

Can you trust what you read?

Debunking fake news in the digital age

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Executive summary

Fake news – the intentional spread of false information – erodes public trust, harms institutions and individuals, and confuses a public trying to make sense of an increasingly complex world. Even with quality control measures in place, there have been many times reporting in the mainstream media is found to be false. Social media and online news platforms allow anyone to be a reporter without the same level of due diligence levied on professional reporters by their affiliated media outlets, which only increase the risk of fake news. Media companies, consumer watchdogs and governments are taking steps to address the issue, but their efforts are far from enough.

Russia's documented attempts to influence the 2016 US presidential election with fake social media accounts that posted false information woke up many to the danger of fake news. COVID-19, perceived as the most significant pandemic in the age of social media, only intensified the issue. Panic over a deadly disease, misleading and conflicting information from government officials, and partisan politics have sent a tidal wave of fake news swirling around the globe. The inability of the public to determine what is true or false can have life-and-death consequences.

Digital media companies have long been criticized for failing to remove obvious falsehoods from their channels. The coming of another contentious election year in the US, coupled with the COVID-19 pandemic, is putting renewed pressure on them. As social media companies step up their efforts to counter fake news, governments are also increasingly inclined to take action. Many global corporations have begun monitoring social media and news coverage about them.

Amid the calls to crack down on fake news, technology company professionals as well as academics are working to develop effective counter measures. It has proven to be a challenging journey, but not short of promising outcomes. The purpose of this paper is to share some of the fake news detection methods to date, their successes and limitations, and to explore innovative ideas as the world continues its fight for the truth.



Fake news poses a growing threat

The ability to share and reshare content online means people can spread false information, sometimes so quickly that it drowns out the truth. The *2019 CIGI-Ipsos Global Survey* found 86% of internet users said they have been duped by fake news at least once.¹ While this hurts all aspects of society, it poses special risks for businesses that can suddenly see their reputation and revenue damaged.

Misinformation takes many forms

Misinformation can come from satire or parody, forms of entertainment that embellish actual news in a comedic fashion. Late night talk shows and satirical pieces such as those found in *The Onion* typically exaggerate real events in such a way that the audience easily understands the difference between truth and fiction. But completely fictional entertainment can also dupe the public, as when the 1938 “War of the Worlds” broadcast convinced some radio listeners that Martians were landing. In the 1990s, many movie-goers thought “The Blair Witch Project” was true because of marketing for the low-budget horror movie.

False advertising claims can be another form of misinformation. In addition, celebrities often use their status to shape public opinion, sometimes heavily influenced by personal bias and financial incentives. Many celebrities have been fined for making misleading claims, while others have sued companies for creating fake endorsements using their names and images.

The focus of this report is on deliberate lies, often shared through social media and online news channels. While US President Trump pioneered the practice of calling reporting he disagrees with “fake news,” a term typically reserved for information designed to deceive.

Perhaps the most unsettling form of fake news is state-sponsored propaganda or disinformation, such as documented Russian efforts to influence the 2016 US presidential election and the 2019 EU elections. The problem has grown even more urgent with the COVID-19 pandemic with fake news inundating social media and adding stress to an already tense situation.

¹ *CIGI-Ipsos Global Survey: Internet Security & Trust*, Ipsos Public Affairs and the Centre for International Governance Innovation, 2019.

Fake news erodes public trust and damages businesses

A Massachusetts Institute of Technology (MIT) study of Twitter from 2006 to 2017 found that fake news stories were 70% more likely to be retweeted than true stories, with the truth taking about six times as long to reach 1,500 people as falsehoods. Falsehoods were spread farther and faster than the truth in all categories, with political news leading the way and business rumors coming in third.² People have a predisposition to favor information that is more novel than accurate reporting or confirms what they already believe.

Fake news can cause a public relations crisis and even drive down a company's stock. Pepsi was threatened by boycotts after false reports circulated saying the company CEO told Trump supporters

to "take their business elsewhere." A video showed a Tesla self-driving car crashing into a robot, even though Tesla doesn't make a self-driving car. An Indian e-commerce firm saw its market value drop 71% in one day following false messages regarding its financial stability circulated on social messaging apps.

Small businesses with limited resources may be at even more risk than resource- and cash-rich large corporations. One Indian restaurant in London saw its business cut in half after it was accused of serving human meat. Researchers analyzing fake stock promotion articles prosecuted by the U.S. Securities and Exchange Commission found fake news impacted the price of small cap companies more than large companies.³

COVID-19 pandemic leads to an explosion in fake news

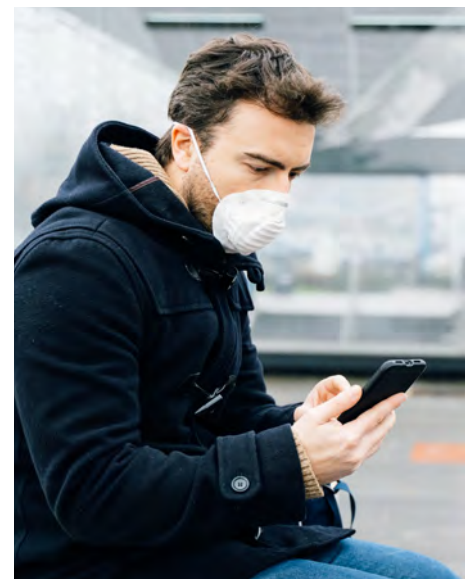
COVID-19 has been unprecedented in changing the way the world lives and works, so it's not surprising that the virus has led to an outbreak of fake news, with people around the world sharing content on everything from lockdowns to tips for warding off the virus. Nearly half of Americans say they've read fake news related to the virus in some form of media and nearly a quarter seemed to believe the false story that COVID-19 was intentionally created, according to a Pew Research Center survey.⁴

Business leaders have also fallen victim to fake news in the wake of COVID-19. The chief medical officer of a US company sent an email to employees encouraging them to drink warm water to ward off the virus, after reading about the advice on a viral post, falsely attributed to Stanford University. The university denied issuing it and epidemiologists say the advice is not valid. While the advice was not harmful, the episode embarrassed both the company and executive.

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A lie gets halfway around the world before the truth has a chance to get its pants on.

Winston Churchill



² Peter Dizikes, "Study: On Twitter, false news travels faster than true stories," *MIT News*, 8 March 2018, <http://news.mit.edu/2018/study-twitter-false-news-travels-faster-true-stories-0308>.

³ Harlan Loeb, "Business Must Combat Fake News," *Edelman*, 20 February 2019, <https://www.edelman.com/insights/business-must-combat-fake-news>.

⁴ Amy Mitchell and J. Baxter Oliphant, "Americans Immersed in COVID-19 News; Most Think Media Are Doing Fairly Well Covering It," 18 March 2020, Pew Research Center, <https://www.journalism.org/2020/03/18/americans-immersed-in-covid-19-news-most-think-media-are-doing-fairly-well-covering-it/>.

It takes a village to fight fake news

Fake news impacts every organization, private or public, as well as the individual consumer. Well before the COVID-19 pandemic, many organizations were taking steps to manage the risk of fake news, but those efforts have dramatically increased.

Internet companies step up efforts to stop the spread of fake news

While billions of people around the world use social media, three-quarters of internet users surveyed in 2019 said they don't trust social media companies and 65% don't trust search engines.

After being criticized for spreading Russian-generated posts to millions in the 2016 US presidential election, Facebook stepped up efforts to mitigate fake news. Users can categorize a post as false; if enough people flag it, fact-checkers employed by Facebook will review it. Deceptive or fabricated posts are tagged as "disputed" and linked to a corresponding article explaining why. However, relying on users has drawbacks. An MIT study⁵ found that people then become likely to believe untagged stories, even if they are also untrue, given that only a small percentage of posts are ever tagged as disputed.

Twitter allows users to report accounts that attempt to impersonate a brand or person. It also suggests users use its muting option to block offensive words and phrases, as well as tweets from strangers and new accounts. Critics say this sidesteps the problem of false content.

In 2019, YouTube undertook efforts to retool its detection algorithms and was able to reduce watch time of what it calls "borderline content" by 70%. YouTube is also putting authoritative news content at the top of viewers' feeds.⁶

The COVID-19 pandemic has raised the stakes for internet companies working to reduce the spread of fake news. Twitter changed its policies to remove tweets that run the risk of causing harm or panic, as well as tweets advising ineffective treatments for the virus. Facebook, which reported

in March 2020 that more than half of the articles read on its site were about COVID-19, updated its algorithms to promote official accounts and remove false content. It's also banning ads for items like face masks, hand sanitizer and virus test kits that are prone to gauging. Google banned coronavirus-related apps from its smartphone store and ads from people trying to profit from the pandemic.

⁵ Peter Dizikes, "The catch to putting warning labels on fake news," *MIT News*, 2 March 2020, <http://news.mit.edu/2020/warning-labels-fake-news-trustworthy-0303>.

⁶ Julia Alexander, "YouTube claims its crackdown on borderline content is actually working," *The Verge*, 3 December 2019, <https://www.theverge.com/2019/12/3/20992018/youtube-borderline-content-recommendation-algorithm-news-authoritative-sources>.

Fact-checkers join the fight

Over the last decade, news organizations have taken on many initiatives to help the public distinguish between truth and fiction, such as fact-checking sites and guides to spotting fake news. With the coronavirus outbreak, many added special coverage to debunk fake news. NewsGuard created the Coronavirus Misinformation Tracking Center, which lists dozens of sites spreading false information about the virus. Websites like factcheck.org, Snopes and PolitiFact allow the public to verify information before sharing it or flagging it as dubious content. The International Fact-Checking Network supports more than a hundred projects in 40 countries, helping to surface common positions across fact-checkers.



Misinformation

More governments legislate against fake news

Many countries have started to introduce legislation to protect the public from fake news, even though champions of a free press worry legitimate reporting may be stifled under these types of laws. Some also set up task forces and media literacy campaigns. Italy created an online portal where citizens can report fake news to the police. A German law aimed at hate speech forces social networks to remove “obviously illegal” posts within 24 hours.

Several Asian jurisdictions have enacted laws that criminalize creating or spreading fake news. Fake news posts about COVID-19 have led to arrests in Mainland China, Hong Kong, Malaysia, India, Indonesia, and Thailand. Singapore’s 2019 law against online falsehoods requires social media outlets to tag posts with government warnings saying they contain misinformation.

Businesses step up efforts to protect themselves

Corporate public relations departments have long tracked news stories about their organizations, but now companies are expanding surveillance to include social media and websites known to traffic in false stories. There are now service providers that collect content from a wide range of sites to identify misinformation and send alerts to their subscribers.



Fighting fake news requires data and technology

Fears of fake news during the US 2020 election season and the COVID-19 pandemic have put increased pressure on internet companies to block fake news. News organizations are working to educate the public on techniques for spotting fake news. But the deluge has been so overwhelming that fact-checking sites like Snopes told its readers in March 2020 it was unable to keep up due to resource constraint. The failure to control fake news, despite increased efforts, shows the need for better methods to detect fake news.

Enhancing human review with machine learning

One common approach adopted by social media companies relies on humans (users, employees or contractors) to flag potential false content. A major limitation to human review is that flagging is subject to personal bias. Nor is it practical given the large volume of information in the media in today's digital era. Inevitably, the use of artificial intelligence (AI) has come into focus in the fight against fake news.

A common AI-based hybrid approach builds on two classification models: content and social context. Content model analyzes topic distribution within the news article. However, the model itself is rarely used on its own because relying on content alone makes it difficult to differentiate intentional deception from bias. The content model often is complemented by the social context model, which focuses on key aspects of social network (e.g., followers, user characteristics,

interaction and engagement history). The drawback of this approach is that analysis is performed based on the news content only. The limited scope can make it difficult to understand the broader context of the news and potentially, the type of fake news.

Another approach championed by MIT focuses on news sources. Researchers from MIT's Computer Science and Artificial Intelligence Lab and the Qatar Computing Research Institute developed machine learning models to assess the authenticity or neutrality of news sources. The drawback of this approach is that while certain facts in an article may be fabricated or embellished, the overall point of the article may still be authentic.



A new way of thinking

In examining the fake news problem, it may be worthwhile to learn from government counterespionage efforts. Open source intelligence (OSINT) is a key element of the government's counterintelligence strategy. OSINT refers to any information that can be legally gathered from free, public sources. The information can be about an individual or an organization.

Given its reliance on freely available data, OSINT can be compromised if an individual or organization falsifies information in the public domain. However, this can be addressed by cross-checking relevant pieces of information about an individual to look for inconsistency. For example, by starting with an author's social media information to find out about his/her work history, one can then use the work history to search the employer website and court records to verify the author's online profile. Given the vast scope of data covered in OSINT, extensive cross-checking can be done to minimize the risk of false information.

The detection methods as described in earlier parts of this paper will continue to serve as the foundation for fake news analysis. But by bringing in additional data from OSINT, particularly data outside of what is in the news content, we can greatly increase the scope of analysis, aided by machine learning and natural language processing technologies. The outcome is much more comprehensive insights that can be used to determine the authenticity and nature of news content, whether fake or not.

Using OSINT, an EY team has run through a series of tests using known misinformation. The preliminary results have shown very encouraging opportunities in commercializing this approach in organizations' fight against fake news.



Organization-wide planning is important

While fake news has existed throughout history, modern digital life has significantly amplified the issue and the harm it can do to our society. Both the public at large and businesses need to step up their efforts to proactively look for new ways to detect and contain fake news, while making sure they don't contribute to the problem in the same time.

Key actions to manage the risk of fake news

- ▶ Build a culture of integrity, compliance and ethics. If your organization has a reputation for ethical behavior, it stands to be damaged less by false claims of wrongdoing.
- ▶ Develop a crisis management plan for dealing with potential risks that can result from damaging fake news. Stress test the plan in worst case scenarios.
- ▶ Strengthen employee education and build vigilance on detecting, transmitting, and reporting fake news.
- ▶ In addition to traditional news outlets, monitor social media and fake news sites to flag potentially damaging coverages.
- ▶ Develop data-driven detection programs through innovative use of OSINT and AI technologies.

For more information, visit: ey.com/Forensics

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