

The world is polluted with leaked cyber data

Ivan D. Burke^{1,2}, Renier P. van Heerden^{1,3}

Council for Scientific and Industrial Research, Pretoria, South Africa¹

Rhodes University, Grahamstown, South Africa Introduction²

Nelson Mandela University, South Africa³

ABSTRACT

Data breaches are becoming more common and numerous every day, where huge amount of data (corporate and personal) are leaked more frequently than ever. Corporate responses to data breaches are insufficient, when commonly remediation is minimal. We propose that a similar approach to physical pollution (environmental pollution) can be used to map and identify data leaks as Cyber pollution. Thus IT institutions should be made aware of their contribution to Cyber pollution in a more measurable method. In this article, we define the concept of cyber pollution as: security vulnerable (such as unmaintained or obsolete) devices that are visible through the Internet and corporate networks. This paper analyses the recent state of data breach disclosures Worldwide by providing statistics on significant scale data breach disclosures from 2014/01 2016/12. We model security threat levels similar to that of pollution breaches within the physical environment. Insignificant security openings or vulnerabilities can lead to massive exploitation of entire systems. By modelling these breaches as pollution the aim is to introduce the concept of cyber pollution. Cyber pollution is a more tangible concept for IT managers to relay to staff and senior management. Using anonymised corporate network traffic with Open Source penetration testing software we validate the model.