

When Black Swans are actually ugly ducklings: Internet of Things threats to the free press and how we can protect against them

Key Terms: Internet of Things (IoT), Transcontinental News Organisation (TNO)



Research Question

How can we create a framework for TNOs that are headquartered in democracies to improve their **identification of, protection from, and resilience against IoT-specific threats to the work and wellbeing of their journalists** and sources?

Methodology

- Expert interviews to establish the national context of each case study (UK, USA, Australia, Taiwan) and to compare their factors affecting press freedom and IoT threats to the press
- Creation of journalism-specific IoT taxonomies:
 - Taxonomy of IoT devices for journalists
 - Taxonomy of IoT threats to journalism
- Creation of an IoT-specific framework for TNOs in democracies to apply when designing their internal cyber security policies and strategies

Literature Gap

- Studies have assessed how best to protect journalists from conventional cyber-threats.^{1,2}
- Assessments of the digital security of journalists in distress have not specifically referenced the IoT.³
- UNESCO's *Survey of Selected Issues*⁴ affecting the digital security of journalists noted three threats of the increasing ubiquity of the IoT:
 - Attack technologies are becoming less expensive and more pervasive;
 - Location tracking technology can identify journalists and their sources;
 - Compromised user accounts and devices can be used to identify the sources and networks of those doing journalism.

Rationale

1.1tn

USD value of projected global IoT spending in 2023.⁵

115bn

USD value of consumer spending on domestic IoT in 2020.⁵

This rapid growth of IoT technologies and associated attack surfaces compounds existing problems for journalists:

9%

of global population lives in countries with "satisfactory" or "good" press freedom.⁶

59%

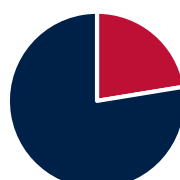
more journalists killed in countries at peace than in war-zones in 2019.⁷

Pilot Study: "Security should be there by default": Investigating how journalists perceive and respond to risks from the Internet of Things'

Can the public currently opt out of the use of the IoT?



Will the public be able to opt out of having information vulnerable to IoT in 5 years?



- 34 cyber security experts took part to inform journalists how to minimise/mitigate IoT threats.
- The experts believed that consumers are increasingly interacting with IoT. They recommend:
 - Prioritising education about potential IoT threats
 - Lobbying governments and private companies to create industry standards related to IoT devices
 - United public activism to push for protective legislation and education

Shere ARK, Nurse JRC and Flechais I (2020) "Security should be there by default": Investigating how journalists perceive and respond to risks from the Internet of Things. In: The 5th European Workshop on Usable Security, Genova, Italy, 7 September 2020, IEEE. Available at: <https://eusec20.cs.uchicago.edu/eusec20-Shere.pdf>.

References

- McGregor SE, Charters P, Holliday T, et al. (2015) Investigating the Computer Security Practices and Needs of Journalists. In: *Proceedings of the 24th USENIX Security Symposium*, Washington, D.C., 12 August 2015, p. 17. USENIX Association.
- McGregor S, Roesner F and Caine K (2016) Individual versus Organizational Computer Security and Privacy Concerns in Journalism. In: *Proceedings on Privacy Enhancing Technologies 2016*. DOI: 10.1515/popets-2016-0048.
- Blanchard T (2017) Journalists in Distress: Assessing the Digital Viability of a Global Emergency Assistance Network. *The Digital Security of Journalists in Distress: Report 3*. Toronto, Canada: Canadian Journalists For Free Expression: 30 Available at: https://d3n8a8pro7vnmx.cloudfront.net/cjfe/pages/2913/attachments/original/1484964569/Report_3_-_The_Digital_Security_of_Journalists_in_Distress.pdf?1484964569 (accessed 11 January 2020).
- Henrichsen J, Betz M and Lisosky JM (2015) Building Digital Safety for Journalism: A Survey of Selected Issues. *UNESCO Series on Internet Freedom*. Paris: UNESCO:17-18 Available at: <https://unesdoc.unesco.org/ark:/48223/pf0000232358>.
- Liu S (2020) Internet of Things (IoT) - Statistics & Facts. Available at: <https://www.statista.com/topics/2637/internet-of-things/> (accessed 17 September 2020).
- Reporters Without Borders (2020) 2020 World Press Freedom Index: "Entering a decisive decade for journalism, exacerbated by coronavirus" | RSF. Available at: <https://rsf.org/en/2020-world-press-freedom-index-entering-decisive-decade-journalism-exacerbated-coronavirus> (accessed 11 September 2020).
- Reporters without borders (2019) Worldwide round-up of journalists killed, detained, held hostage, or missing in 2019. 1 December. Reporters without borders. Available at: https://rsf.org/sites/default/files/rsf_2019_en.pdf (accessed 17 September 2020).