Redefining the Crime Stoppers Program By Using Blockchain Technology

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Executive Summary

Since the inception of the Crime Stoppers program in 1976, anonymous individuals have been placing tips to mitigate crime and as a result, they would receive a cash reward if their tip led to an arrest or asset seizure. With blockchain technology, rewards can be paid immediately in cryptocurrency which will reduce the transaction process and tips can be stored off-chain for greater security and at a lower cost than traditional methods.

Problem

According to Crime Stoppers Toronto, tips are currently stored on a server in the United States. Also, when inquiring if they have kept tips since the inception of their program in 1984, they have stated that tips that were previously written by hand have been destroyed. (Delos Reyes, Mariam [2020, August 13]. Phone interview with Toronto Crime Stoppers). The current process for a tip payout is for an individual to meet at a pre-designated location, a financial institution, where they will provide their tip number to receive an unmarked envelope with cash inside. As long as the tip number has been deemed successful, bank employees will not ask any questions when an individual is receiving a payout. If an individual does not have an account with the financial institution chosen by their respective Crime Stoppers organization, then they will have to leave to deposit their cash elsewhere. Each individual is assigned a tipster number when they call or place a tip online. If an individual is to lose their tipster number or give it to someone else where that person might use it to claim a reward, then the tipster would have no recourse since Crime Stoppers is an anonymous process.

Solution

By eliminating financial institutions, there will be no need for an intermediary to facilitate the payment process between an anonymous individual, Crime Stoppers, and police agencies. Tips will be paid immediately in cryptocurrency after it has been verified by the police that it has contributed to police intelligence in the case of an arrest or asset seizure. With tips being paid immediately in cryptocurrency, anonymous individuals will not have to go to their local bank to deposit their reward and their cryptocurrency reward can also be easily converted into fiat if they choose to do so. Anonymous individuals can use their preferred wallet address number for payment and they will be able to check the status of their tip and payment by using their wallet address and unique ID number that was generated when they placed a tip. Only the owner of the wallet address with their corresponding tip number can check the status of their tip. The current smart contract will be revised in the future to allow for the wallet address owner to look up their tip ID numbers by using their wallet address number only, so that lost ID numbers will not be an issue. With tips being stored securely off-chain, it will allow for scalability as payment transactions will not be delayed and it will provide greater security as tip information will not be available to the public. Tips will be also accessible anywhere in the world since it will be on a decentralized blockchain platform.

Blockchain Architecture

This project will use the Ethereum blockchain to facilitate payments in Ethereum. The smart contract was written in Solidity, which has values to set a tip, add a wallet address and add tip information, return tip information, and reward a tip.



Generating revenue

Currently, donations to Crime Stoppers programs have been made by various organizations and individuals to support the Crime Stoppers initiative. This project will not focus on how to generate revenue, but it will allow for a model where donations can also be received through cryptocurrency in addition to fiat.

Potential risks

The potential risk is that bad players such as those who would submit a tip under false pretences knowing that they can hide behind an anonymous wallet address, since there is no way to identify them unless a police agency can trace their cryptocurrency address to a cryptocurrency exchange that employs a KYC process. In 2017, the Canadian Supreme Court has ruled that “those who call Crime Stoppers in good faith have their identities protected by a privilege a law gives to informers.” (RCMP considered probe into false Crime Stoppers tips that led to fatal shooting | CBC News, 2019) and (R. v. Durham Regional Crime Stoppers Inc. - SCC Cases (Lexum), 2017). More research and consultations with the Government of Canada will have to be done on how the law applies in cases that use blockchain technology.

Existing competition in the market

Researching through various key words on the web, no search results were found for an existing Crime Stoppers blockchain or DApp model that has proposed for tips to be paid in cryptocurrency and for tips to be stored off-chain. The closest thing was for a smart contract to be executed when tips are received so police officers can be held accountable to ensuring that they follow protocol when they receive tips (Tatro, 2019).

Timeline

As of August 2020, the DApp will be refined and a research proposal will be created. The research proposal will be sent to the Board of Directors of the Canadian Crime Stoppers Association in 2021, and after any revisions that will need to be implemented, the DApp will be executed in 2022 or 2023 if approval is granted from the Board of Directors. If the initial period is successful, then a proposal will be set for this project to be implemented worldwide by various Crime Stoppers organizations at a later date.

Conclusion

Adopting blockchain technology to use with the current Crime Stoppers process will allow for greater transparency, scalability, security, and a faster transaction process. Anonymous individuals will be able to have their tips paid in cryptocurrency and police agencies and Crime Stoppers will be able to pay tips in cryptocurrency and have tip information stored off-chain at a reduced cost.

Author

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The GitHub link for this project is: <https://github.com/mardel011/Crime-Stoppers-Tip-Line-DApp>

References

Delos Reyes, M. (2020, August 13, 1:21 pm EDT). Personal interview.

CBC. 2019. *RCMP Considered Probe Into False Crime Stoppers Tips That Led To Fatal Shooting | CBC News*. [online] Available at: <https://www.cbc.ca/news/canada/new-brunswick/rcmp-investigation-crime-stoppers-tips-anonymous-1.5390474> [Accessed 12 August 2020].

Scc-csc.lexum.com. 2017. *R. V. Durham Regional Crime Stoppers Inc. - SCC Cases (Lexum)*. [online] Available at: <https://scc-csc.lexum.com/scc-csc/scc-csc/en/item/16786/index.do> [Accessed 12 August 2020].

Tatro, P., 2019. *How Blockchain Can Improve Public Safety -- GCN*. [online] GCN. Available at: <https://gcn.com/Articles/2019/04/17/blockchain-public-safety.aspx?Page=2> [Accessed 14 August 2020].

General information that was used to learn about the Crime Stoppers program in Canada:

Canada

<https://www.canadiancrimestoppers.org/home#:~:text=Canadian%20Crime%20Stoppers%20Association,Solve%20and%20Prevent%20Crime%20%2D%20Together>

Toronto  
<https://www.222tips.com/>

Peel Regional Police

<https://www.peelpolice.ca/en/report-it/anonymous-tips---crime-stoppers.aspx>

Edmonton and Northern Alberta

<http://crimestoppers.ab.ca/edmonton/>

New Brunswick

<https://www.crimenb.ca/>