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Report on Nevada In-State Crypto Currency System (NICCS) State-legalized Marijuana

Report Summary

The Nevada In-state Crypto Currency (NICCS) is a convenient and secure digital currency that acts as a value store and medium of exchange. The report will explore applying this as a single purpose medium of exchange for Nevada's legal marijuana industry, a state crypto currency. NICCS has many advantages the most compelling of which that it is not anonymous like Bitcoin. The NICCS exchange uses immutable record keeping methods, which makes it usable for industry compliance and enforcement. In one embodiment it is possible to implement what is effectively an automatic point-of-sale taxation of the industry, deriving immediate revenue for the State.

Unlike other digital currencies, NICCS has full liquidity. Industry participants, including consumers, dispensaries, growers, and the State of Nevada, can store or transfer digital value on the NICCS exchange. Records are stored using an immutable record keeping system that prevents tampering and creates permanent documentation usable in compliance and enforcement. NICCS provides a solution to the most pressing problems of the marijuana industry, including dangerous cash stockpiles, incomplete and inaccurate sale records, and high tax collection costs.

I. Challenges in Legal Marijuana

Over twenty three states and the District of Columbia have legalized marijuana in some form.¹ Four states have also legalized recreational use, with Colorado selling

¹ GOVERNING.COM, *State Marijuana Laws Map* (June 2015), <http://www.governing.com/gov-data/state-marijuana-laws-map-medical-recreational.html>.

over 150,000 pounds of legal recreational marijuana in 2014.² Still, marijuana remains a “Schedule I” controlled substance at the federal level. The federal government appears to be deferring to state governments, including possible decreased priority within the Justice Department.³ However, federal agencies are sending mixed messages as they continue to enforce marijuana-related rules.⁴ Banks insured by the Federal Deposit Insurance Corporation (FDIC), including state-chartered banks, are not accepting marijuana-derived revenue.⁵ For example, First Security Bank of Nevada recently reversed course on its plan to accept marijuana deposits, citing high compliance cost and an inability to interpret federal rules.⁶

Lack of banking services for the cannabis industry causes problems for industry participants, including consumers, businesses and state governments.⁷ These parties are forced to use physical currency without the support of the national banking system. Payment is inefficient and physical currency builds up at dispensaries and growing operations, increasing risk of robbery.⁸ Some have turned to Bitcoin to store value.⁹ But Bitcoin’s limitations, including its volatility, make it risky for this purpose.¹⁰ Its use also has the potential to be construed as money laundering or

² COLORADO DEPARTMENT OF REVENUE, *Marijuana Enforcement Division: Annual Update* (2014) at 18, available at https://www.colorado.gov/pacific/sites/default/files/2014%20MED%20Annual%20Report_1.pdf.

³ Christopher Ingraham, *How the Justice Department seems to have misled Congress on medical marijuana* (Aug 2015), <http://www.washingtonpost.com/news/wonkblog/wp/2015/08/06/the-justice-department-says-it-misled-congress-on-medical-marijuana/>.

⁴ See, e.g., Hilary Brickhen, *Dude, Where’s My Marijuana Trademark?* (Mar 2015), <http://abovethelaw.com/2015/03/dude-wheres-my-marijuana-trademark/>.

⁵ See Axel Gerdau and John Woo, *Guns, Drugs and Money* (2015), <http://www.nytimes.com/video/business/10000003491301/in-colorado-marijuana-pot-industrys-banking-problem.html?action=click>ype=vhs&version=vhs-heading&module=vhs®ion=title-area> (“cannabis as a product is not a publicly safety issue, lack of banking for the industry is a far more dangerous problem.”).

⁶ Neal Gidvani, *Nevada Cannabis Businesses: Where Are You Going to Bank?* (June 2015), <http://www.cannalawblog.com/nevada-cannabis-businesses-where-are-you-going-to-bank/>.

⁷ Alison Malsbury, *Cannabis Banking: It’s That Important* (Dec 2014), <http://www.cannalawblog.com/cannabis-banking-its-that-important/>.

⁸ See Axel Gerdau and John Woo, *Guns, Drugs and Money* (2015), <http://www.nytimes.com/video/business/10000003491301/in-colorado-marijuana-pot-industrys-banking-problem.html?action=click>ype=vhs&version=vhs-heading&module=vhs®ion=title-area>

⁹ Robert McVay, *Cannabis Banking: Is Bitcoin the Answer?* (Nov 2014), <http://www.cannalawblog.com/cannabis-banking-is-bitcoin-the-answer/>.

¹⁰ See, e.g., Jon Southhurst, *Most Mt Gox Bitcoins Were Gone by May 2013, Report Claims* (Apr. 2015), <http://www.coindesk.com/most-mt-gox-bitcoins-were-gone-by-may-2013-report-claims/>.

other federal offenses, providing serious disincentives to an industry attempting to move into the open.¹¹

Physical dollars or virtual Bitcoin is not beneficial for the State of Nevada. Records are often incomplete and inaccurate. This comes at a time when insight into the burgeoning industry is critical, especially to craft legislation, promulgate rules, and protect the public.¹² Both cash and Bitcoin also make tax revenue difficult to calculate and collect. Costs of collection are high, for example requiring additional overhead such as armed escorts. Faced with indecision from banks, the legal marijuana industry is in need of a way to store and transfer value that works within Nevada's developing regulatory framework.

II. NICCS Digital Currency

The Nevada In-state Crypto Currency (NICCS) is a convenient and secure digital currency that acts as a value store and medium of exchange. The report will explore applying this as a single purpose medium of exchange for Nevada's legal marijuana industry, a state crypto currency. NICCS has many advantages the most compelling of which that it is not anonymous like Bitcoin. The NICCS exchange uses immutable record keeping methods, which makes it usable for industry compliance and enforcement. In one embodiment it is possible to implement what is effectively an automatic point-of-sale taxation of the industry, deriving immediate revenue for the State.

2.1 Overview

The NICCS process begins when "proofs" are generated by a secure electronic mint. Each proof is physically embodied, with each individual "Nic" corresponding to a single proof. Digital Nics are authorized to be issued on the NICCS exchange. Members of the NICCS exchange may buy and sell NICCS for fiat currency (money). Members of the exchange use NICCS to store value, or can use them as a medium of exchange within that group. The exchange tracks all transactions in a permanent immutable record that can be used for auditing, tax calculation and regulatory compliance.

¹¹ Robert McVay, *Cannabis Banking: Is Bitcoin the Answer?* (Nov 2014), <http://www.cannalawblog.com/cannabis-banking-is-bitcoin-the-answer/> ("[Bitcoin is] not a panacea, nor is it a viable alternative to having a functioning bank account.").

¹² For example, Colorado has implemented a comprehensive "seed-to-sale" tracking system. COLORADO DEPARTMENT OF REVENUE, *Marijuana Enforcement Division: Annual Update* (2014) at 12, available at https://www.colorado.gov/pacific/sites/default/files/2014%20MED%20Annual%20Report_1.pdf.

2.2 NICCS Digital Currency Properties

NICCS is a modified version of the ModeOS “Units” cryptographic commodity technology.¹³ NICCS cryptographic currency is very different from all earlier generation crypto-currencies like Bitcoin. The most obvious advantages includes:

- i. ***Private, not anonymous.*** Only encrypted data is kept on the exchange and only the user has the key to their data. NICCS is private. The User block chain is distributed database across all user phones. This means there is no central record of the users activity. The NICC ledger is centralized. this means the record of ownership is auditable. NICCS is designed to work within existing legal frameworks. This makes it not very useful for illegal activities.
- ii. ***Easy to use.*** NICCS is easy to use, with the ability to track and transfer value using familiar software such as smartphone “apps.” The interface is simple and, unlike Bitcoin, it is hard for users to inadvertently lose value or make mistakes during transfer. The NICCS exchange retains the ability correct mistaken transfers.
- iii. ***Financially secure: full liquidity in dollars.*** In exchange for a newly issued Nic a user pays one dollar that is placed in trust with a fiduciary. If the NICCS exchange is dissolved the fiduciary redistributes this backing to Nic-holders minus any transaction fees. While the value of the exchange has a floor, the value can float above this minimum value when all Nics of a mint have been issued.
- iv. ***Secure accounts.*** Built into the NICCS exchange software is a ModeOS authentication system called RevAuth. RevAuth replaces passwords with unforgeable electronic identity credentials. RevAuth makes it difficult to break into user accounts or hack NICCS. Theft is also unlikely due to the non-anonymity of NICCS users. Individual user records can be backed up by a remote cloud service.
- v. ***Immutable record system for compliance and auditing.*** The NICCS exchange maintains ownership records in a cryptographically secure data structure called a blockchain. The resulting record is accurate and makes tampering difficult if not impossible.
- vi. ***Rapid settlement.*** Settlement is almost instant, making NICCS suitable for being the rail for point-of-sale transactions.
- vii. ***Recoverable exchange.*** The NICCS exchange includes redundant and replicated data to ensure technological recovery from a network failure. NICCS is

¹³ ModeOS Units is a secure, digital commodities system for use within a specific industry. It is designed to function within existing financial and legal frameworks.

also financially recoverable, with the fiduciary able to liquidate the trust and return dollars to Nic-holders.

viii. *Judicial Recourse.* Only encrypted data is kept on the exchange and only the user has the key to their data. The exchange has no access to user data. CryptoCurrency is a new market. Just as email is to postal mail, cryptocurrency is to banking. Along with that evolution require some rethinking of how the legal framework is interpreted. On a user's phone is an indisputable record of transaction, which may be subpoena, confiscated just as any other record in user possession in the real world.

ix. *Geographic boundary restrictions.* NICCS transactions can be confined to specific areas, such as state borders.

x. *Point-of-sale taxation.* It is possible to create a configuration where tax revenue is automatically calculated and remitted directly to the state account at point-of-sale. The state can sell the virtual currency directly to members thus in effect creating a point of sale taxation.

These properties put NICCS is in stark contrast to cryptocurrencies such as Bitcoin. They also make NICCS an ideal medium of exchange for Nevada's new marijuana industry.

III. Industry Implementation

Several implementation patterns are possible with NICCS, including limited involvement from the State, including:

3.1 Roles and Stakeholders

i. **Mint authority.** NICCS are generated by an electronic mint and physically minted as “proofs” on a special physical memory device. Each issued Nic is traceable to one of the resulting physical “proofs.” Nics are then authorized for issuance by an exchange to consumers.

ii. **Consumer.** The user can purchase Nics through exchange software, for example a smartphone “app.” The user purchases Nics either as a new Nics issuance or based on user listings.

iii. **Dispensary.** A dispensary accepts Nics and credits the proceed of the sale of NICCS in customer account. The dispensary, as a member of the exchange, can also sell Nics on the open exchange when needed and settle in fiat currency. The dispensary scans the barcode of a bearer document to automatically transfer Nics from the NICCS vendor account to the dispensary Exchange Account. The dispensary then credits the account of their customer.

iv. **NICCS vendor.** Some consumers may not wish to use exchange software. To accommodate these consumers, a NICCS vending machine is located within a convenient distance. The consumer inserts cash or credit card and purchases NICCS. The NICCS vendor facilitates the purchase from the exchange. The NICCS vendor issues a Bearer Document that includes a barcode, which upon scanning will transfer the NICCS balance to the account of the recipient of the bar code.

vi. **Landlord, supplier and utility company.** The dispensary and the grower can compensate tangentially associated parties, including a landlord, supplier or utility company. Tangential parties, who are members of the exchange, have the same usage flexibility: they can store, trade, or list Nics on the exchange.

vii. **NICCS exchange.** The exchange authorizes new Nics, conducts the initial sale to a user called an **Issuance**, maintains the immutable record of trades and as necessary redeem issued NICCS to pull them out of circulation from the market.

viii. **Fiduciary.** The fiduciary trust holds proceeds of **Issuance**, which are transferred to the exchange when a new Nic is issued (for example, at the time a new Nic purchased through exchange software or transferred by the NICCS

vendor). In the event of catastrophic failure or exchange dissolution, users' Nics can be redeemed for the original issuance less fees.

3.2 Advantages for State Governments

Using NICCS represents a number of advantages for all industry stakeholders compared to current use of fiat currency and digital currencies like Bitcoin. However, some of the largest advantages are realized by the state government, including:

i. Point of Sale tax revenue. Tax revenue can be automatically deducted from transactions at the point of sale.¹⁴ For example: Sale Taxes collected by a dispensary can be paid in NICCS and automatically transferred to Nevada's account at the Point of Sale. As a result, tax revenue is likely to be more stable for the state.

ii. Reduced tax collections cost. States spend an increasing percentage of tax revenue on documenting and collecting taxes, collectively known as collection costs. It is a growing logistical challenge as systems get more sophisticated. NICCS, through immutable recordkeeping and automatic remittance, can dramatically decrease the current collection costs associated bringing on a new industry.

iii. Reduction in dispensary and grower cash. NICCS leads industry participants to have decreased cash on hand. They are less likely to be robbed or burglarized, increasing public safety and preventing high-profile marijuana incidents.

iv. Consumer protection. Similarly, consumers are safer when visiting dispensaries with less cash. Consumers are also financially protected by using NICCS, as dispensaries are less likely to encourage use of the Bitcoin network. Each sale of marijuana to consumers is documented, promoting industry accountability and therefore public safety.¹⁵

v. Reduced policing cost. With lower anticipated crime, the cost of patrolling and responding to incidences is likely to fall.

¹⁴ Additional taxations methods are possible, for example tax per unit of retail inventory. See RICHARD PHILIPS, *The Institute on Taxation & Economic Policy* (2015) at 6, <http://www.itep.org/pdf/marijuanaissuesreport.pdf>

¹⁵ For example, a consumer who is injured due to a marijuana edible due to an unlawful dose of THC may be prove his or her interaction with a dispensary with the NICCS recordkeeping, creating the basis for a compliant investigation and enforcement action. See COLORADO DEPARTMENT OF REVENUE, *Marijuana Enforcement Division: Annual Update* (2014) at 24, available at https://www.colorado.gov/pacific/sites/default/files/2014%20MED%20Annual%20Report_1.pdf

vi. **Immutable record for regulatory compliance.** Record keeping is a key function of any compliance process. For instance, Colorado instituted over 3200 due diligence and compliance investigations in 2014.¹⁶ The immutable method of record keeping of the NICCS exchanges provides documentation for compliance and enforcement activities.

vii. **Data and regulatory intelligence.** In addition to individual compliance data, the immutable record provides critical data as to the growth of the industry, regulation efficiency, and overall compliance rate. Actionable insight into the marijuana industry allows regulators to propose, draft and implement new legislation.

3.2.3 POS Taxation Would Work: Configuration

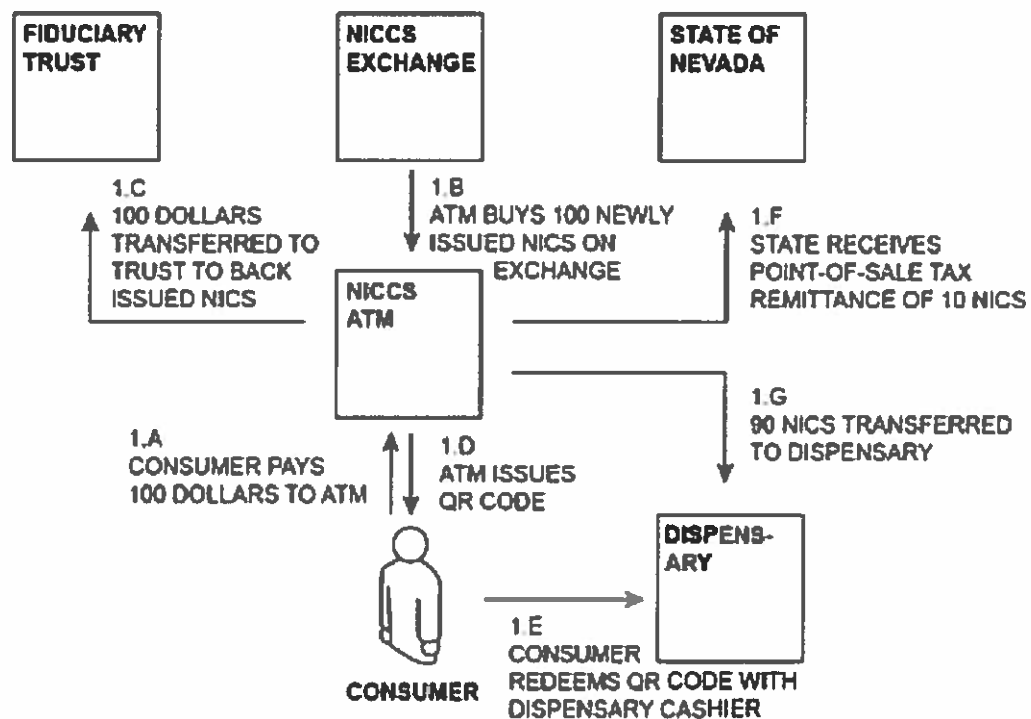


FIG. 1

- A. 1.A A consumer enters dispensary and purchases one hundred NICCs from an on-site ATM, also incurring a small additional charge. Alternatively, the consumer can use exchange software on his or her smartphone.

¹⁶ COLORADO DEPARTMENT OF REVENUE, *Marijuana Enforcement Division: Annual Update (2014)* at 3, available at https://www.colorado.gov/pacific/sites/default/files/2014%20MED%20Annual%20Report_1.pdf

- B. 1.B The ATM purchases 100 newly authorized Nics of the NICCS exchange, which are then issued are transferred to an account associated with the ATM.
- C. 1.C The ATM account transfers the proceeds from the sale of NICCS of one hundred dollars to the fiduciary trust.
- D. 1.D The ATM issues a “QR” code as a bearer document that is proof of ownership.
- E. 1.E The Dispensary accepts as a non-cash payment option the acceptance of NICCS. The consumer redeems their QR code with the dispensary and receives credit with which they make a legal purchase.
- F. 1.F The state receives automatic point-of-sale remittance of ten Nics.
- G. 1.G The balance of 90 Nics goes to the dispensary, where they can be stored, transferred to other parties, or re-listed on the exchange.

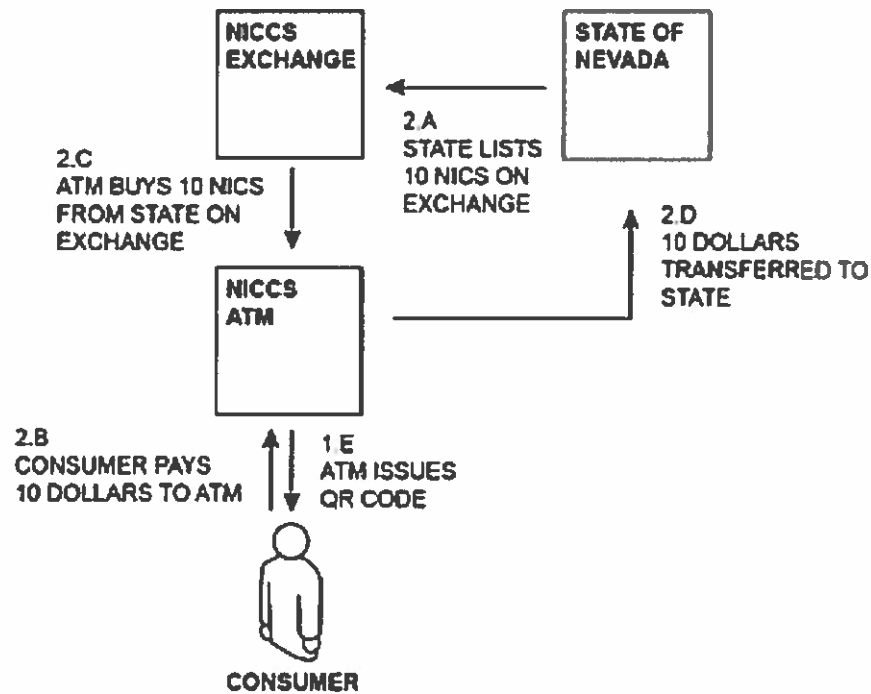


FIG. 2

- 2.A To liquidate Nics, the State lists them on the NICCS exchange.
- 2.B The Member looking to buy NICCS from a Vendor, the Vendor checks and see if there are any Nics on the exchange from other parties or whether new issuance is required.
- 2.C Finding the State’s listed Nics on the exchange, the Vendor purchases them rather than request a new issuance.
- 2.D Tax revenue is immediately realized by the State.

3.1. Voluntary Adoption

Adoption rates are anticipated to be high: the new Nevada industry is already in need of a safe electronic medium of exchange, especially one sanctioned for use by the state. Similarly, the barriers for consumer adoption are low. The simplified interface of the exchange software, including highly secure authentication through RevAuth, requires a level of technical competence similar to email. Users can also avoid the software by using NICCS vending machines.

3.2. Incentivized Adoption

Nevada may wish to actively encourage adoption. One option is to reduce tax rates for industry participants that use NICCS. The resulting immediate revenue and reduced collection cost may offset this lower rate.

3.3. Mandatory Adoption

Analyzing the advantages, Nevada may determine that adoption should be mandatory. This aligns with the regulatory goals of states like Colorado that chose to implement highly monitored marijuana industries.¹⁷

IV. Conclusion

NICCS allows value to be shifted out of fiat dollars and into a more specialized digital currency where it can be used to securely store and transfer value. Specially adapted for single communities, NICCS reduces cash stockpiles, creates accurate accounting records, and allows the state to derive immediate point-of-sale taxation. As a result, it provides immediate value to all industry stakeholders and increases control over the development and regulation of the market.

¹⁷ See, e.g., Matt Cook, *60 Minutes: Rocky Mountain High* (Oct 21, 2012), transcript available at <http://www.mattcook.org/rocky-mountain-high/> (“We created a very transparent, regulatory scheme and wanted to ensure that what they said they were doing, they were actually doing”).