are matched with the magnitude of the transaction in the *Electronic Authentication Guideline* report, released by the National Institute of Standards and Technology (NIST), under publication number 800-63-2. The report describes technical standards for federal agencies to follow when conducting e-authentication over open networks, such as the Internet, as well as closed networks. Levels of assurance are based on the potential impact or consequences of an authentication error. The risk-based approach is here to stay. For future implementations of electronic notary solutions, general risk assessment is likely to be as important a factor as the type of official act performed.

III. The Identity Space

Personal identity is one of the most relevant topics with respect to the rise of modern consumer technology. When financial transactions are conducted through networks, rather than face-to-face, we need enhanced safeguards to prevent data breaches and identity theft. Trusted networks are characterized by one simple question: How do I know you are who you say you are?

A. Traditional Methods

The most basic method of identification is through **personal knowledge.** By knowing your neighbors for the past five years, you are in a good position to identify them through personal knowledge, which emanates from the family, the community and the workplace. Chances are, you already know a notary. There were 4,380,351 notaries in the U.S. as of 2012 (National Notary Association Census). Nevertheless, sentiment has definitely shifted towards third-party validation. For instance, when processing residential mortgage loans, the notary signing agent is normally directed to obtain satisfactory *documentary* proof of identity even when personal knowledge exists. Under amended notary laws in California, personal knowledge alone is no longer satisfactory proof of identity since 2008.

In the absence of a national ID card, the **driver's license** is our standard form of personal identification. Each state as well as the District of Columbia issues driver's licenses in their own unique formats. The automobile is part and parcel of everyday life, and identity is established through this common thread relating to transportation. In Mexico, the primary form of identification for adults is the *Credencial Para Votar,* or Voter Registration Card. In some provinces of Canada, the provincial health care card is used along with driver's licenses.

The State of New York is not yet in compliance with new federal specifications for driver's licenses. This means that, strictly speaking, a New York driver's license will not be valid for boarding federally regulated commercial aircraft starting in 2016. The Department of Motor Vehicles has requested an extension to bring licenses into compliance. A brand new ID card is available for New York City residents. The idNYC card was introduced on Jan. 12, 2015. It is

available to all New York City residents age 14 or older. Applicants are not asked for immigration or citizenship documents. Los Angeles, San Francisco and Washington, D.C. are among a handful of other cities issuing such cards. U.S. passports are equipped with built-in chips containing **biometric data.** Department of State figures indicate 121,512,341 valid U.S. passport books and passport cards were in circulation in 2014. Although passports are the gold standard, they come at a cost, currently $135 for first-time applicants.

B. The Knowledge Base

What is the amount of your monthly mortgage payment? $800? $1,200? $2,400? – Responses are offered, multiple-choice style, as though you are taking a pop quiz. Evidence of identity can be established by responses to questions that only a given individual would know how to answer correctly. If questions are straightforward, objective and relevant to a person's financial profile, then the question is considered valid for purposes of identity proofing. The method of verifying identity on the basis of personal financial transaction history rests on **the knowledge base.**

Equifax Identity Proofing Solutions are described in a company brochure as follows, “Equifax Identity Proofing Solutions uniquely authenticate an applicant's identity through a five-step process which works by asking intelligent questions related to the applicant's history – like past residences, employment and credit data.”

Equifax, Experian, TransUnion and LexisNexis are leading the way. Their services are filling the void resulting from increasing resistance to identification based on personal knowledge and the obvious deficiencies of ID cards, which can be stolen, altered, counterfeited or noncompliant. Those concerned citizens who lament the fact that “Big Brother is Watching Us” might be surprised to learn of the extensive involvement of private corporations in parallel with government agencies. A series of questions can be sent to the document signer's computer screen, or even to a tablet or smartphone, and then answered through a secure online form in minutes. The questions are derived from proprietary databases amassed by the private sector. Consumer credit reporting agencies have taken on a new role. They have become **identity providers.**

C. Remote Capability

The latest news from Virginia is the passage of the Electronic Identity Management Act, which went into effect on July 1, 2015. The Act establishes an Identity Management Standards Advisory Council “consisting of seven members, appointed by the Governor, with expertise in identity management standards and the creation of guidance documents.” The pioneering spirit of innovation seems unstoppable in the home state of Thomas Jefferson. Previously, the Virginia Electronic Notarization Assurance Standard was published on Jan. 21, 2013, and before that, Virginia passed its landmark legislation allowing a document signer to appear before a notary through a two-way live videoconferencing system.

Satisfactory evidence of identity is described in the *Handbook for Virginia Notaries Public*, with remote e-notary provisions effective July 1, 2012, as follows:

SATISFACTORY EVIDENCE OF THE SIGNER'S IDENTITY – ELECTRONIC NOTARIZATION

(§ 47.1-2) Remote notarization requires a very high threshold for identity assurance. Not only MUST there be a video and audio feed, the notary public will be REQUIRED to assure the identity of the signer by one of the following three options:

1) Personal knowledge. This is already allowed under Virginia law. Simply put, if the notary knows the signer, that will satisfy this requirement.

2) Reliance on prior in-person identity proofing by a third party such as an employer, a law firm, or a bank. Otherwise known as antecedent proofing, this security standard relies upon a prior trust relationship having been created between the signer and a third party. This standard is gaining wide application in electronic commerce.

3) The signer has a digital certificate that is authenticated either by (i) biometrics or (ii) a Personal Identity Verification (PIV) or PIV-I card issued in conformance with strict government standards from the National Institute of Standards and Technology. The use of PIV and PIV-I cards is becoming more prevalent in the public and private sectors. This is as trustworthy and reliable a security standard as can be found currently. The federal government uses this standard in issuing identifications to federal employees and government contractors as well for trusting the identity of emergency first responders.

The last option mentioned, PIV and PIV-I cards, are Personal Identity Verification smart cards issued by the federal government through the Department of Homeland Security. This means the implementation of Virginia's notary laws is strengthened by the presence of tens of thousands of federal employees and contractors based in and around Arlington, Virginia, who operate within controlled environments, have good computer literacy and technical training, and are in possession of credentials recognized by highly reliable identity management systems.

The Interstate Recognition of Notarizations Act (IRON), would have laid the groundwork for remote acts performed in Virginia to be admissible in courts of law in all states. IRON was ultimately **vetoed** by President Obama, whose remarks mentioned "consumer protections, including those for mortgages". To some extent, the proposed legislation was redundant because all states currently provide for the recognition of notarial certificates originating from other states. As the saying goes, "The devil is in the details." Out-of-state certificates have been rejected on technicalities such as wording or differing seal requirements. Starting about six months after the veto, alerts were issued by **nine states** cautioning their citizens <u>not</u> to use online notarization services. Those states were California, Colorado, Nevada, New Jersey, Oklahoma, Oregon, Ohio, Rhode Island and Wisconsin. Regulatory provisions were already in place in Colorado at the time. "Colorado's law specifically emphasizes that electronic notarization is not remote notarization–the signer must appear in the presence of the notary and swear, affirm, or acknowledge the electronic document being notarized," reported the National Association of Secretaries of State (*Issues and Trends in State Notary Regulation*, 2011).

Customary in-person protocols have been handed down from generation to generation for more than 2,000 years since Roman times. A **tipping point** has been reached today. The debate goes on. What if someone is positioned out of sight of the camera with a loaded gun pointed at the

document signer? Proponents of the virtual procedure rightly suggest that traditional methods are not immune to foul play either; a loved one could be held hostage in the parking lot when the signer walks into a bank branch or pharmacy seeking notary services. Also, proponents point to the comprehensive identity proofing requirements via third-party trust relationships or, coincidentally, personal knowledge as well. It is refreshing to see personal knowledge preserved as a valid means of identification in conjunction with the latest technology. Audio and video feeds from the online interview must be recorded and archived for five years.

The crux of the matter is **remote capability.** While a document signer sitting in Virginia need not appear in person before a Virginia notary, California notaries do sit side-by-side with signers when viewing documents on a computer screen. Let us reiterate for the sake of clarity: *remote e-notary procedures in Virginia should not be confused with procedures in California and 16 other states, where e-notaries are still held to the traditional in-person requirement, as of this writing.*

"E-filing" is another matter altogether. In a growing number of jurisdictions, property deeds and mortgages are transmitted electronically by "approved submitters" (attorneys, settlement agents and title insurance companies) directly to the County Clerk. Attorneys routinely e-file documents with courts around the country. But common e-filing provisions are not at all comparable with the unprecedented powers of Virginia e-notaries, who are authorized to interact with signers over an Internet connection with secure two-way audio and video transmission in the performance of their official duties and functions. Documents are executed online, in real time. In contrast, a deed or mortgage is already a "done deal" by the time it is forwarded to the County Clerk; the duly executed document serves as evidence that the transaction was consummated; and the conveyance rests upon the good faith of the notary's acknowledgment. The County Clerk receives and enters the document into the real property records of the jurisdiction.

IV. Journals, the Blockchain and More

A. Notarial Journals

One of the recommended best practices for notaries, and a common requirement in many states, is the keeping of a **journal of official acts.** The traditional paper journal is a continuous ledger consisting of a bound, tamper-proof volume. Each new entry is made immediately following the previous one without skipping lines in between. This method leaves no blank space for entries to be inserted arbitrarily. Thus, notarial acts are listed in chronological order.

Typical entries have the date, names of document signers, title of the document being signed, types of identification presented, and the identification numbers, issue dates and expiration dates. The notary does not keep copies of ID cards, but rather writes down the pertinent facts. There is some variation from state to state. For example, in Texas and Montana, ID card serial numbers are not noted. The type of official act may be described, e.g. acknowledgment, oath, etc.

Consequently, when journaling is done properly, the particulars associated with every act are available for lookup. Missing data may also tell a story. Any impersonation of the notary

for fraudulent purposes, such as when a notary's identity is stolen and his signature forged, would result in conspicuous omissions from an otherwise well documented history of signings. The case of Christopher J. Warren, who was accused of defrauding a lender before fleeing to Beirut, Lebanon on a privately chartered jet, involved the theft of at least one notary's identity as part of a fraudulent mortgage scheme. Warrren was later arrested when attempting to re-enter the U.S. with a counterfeit passport and thousands of dollars hidden in his cowboy boots. FBI agents seized a safe-deposit box rented by him under an assumed name, holding 276 gold coins. He was sentenced to more than 14 years in prison and ordered to pay restitution of $19 million. While giving a deposition in a civil suit connected with the case, California notary Joan Sampson used her journal to help prove that she had not performed the notarizations, according to the *Notary Bulletin* (National Notary Association, Jan. 25, 2012).

California stands out because of its stringent requirements including the signer's thumbprint on certain documents affecting real estate while New York has no journaling requirements at all. Efforts to impose the requirement have stalled in New York's legislature. “The failure to keep thorough records to document and protect notarizations has been a fact of life for the vast number of U.S. notaries for much longer than a century, and few people seem to care,” wrote Michael Closen and Charles Faerber. “Quite unfortunately, as the most notorious illustration, negligent and unethical notaries assisted some of the **terrorist hijackers** responsible for the September 11, 2001, airliner attacks by providing notarizations on instruments used by those terrorists to obtain false identity documents, thereby contributing to the opportunity of the terrorists to carry out their plot…. It is doubtful that the terrorists chose a jurisdiction which did not statutorily require notarial journalizing purely by coincidence.” Nineteen states require journaling by statute or executive order, and two of these require it for e-notaries only. The Revised Uniform Law on Notarial Acts, approved by the Uniform Law Commission in 2010, describes journals as optional and leaves the matter to the states to decide. Meanwhile, the Model Notary Act of 2010, published by the National Notary Association, clearly mandates the practice.

Journals may be kept electronically depending on individual state rules. At some retail bank branches where tellers occupy the dual role of teller as well as notary, the teller-notaries are directed by management to enter their official acts into an Excel spreadsheet. But an electronic spreadsheet presents its own challenges, since records are not necessarily tamper-proof, and managing digital files can raise more security concerns than traditional bound volumes. Let us move on to explore a novel approach to journaling through a better use of technology.

B. Introduction to the Blockchain

The blockchain provides for ongoing, sequentially ordered record keeping. Its implications are far-reaching. Notary and real estate scenarios are just the beginning. Any activities involving long-term document storage along with reliable timestamping are likely to benefit.

In 2012, software developer Manuel Araoz created a web service that inserts a string of data into an electronic ledger upon request. At the moment of insertion, the data is automatically timestamped. The data may consist of anything from a few words to a multi-page electronic document. Thanks to special encoding features, it is nearly impossible for someone to reverse the

process without the necessary digital key, while at the same time the document owner may unlock the digital file for viewing, at will. Thus, **proof of existence** at a given date can be demonstrated. Araoz's project represents the earliest known attempts to leverage the revolutionary new data structure known as the blockchain.

Briefly, here are some common technical considerations. What is “committed” to storage is a cryptographically encoded string. An effective **commitment scheme** does two basic things: (1) It allows the user to enter a chosen value, string, or statement while keeping it hidden from others, and (2) Provides the capability to reveal the committed data later. For now, the underlying foundation of most blockchain-related projects is the **Bitcoin network.** Bitcoin can be described as an e-commerce payment system with a public ledger. The concept was first put forth by Satoshi Nakamoto in 2008. Computer users from around the world created a decentralized peer-to-peer network on which the system is hosted. All records are distributed across the network onto local storage systems, i.e. the hard drives of participating individuals. It is practically impossible to falsify an entry without an anomaly being detected by other network nodes.

Each component block has a data field designated to accommodate an encoded string. The benefits of this feature are self-evident. **We now have an easily accessible, widely distributed public ledger into which anyone with a computer, tablet or smartphone can embed verifiable, unalterable, timestamped entries at very low cost** – as little as one-third of one U.S. cent, based on the default value of 1/100,000th of a Bitcoin, at current rates.

Affordability is further enhanced by techniques of bundling records together into parallel structures that are, in turn, tied to the component blocks. An amazing amount of data – **28,000 volumes** from Project Gutenberg (a non-profit organization dedicated to preserving culturally significant books and manuscripts) – were **secured** into *only four blocks* in January 2015. The demonstration was carried out by the **Factom Project.**

Factom began in May 2014 under the guidance of tech entrepreneur and visionary Paul Snow, who was soon joined by Peter Kirby, David Johnston and others. Please note the author of this paper joined the Factom Foundation Advisory Board in March 2015. Our concerted efforts are focused on providing a **general purpose data layer.** Here are the stated Design Goals:

> *When Satoshi Nakamoto launched the Bitcoin blockchain he revolutionized the way transactions were recorded. There had never before existed a permanent, decentralized, and trustless ledger of records. Developers have rushed to create applications built on top of this ledger. Unfortunately, they have been running into a few core constraints intrinsic to the original design tradeoffs of Bitcoin.*
>
> *1) Speed – because of the design of the decentralized, proof-of-work consensus method used by Bitcoin, difficulty requirements are adjusted to maintain roughly 10 minute confirmation times. For applications that wish greater security, multiple confirmations may be required. A common requirement is to wait for 6 confirmations, which can lead to wait times over an hour.*
>
> *2) Cost – the default transaction cost is around .01 mBTC (roughly $0.003 USD in*

> *November 2014). The exchange price of BTC has been volatile throughout its history. If the price of BTC rises, then the cost of transactions can go up. This can prove to be a serious cost barrier to applications that need to manage very large numbers of transactions. Additionally, many factors including constraints on block size and reward halving could act to increase transaction fees.*
>
> *3) Bloat – with the Bitcoin blockchain size limit of 1 MB per block, transaction throughput is capped at 7 transactions per second . Any application that wants to write and store information using the blockchain will add to the traffic. This problem has become politically charged as various parties seek to increase the block size limit.*
>
> *Factom is a protocol designed to address these three core constraints. Factom creates a protocol for Applications that provide functions and features beyond currency transactions. Factom constructs a standard, effective, and secure foundation for these Applications to run faster, cheaper, and without bloating Bitcoin.*

The protocol is described as a "permanent, decentralized and trustless ledger of records". It is *permanent* because of the immutable nature of records that are sequentially anchored into the blockchain; it is *decentralized* because the record-keeping system is designed to run simultaneously on numerous servers spread across the surface of the Earth; it is *trustless* in the sense that we need not depend on human auditors to perform continuous validity checks on the entered blocks. The resulting type of validation is known as **consensus validation.**

While Factom has earned much-deserved recognition as a pioneering technology think-tank eager to share its findings with the world, other reputable ventures seeking to build upon the blockchain include Counterparty, Ethereum, MaidSafe and Storj. Early players in the Bitcoin space were mostly software developers and tech entrepreneurs. Now, the wider business community has started to take notice. **J.P. Morgan, Goldman Sachs, Barclays, State Street, UBS, Royal Bank of Scotland, Credit Suisse, BBVA** and **Commonwealth Bank of Australia** are currently exploring potential uses of Bitcoin and blockchain technology. Among the most committed firms is **Nasdaq.** Bloomberg Business reported on July 23, 2015: "The technology will be of fundamental importance to Wall Street," Nasdaq Chief Executive Officer Bob Greifeld said during a phone interview. "The benefits to the industry are immense and cannot be ignored."

C. Leveraging the New Technology

At the most basic level, when seen from a notary's perspective, the functionality of the new data structure bears a close resemblance to the workflow of traditional journaling. As a matter of fact, the electronic archiving process layered upon the blockchain is consistent with traditional journaling patterns where entries are sequential and timestamped. In theory, a single entry or grouping of entries from a notary's journal could be encrypted and permanently logged.

Over the next few years, we will see the emergence of cost-effective, reliable **journaling software "apps" anchored to the blockchain** for the purpose of secure online notarial journaling. Eventually, these apps will conform to reporting requirements that vary from state to state. A byproduct of the interaction among those who become agents of change – software developers, notaries, authorities and associations – is likely to be the consolidation and

realignment of standardized procedures for journaling. But there is far more to be gained from the tremendous potential of this technology. Riding the wave of favorable publicity along with increasing acceptance by regulators, advocates of blockchain technology foresee opportunities across major industries beginning with real estate, legal, financial, insurance and healthcare.

Let us touch on the **implications for real estate and home ownership.** The “permanent, decentralized and trustless” model will help foreign countries that are challenged by land fraud. In at least one Latin American country, a study is already underway in response to a scenario where administrators allegedly exceeded their authority by altering the **chain of title,** or history of ownership, of land holdings within their official records, for personal gain. Our challenges here in the U.S. are qualitatively different. To begin with, property recording systems here in the U.S. are highly reliable, and there are very few incentives for jurisdictions to entertain the thought of restructuring them. Even if presented with novel alternatives, homeowners themselves will continue to rely on the legal protections of standard recording procedures at the local County Clerk together with title insurance. Incidentally, the title insurers along with real estate law firms and a host of intermediaries are sources of work for notary signing agents, also known as mobile notaries. These notaries specialize in mortgage loan document signings. Anything that happens within the industry as a whole is relevant to their livelihoods. For instance, a new federal regulatory agency, the **Consumer Financial Protection Bureau,** emerged in 2011, and its policies have put lenders and third-party vendors under increased scrutiny.

While our property recording systems are in perfectly good working order, we are still coming to terms with the consequences of questionable lending practices. The mortgage industry is still haunted by the foreclosure crisis that erupted in 2010 together with the infamous **Robo-Signing Controversy.** The events coincided with President Obama's veto of IRON. Five large banks were ordered to provide $26 billion in relief to distressed borrowers and in direct payments to the states and federal government. Subsequent penalties relating to mortgage-backed investments amounted to billions more. The controversies pointed to an issue that notaries know all too well, the **paperwork burden** associated with mortgage document packages. The average size of mortgage files varies from state to state. Mortgages of 15-20 pages in length, along with all of the accompanying disclosures, title affidavits and related documentation, and extra copies to be executed, can amount to 150 pages for residential properties in New York. Each and every document within a given package has a statutory duration, measured in years, for which it must be retained and made available to the State Attorney General, and federal authorities as well, in the event of an audit. The most critical pages are the notarized mortgage itself, or deed of trust as the instrument is known in some states, which is recorded by the County Clerk, where per-page recording fees usually apply. But the rest of the package is not submitted for recording; documents are placed in safekeeping by the lender or by hired contractors. As a result, distressed borrowers have delayed their foreclosure proceedings by demanding that the lender produce key documents from the package. By demanding that the lender produce one element of the package in particular – the promissory note, i.e. the borrower's signed promise to pay, borrowers have staved of foreclosure proceedings for months. Further complications arise when the lender **assigns** the mortgage to another company; mortgages may change hands several times over the life of the loan, a scenario which makes the paperwork even harder to track down. The MERS

System – designed to track and facilitate transfers – allows assignment to occur without filing all over again at the county level. Those who are left holding the bag at collections and default servicing need better access to the original documentation. The Robo-Signing Controversy was perpetrated by contractors who produced fraudulent documents to push the foreclosure process forward. “The post-closing process now requires rigorous document management, auditing and reporting capabilities to ensure that documentation is complete and in compliance. And, if a servicer’s post-close document environment lacks clear and consistent management, its team is spending time working with hundreds or thousands of jurisdictions and searching for files and related documents instead of time on mission-critical responsibilities,” wrote Michelle Rowley in *National Mortgage News.* “Servicing shops” have taken on the job of cleaning up the mess from the last lending frenzy. **Within the coming five to ten years, the mortgage industry will learn to embrace blockchain-based solutions to mitigate its record-keeping challenges.**

V. Conclusion

Just as 28,000 books were securely anchored into the blockchain as a proof-of-concept demonstration, legal documents will be indexed and stored in the same manner, routinely, in the years to come. The documents will be protected by military-grade encryption, yet available at all times by unlocking them with the proper digital keys. Improved audit trails will provide evidence of competence, professionalism and compliance in the event that any questions should arise about a given transaction. The notary's role is not threatened by these newly emerging electronic protocols, and notaries will derive immediate benefits when the inherent journaling capabilities are harnessed through software apps, subject to state laws.

Notaries should not be intimidated by the technological innovations at the center of Virginia's e-notary revolution. Nine states have cautioned their citizens not to use online notarization services. While considerable skepticism and political opposition remain to be overcome with respect to *remote* electronic notarization, traditional services rendered in person by electronically enabled notaries will find increasing levels of acceptance among the general public.

More broadly speaking, notaries are eyewitnesses to new expectations concerning relationships and trust in the Digital Age. Liability and accountability are big concerns. There is growing sentiment that a risk-based approach to any transaction involving notarization is just as important as the traditional standard of care based on the type of official act being performed. Some of the various official acts performed by notaries appear to be better suited than others with respect to electronic development and implementation.

According to the Property Records Industry Association, “Whether the document is on paper or in electronic form, the notary's essential role is still the same.” And yet, history marches on. The notary figures of Roman times, whose work reflected the honorable principle of *fides publica*, rendered their official services while lacking a resource that we take for granted – paper – because it had not yet been invented. We are now headed in a new and unprecedented direction that is both paperless and electronic. The challenges of antiquity have returned in new clothing.

Bibliography

2010 United States Foreclosure Crisis - Wikipedia, the Free Encyclopedia. (n.d.). Retrieved October 27, 2015, from https://en.wikipedia.org/wiki/2010_United_States_foreclosure_crisis

Ahlers, Sr., G. (1998). The Impact of Technology on the Notary Process. *John Marshall Law Review*, *31*(3), 911.

Anderson, R. G., & Reutenik, D. (Producers). (2011, April 3). *The Next Housing Shock* [Television broadcast]. 60 Minutes, CBS.

Araoz, M. (2012). Proof of Existence. Retrieved from https://www.proofofexistence.com

California Secretary of State. (2014). *Notary Public Handbook*.

Closen, M. L., & Dixon, G. G. (1992). Notaries Public From the Time of the Roman Empire to the United States Today and Tomorrow. *North Dakota Law Review*, *68*(4), 873.

Closen, M. L., & Faerber, C. N. (2009). The Case That There Is A Common Law Duty Of Notaries Public To Create And Preserve Detailed Journal Records Of Their Official Acts. *John Marshall Law Review*, *42*(2), 231-455.

Colorado Secretary of State. (2013). *Notary Handbook*.

Commitment Scheme - Wikipedia, the free encyclopedia. (n.d.). Retrieved October 20, 2015, from https://en.wikipedia.org/wiki/Commitment_scheme

Consumer Financial Protection Bureau. (n.d.). *TILA-RESPA Integrated Disclosure rule implementation*. Retrieved October 27, 2015, from http://www.consumerfinance.gov/regulatory-implementation/tila-respa/

Delaney, A. (2010, October 7). Obama Will Not Sign Bill Seen As Cover For Bank Foreclosures. Retrieved from http://www.huffingtonpost.com/2010/10/07/obama-pocket-veto-foreclosures_n_753987.html

Detrixhe, J., & Hoerger, R. (2015, July 23). Nasdaq Expects to Be First Exchange Using Bitcoin Technology. *Bloomberg Business*. Retrieved from http://www.bloomberg.com/news/articles/2015-07-23/nasdaq-expects-to-be-first-exchange-to-use-bitcoin-technology

Digital Identity Law (SB814). (2015). Virginia General Assembly.

Digital Signature Guidelines. (1996). Chicago, IL: American Bar Association.

E-Authentication Guidance for Federal Agencies (M-04-04). (2003). Office of Management and Budget.

Electronic Authentication Guidelines (800-63-2). (2013). Washington, DC: National Institute of Standards and Technology, U.S. Department of Commerce.

Factom: A Data Layer for the Blockchain. (2014). *YBitcoin.com*, *2*(1), 57.

Federal Bureau of Investigation. (2009, February 13). FBI — Captured Fugitive Christopher J. Warren's Safe Deposit Box in Phoenix Bank Searched by Federal Agents. Retrieved from https://www.fbi.gov/sacramento/press-releases/2009/sc021309.htm

Flynn, D. (1986). *Introduction to Real Estate Law* (2nd ed.). St. Paul, MN: West Pub. Co.

Governor's Reference Manual for Notaries. (2001). State of Florida, Office of the Governor, Notary Section.

Greenwood, D. J. (2006). *Electronic Notarization: Why It's Needed, How It Works and How It Can Be Implemented to Enable Greater Transactional Security*. Massachusetts Institute of Technology and National Notary Association.

Grossman, A., Glaser, E., & Rexrode, C. (2014, December 21). How a Memo Cost Big Banks $37 Billion - WSJ. Retrieved from http://www.wsj.com/articles/how-a-memo-cost-big-banks-37-billion-1418959802

Identity Proofing Brochure (EFX-ANA-1030-02/02/13). (2013). Retrieved from Equifax Inc. website: http://www.equifax.com/assets/IFS/efx_identity_proofing.pdf

Issues and Trends in State Notary Regulation. (2011). Washington, DC: National Association of Secretaries of State.

Kelly, J. (2015, September 15). Nine of World's Biggest Banks Join to Form Blockchain Partnership. *Reuters*. Retrieved from http://www.reuters.com/article/2015/09/15/us-banks-blockchain-idUSKCN0RF24M20150915

Kirk, J. (2013, May 23). Could the Bitcoin Network Be Used as an Ultrasecure Notary Service? *Computerworld*. Retrieved from http://www.computerworld.com/article/2498077/desktop-apps/could-the-bitcoin-network-be-used-as-an-ultrasecure-notary-service-.html

Lewis, M. (2012, January 5). California Man Pleads Guilty In Stolen Notary ID Case. Retrieved from http://www.nationalnotary.org/notary-bulletin/blog/2012/01/california-guilty-notary-id-case

Lewis, M. (2014, March 5). eSignatures, eNotarization, Webcam Notarization And iClose: What's The Difference? Retrieved from http://www.nationalnotary.org/notary-bulletin/blog/2014/03/esignatures-enotarization-iclose-difference

The Model Notary Act. (2010). Chatsworth, CA: National Notary Association.

Mortgage Electronic Registration Systems - Wikipedia, the Free Encyclopedia. (n.d.). Retrieved October 20, 2015, from https://en.wikipedia.org/wiki/Mortgage_Electronic_Registration_Systems

Nakamoto, S. (2008). *Bitcoin: A Peer-to-Peer Electronic Cash System*.

NASS Resolution Reaffirming Support of the National Electronic Notarization Standards. (2011). Washington, DC: National Association of Secretaries of State.

National E-Notarization Standards Public Hearing Transcript. (2006). Washington, DC: NASS National E-Notarization Commission.

National Notary Association. (2012). The Official 2012 NNA Census. *The National Notary*.

New York Department of State. (2013). *Notary Public License Law*.

Notary Best Practices for Recordable Documents. (2012). Morrisville, NC: Property Records Industry Association.

Notary News - New Notary Laws Effective January 1, 2008. (2007). Retrieved from California Secretary of

State website: http://notary.cdn.sos.ca.gov/forms/notary_newsletter_2008.pdf

The Notary Public Code of Professional Responsibility. (2009). Chatsworth, CA: National Notary Association.

Office of the Secretary of the Commonwealth of Virginia. (2011). *A Handbook for Virginia Notaries Public*.

Online Notarization Is Illegal in Oklahoma. (2011, October 23). Retrieved from http://www.notaryrotary.com/archive/forum/2011/October/Online_notarization_is_illegal_in_Oklahoma.html

Osborn, W. J. (1876, September 9). *Notary Document for 1876 Bill of Sale* [Notary Document for 1876 Bill of Sale for properties and animals related to the expansion of the Empire Ranch.]. Retrieved from http://uair.library.arizona.edu/item/294496

Passports Statistics - Valid Passports in Circulation by Year. (2014). Retrieved from http://travel.state.gov/content/passports/en/passports/statistics.html

Piombino, A. E. (1996). *Notary Public Handbook: Principles, Practices & Cases*. Poughkeepsie, NY: East Coast Pub.

Reiniger, T., & Hansberger, R. (2011). Virtual Presence: Online Notarization and the End of Physical Appearance in the Digital Age. *The SciTech Lawyer. American Bar Association*, *8*(2).

Revised Uniform Law on Notarial Acts of the Uniform Law Commission. (2010). Chicago, IL: National Conference of Commissioners on Uniform State Laws.

Richards, R. J. (1999). The Utah Digital Signature Act as a "Model" Legislation: A Critical Analysis. *John Marshall Journal of Information Technology & Privacy Law*, *17*(3), 873-907.

Rowley, M. (2013, February 26). National Mortgage News - Post-Closing Mortgage Document Management Issues. Retrieved from http://www.nationalmortgagenews.com/blogs/lens/post-closing-mortgage-document-management-issues-1034752-1.html

Sacramento Business Journal. (2012, January 10). Folsom man pleads guilty to defrauding lender. Retrieved from http://www.bizjournals.com/sacramento/news/2012/01/10/folsom-warren-wire-fraud-id-theft-pleads.html

Snow, P., Deery, B., Lu, J., Johnston, D., & Kirby, P. (2014). *Factom: Business Processes Secured by Immutable Audit Trails on the Blockchain*. Retrieved from Factom website: http://www.factom.org

Snow, P., Deery, B., Kirby, P., & Johnston, D. (2015). *Factom Ledger by Consensus*. Retrieved from Factom website: http://www.factom.org

Thun, D. (2014, October 16). What Every Notary Needs To Know About Journals. Retrieved from http://www.nationalnotary.org/notary-bulletin/blog/2014/10/what-every-notary-needs-to-know-about-journals

United States. Congress. House. (2010). *Interstate Recognition of Notarizations Act of 2010* (H.R. 3808, 111th). Office of the Clerk of the U.S. House of Representatives.

United States. President (2000- : Clinton). (2000). *Remarks by the President at Signing of the Electronic Signatures in Global and National Commerce Act*. Office of the Press Secretary. The White House.

United States. President (2009- : Obama). (2010). *Veto Message on H.R. 3808: Message from the President of*

the United States Transmitting Notification of the Veto of H.R. 3808, the "Interstate Recognition of Notarizations Act of 2010". U.S. G.P.O.

United States. (2000). *Electronic Signatures in Global and National Commerce Act*. U.S. G.P.O.

Valera, M. G. (1999). New Technology and a Global Economy Demand That American Notaries Better Prepare for the Future: Upgrading the Current Common Law System May Mean Establishing a New Class of Cyber Professional. *John Marshall Law Review*, *32*(4), 935-964.

Van Alstyne, P. A. (Ed.). (2001). *Van Alstyne's Notary Public Encyclopedia*. Salt Lake City, UT: Wasatch Peaks Pub.

Van Alstyne, P. J. (1999). The Notary's Duty of Care for Identifying Document Signers. *John Marshall Law Review*, *32*(4), 1003-1031.

Wedgwood, W. B., & Homans, I. S. (1867). *A Law Manual for Notaries Public and Bankers: Including a Summary of the Law and Principles of Commercial paper, the Law of Endorsement, Negotiability, Demand and Protest, and the History of Bills of Exchange*. New York: Bankers' Magazine.

What Every Servicer is Going to Need to Know Shortly. (2013). *National Mortgage News*, *37*(32), 1.