Project overview: Addressing disinformation by creating a blockchain-based fact check registry

Walid Al-Saqaf

Södertörn University - Stockholm

`walid.al-saqaf@sh.se`

Abstract

This paper is meant to give an overview of a project to create a blockchain-based registry for fact checks to support efforts against disinformation. It describes how using blockchain can make it easier for fact checkers to collaborate and be more efficient, accountable and sustainable. The project uses the Fact Check Assistant web application to make verification processes by individual fact checkers more systematic and streamlined. As a mere introduction to the project, this paper will need to be followed by studies to assess the project and identify what worked and what didn't.

Keywords: blockchain, fact check registry, disinformation

1 Introduction

One of the fundamental problems facing social media and websites with user-generated content is the lack of effective and reliable ways to swiftly limit the spread of disinformation (Marwick and Lewis, 2017). Take for example the haoxes and rumors that leverage Whatsapp groups during election campaigns. Research on Indian elections, for example, has found that Whatsapp was used widely to propagate false information during critical electoral processes (Resende et al., 2019).

This trend was naturally met with an increase in fact checking efforts. As of June 2019, there were 188 fact checking outlets recognised as part of Poynter's International Fact-Checking Network (IFCN), reflecting a 26% increase since February 2018 (Stencel, 2019). However, viral disinformation-based messages on the Internet travel too fast and reach too many people to be exposed by fact checkers before damage is done. This is particularly troubling due to the fact that fact checking organisations generally work in silos and don't share or promote each other's day-to-day findings about claims and sources. This lack of coordination leads to fragmentation, redundancy and inefficiency. It also means that for their fact checks to have any impact, fact checkers have to actively expand their reach and compete for space in popular media. Fact checking organisations that are not affiliated with media outlets or have limited distribution channels would therefore be at a disadvantage.

Additionally, the lack of standardised or systematic methods of fact checking makes automatic verification of content a difficult endeavor. While Facebook found success in using automation to detect and then filter or take down abusive terrorism and sexual content (Nieva, 2018), it does not use such methods to detect and stop disinformation. Facebook has instead initiated partnerships with dozens of fact checking organisations in different countries to help address the problem manually (Funke, 2019).

Another project that seeks to limit the spread of disinformation is the ClaimReview schema, which was initiated by schema.org, a collaborative community with a mission to create, maintain, and promote schemas for structured data on the web[1]. DataCommons[2] is an open platform, where one can download limited datasets containing fact checks using the ClaimReview schema. The biggest and most comprehensive ClaimReview-compatible dataset is currently accessible via the Google Fact Check Explorer[3] (Locker, 2019).

Although the aforementioned initiatives by Facebook and Google are dissimilar in their approaches, it can be argued that they both make use of fact checkers' content to expose disinformation. While those efforts are useful to promote the work of fact checkers, they inescapably lead to centralisation where the supporting companies enjoy a great deal of power.

Apart from the lack of coordination and limited reach, many fact checking organisations also suffer from low and unsteady income as they usually depend on charity for survival (Graves and Cherubini, 2016). This creates a dependency relationship since fact checking organisations would have to dedicate significant time to writing grant proposals instead of focusing on the core fact checking tasks they are supposed to do. As of September 2019, 74 out of the 269 fact checking outlets tallied by Duke Reporters' Lab were marked as 'inactive'[4]. This seems to have been a problem for years. A 2016 report noted that many fact checking websites had to close down after failing to secure new funding when their available funds dried up (Mantzarlis, 2016). A long-term solution to address sustainability requires creating diverse sources of income that do not rely heavily on a small number of donors.

In this paper I present a project that tries to address the aforementioned problems. The proposed solution mainly relies on creating a blockchain to store fact checks, which could make fact checking processes more methodological and systematic, raise the level of transparency and accountability of fact checkers and potentially make them more sustainable. It is worth noting that this project is a research initiative to contribute to the field of technology-based action research in the journalism domain. There will be close coordination between the project team, interested fact checkers and journalists by maintaining a constant feedback loop to assess the various stages of the project.

---

[1]https://schema.org/docs/about.html

[2]https://datacommons.org

[3]https://toolbox.google.com/factcheck/explorer

[4]https://reporterslab.org/fact-checking

2 Systematising fact checks

When developing the concept of this project, we argued that in order to be more effective in countering disinformation, it is necessary to empower freelance and citizen journalists to support the work done by news media and established fact checking organisations. The rationale behind this is the fact that no matter how hard they try, fact checking entities alone do not have the capacity to verify every claim that comes their way. To address this, the project seeks to expand the network of fact checkers to include individuals capable of demonstrating their competence in fact checking.

Using a quote by Politifact Editor Angie Holan, one can consider fact checking as "journalism distilled to its essence" and hence, journalists and fact checking organisations can be seen as members of the same team aiming at revealing the truth and exposing disinformation (Institute, 2018). Fact checking should not be viewed as an exclusive club where credentials are provided to organisations only. Anyone with skills and determination can follow the steps required to do a proper fact check and contribute to fighting disinformation.

With this in mind, Södertörn University's Journalism Department is involved in the Vinnova-funded Faktaassistenten project[5], which resulted in developing an open-source web application called Fact Check Assistant (FCA) that allows streamlining and systematising the fact checking process to facilitate the production of verifiable fact checks by journalists and even others who can be given some training in this area. The app facilitates the utilisation of various tools that help simplify and speed up data verification processes for text, picture and video contents.

Apart from enabling users to systematically verify a particular claim in the form of a picture, video, text or any other type of online content, FCA allows reviewing the source (author) of the claim in addition to the medium (platform) where the claim was published. Those reviews collectively inform the fact checker in a better way compared to just looking at the specific validity of the claim alone without reflecting on the trustworthiness and credibility of the source and medium. FCA focuses a lot on creating and maintaining a memory of all the sources and media that were reviewed in the past to understand whether any of them showed patterns of consistent engagement in disinformation activities.

In order to make fact checking processes more reliable, the project would emphasise on collaboration between fact checkers so they could share their reviews and complement and correct each other when needed. The project's long-term goal is to encourage fact checkers to share their work even at earlier stages without fear of rivalry. This would in turn allow them to collectively cover more ground and become more effective.

3 Infrastructural considerations

Since fact checkers today are generally fragmented and work in silos, the challenge is to get them to collaborate and share information in a network that would not create any hierarchy or result in one or more dominant parties. Assuming that fact checkers agree to collaborate and share their work systematically, the next challenge is to find a way of storing their fact checks to be accessed by all. One approach is to rely on a central server like a cloud that each member can access fact checks uploaded by others. But this encourages centralisation as it necessitates using an intermediary, which carries the single-point-of-failure risk.

Another option is to have fact checkers store their fact checks on their own individual servers and broadcast to other members of the network the credentials needed to access their

server using application interfaces (APIs) and secure authorisation mechanisms. However, this adds complexity, increasing the risk of errors or mix-ups. Additionally, the cost of creating and running such a service across all the servers may be prohibitively expensive.

We have studied possible ways to attack this problem and found that blockchain technology could be one way to achieve this as described in the next section.

4 The blockchain route

In this project, we decided to for the third route using blockchain technology. Doing so would eliminate the need for intermediaries while facilitating the sharing of data in a way that is systematic and secure. Today, blockchains provide the possibility of covering a wide variety of applications that go beyond bitcoin financial transactions and other FinTech applications (Al-Saqaf and Seidler, 2017). The technology is already being used in journalism projects as demonstrated by Civil[6], which was found to have the potential of giving journalism a relative advantage compared to other conventional technologies (Al-Saqaf and Picha Edwardsson, 2019).

The project involves creating a private blockchain using Hyperledger[7], which is a Linux Foundation project with the aim of building open-source blockchain technologies that can be utilised for various use cases. The blockchain will have fact checkers as nodes and is meant to serve as the ultimate global registry for all the fact checks that are publicly available. Since blockchains are immutable and manipulation-resistant, this enhances transparency and accountability. Fact checkers will need to work professionally and methodologically before publishing their work because any misjudgement or errors in methodology will be permanently visible to the public. They can however add to the blockchain an errata entry or a new version of the fact check with the error rectified.

By creating a global registry of fact checks on a blockchain, fact checkers eliminate the need for intermediaries, hence avoiding centralisation. This setting also simultaneously introduces high levels of transparency and means of collaboration among the member fact checkers to work more productively. To access any record on the blockchain, any Internet user could use a web app that will be created to connect to any of the nodes on the blockchain. That node will consequently access the data it has stored and which is synced to those stored by every other node. The fact check registry would also be censorship-resistant and accessible from anywhere around the world unless each and every node on the blockchain is itself blocked.

5 Uses by social media

Apart from online users, a social media platform, like Facebook for example, could find it useful to access the blockchain-based fact check registry and automatically compare claims just submitted by any user to those that exist in the registry. Artificial intelligence and natural language processing techniques could be utilised in the search to find the closest match. Based on the result of the inquiry, the platform may end up preventing the claim from being published at all, hence eliminating that false claim from spreading to other users. If the platform identifies a totally new claim that has never been fact checked before, it may send a request to the blockchain members to see if it is worth fact checking. If one of the nodes agrees to check it, it would do so and record the results on the blockchain, allowing the platform be pick it up soon after. Since this is a valuable service to the social

---

[5]https://faktaassistenten.sh.se

[6]https://civil.co
[7]https://hyperledger.org/

media platforms, a regular or usage-based fee could be paid to the blockchain members to support their sustainability.

Apart from social media and regular users, it would be possible for researchers for example to do extensive data analysis to identify patterns of disinformation similar to the way data journalists use bitcoin blockchain data to extract, trace and analyse transaction data (Smith and Al-Saqaf, 2019).

6 Moving to a public blockchain

In the long-run, we envision transitioning the registry from a private to a public blockchain, which would make it possible for anyone to join and contribute with fact checks similar to how users contribute to Wikipedia. Incoming new nodes will be expected to prove their credibility by producing quality fact checks that would -at least at preliminary stages- be validated by older well-established nodes. This transition would not only expand the network of fact checkers and make the registry more useful as a global resource, but it may also provide means of sustainability by allowing nodes to receive financial contributions in a form of cryptocurrency.

7 Conclusion

The aim of the project outlined in this paper is not to add to the hype around blockchain or to propose another solution searching for a problem. It is rather an action research-based project aiming at fighting disinformation by addressing some of the weaknesses that exist today in the fact checking realm. We believe the project could also help explore new effective ways for fact checkers to collaborate and hold themselves to a higher standard by realising that whatever they produce is tracked and archived permanently. We are not naively underestimating the challenges and difficulties that would be faced in using a technology that is relatively new and requires time to mature. The paper is meant to be an overview of a project that is just starting. A future in-depth study on the project will be covering the difficulties, weaknesses and challenges the project will face and identify ways to overcome them. Findings of the project will be a valuable addition to the scholarship in the fields of journalism and blockchain. This is also an opportunity to inspire scholars, journalists, fact checkers and technologists to think about new unorthodox ways to address the growing problem of disinformation.

Acknowledgments

References

Walid Al-Saqaf and Malin Picha Edwardsson. 2019. *Could blockchain save journalism?: An explorative study of blockchain's potential to make journalism a more sustainable business*, page 97–113. Routledge.

Walid Al-Saqaf and Nicolas Seidler. 2017. Blockchain technology for social impact: opportunities and challenges ahead. *Journal of Cyber Policy*, 2(3):338–354.

Daniel Funke. 2019. In the past year, facebook has quadrupled its fact-checking partners.

Lucas Graves and Federica Cherubini. 2016. *The rise of fact-checking sites in Europe*, volume 2016. Reuters Institute for the Study of Journalism, University of Oxford.

Reynolds Journalism Institute. 2018. Fact-checking: Journalism distilled to its essence.

Melissa Locker. 2019. Youtube's new fact-check feature will try to pour water on viral conspiracy videos.

Alexios Mantzarlis. 2016. Why do fact-checking sites close? and how can new ones avoid that fate?

Alice Marwick and Rebecca Lewis. 2017. Media manipulation and disinformation online. *New York: Data & Society Research Institute*.

Richard Nieva. 2018. Here's how facebook uses artificial intelligence to take down abusive posts.

Gustavo Resende, Philipe Melo, Hugo Sousa, Johnnatan Messias, Marisa Vasconcelos, Jussara Almeida, and Fabrício Benevenuto. 2019. (mis)information dissemination in whatsapp: Gathering, analyzing and countermeasures. In *The World Wide Web Conference*, pages 818–828. ACM.

Madolyn Smith and Walid Al-Saqaf. 2019. Data journalism on the blockchain.

Mark Stencel. 2019. Number of fact-checking outlets surges to 188 in more than 60 countries.