The News Authentication Project – Cryptographic Provenance for Digital Publishing

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A Cryptographic Solution to Lack of Trust in Journalism:

Markers of professional journalism are lost on digital platforms. As a result, users may see conflicting information and biased coverage that may be hard to sort through – potentially leading to loss of trust in journalistic institutions. Our research explores the feasibility of a cryptographic solution.

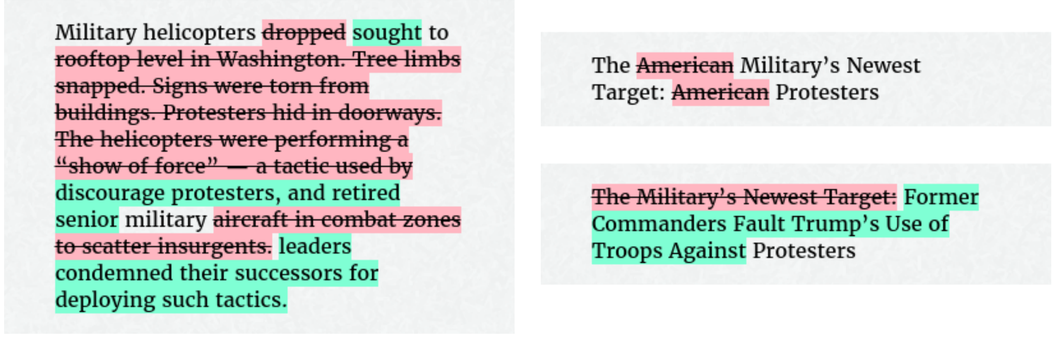

Figure 1. An image produced by the Twitter bot @news_diff illustrating a change in a New York Times story's abstract (left) and header (right)*. A reader accessing the article has no idea anything has been changed.

The Publisher

Our prototype will be built for one specific news organization, and initially used for testing and quality assurance. However, our goal is for the tool to be freely integrated with any CMS and integrate into a news organization's publishing pipeline, providing a simple way for journalists and editors to "publish" (or log) their article to a verifiable data store (and log any subsequent edits).

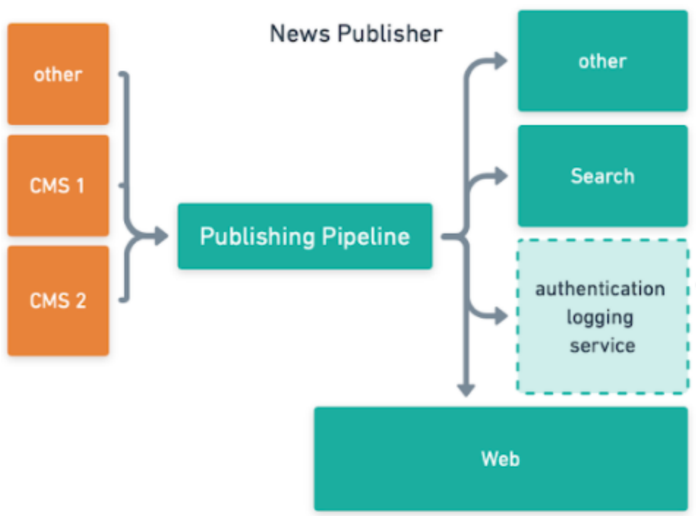

Figure 2. A Publisher's Workflow with the News Provenance Project

The Transparency Log

The transparency log is the most technical aspect of our project. When the article is uploaded to the transparency log via the authentication logging service, the hash of the content is added to a verifiable data store. Later, when responding to queries about the article, the news server retrieves an inclusion proof (which certifies that the article has been included in the transparency log) and the latest version of the transparency log.

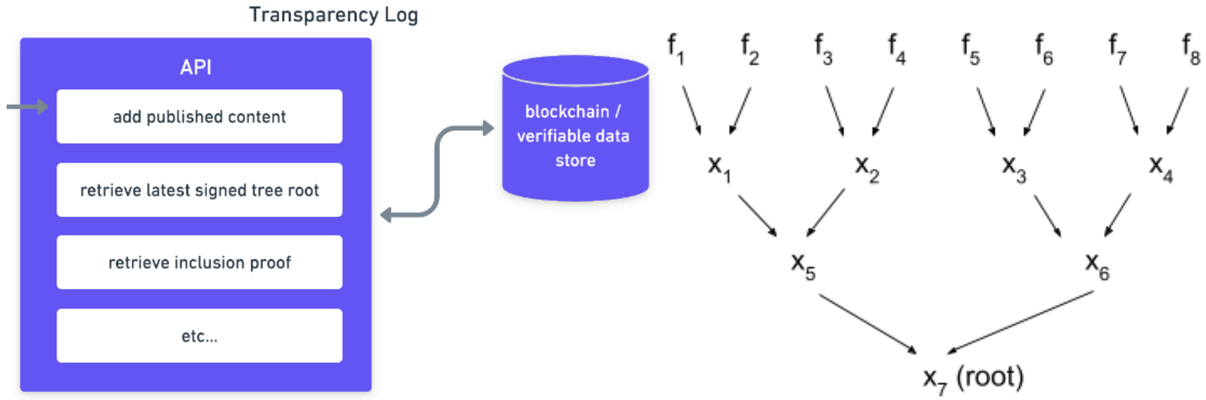

Figure 3. Left: The Transparency Log Diagram, Right: Merkle Tree Diagram

Applications

Our preliminary solution will be built for media watchdogs and organizations. However, broader applications of our technology include:

- Ensuring that both parties reference the same version of an article online.
- Allowing consumers to be confident they have latest copy of article.
- Ensuring authenticity of citations at a given point in time.
- Tracking changes in a news article over time.
- Providing publishers competitive differentiation via increased transparency.

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Figure 1 Source: @nyt_diff, Editing TheGrayLady Twitter, https://rb.gy/xooy6b

Figure 1 Article Referenced: New York Times – "Former Commanders Fault Trump's Use of Troops Against Protesters" accessed February 12th 2021 – https://T.co/lAgy0FD3E9