

►► BIG DATA AND RISK ASSESSMENT

Risk assessment is a system we constructed over the last generation of government and industry working together, to standardize and drive out risks from various activities we do. It involves a combination of risk assessment, risk management, and risk communication, and is all about probabilities and causal pathways. At one level, we do not need anything that is digital to make that system work. However, as the digital systems start to gather more data, different data, and faster data, it complicates and challenges our regulatory systems that are at the heart of these risk analysis enterprises.

It challenges them to figure out how to manage with the data flow, and bring meaning to data - data in and of itself is just noise, and sometimes, more information can just swamp a system, causing us to miss the critical variables. Sometimes, more information can deliver subtle little changes that allow us to find cause and effect relationships or impacts that we had not previously been able to detect. And so the challenge within regulatory systems is that they are fairly blunt instruments, which are created by governments, and populated by people who have standard training, and a lot of experience.

They are also very stylized places where we organize and manage our decisions. Having a sort of firehose of data flooding these systems, scares a lot of the regulators because they are uncertain how to deal with information or data that has no meaning attached to it.

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Big data, risk assessment and consumer trust


The question here is whether the trust problem is a lack of real time credible data. At one level, more diverse, more timely, and more granular data, could be very useful for building trust with people. However, the big challenge will be the filtering process, when we are inundated with reams of data and multitudes of interpretations of that data. How does an average person make discrete choice of buying or not buying, or choosing between two products to buy or consume, because they need the products as part of their lifestyle and their livelihood? So there is this creative tension between more and better data helping to build confidence, trust, and better relationships between consumer interests and the production system, and the reality that people have scarce attention, and are not quite sure how to deal with information that they have not seen before and that comes from disparate sources and interests.

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Additional reading:

Peter W.B. Phillips, et al., (2018) Rationalizing governance of genetically modified products in developing countries. *Nature Biotechnology*, Volume 36 (2). Pages 137-139.

<https://www.nature.com/articles/nbt.4069.pdf>



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Dr. Phillips earned his Ph.D. at the LSE and practiced for 13 years as a professional economist in industry and government. At the University of Saskatchewan, he was the Van Vliet Research Professor, created and held an NSERC-SSHRC Chair in Managing Technological Change in Agriculture, was director of the virtual College of Biotechnology, was founding director of the JSGS. He has had appointments at the LSE, OECD, European University Institute in Florence, University of Edinburgh and University of Western Australia. He was a founding member of the Canadian Biotechnology Advisory Committee and was on the boards of Canadian Agri-food Policy Institute, Pharmalytics and Ag-West Bio Inc. He has held over 15 peer-reviewed grants worth more than \$250 million and is author/editor of 15 books, and over 60 journal articles and 55 book chapters.