

Unpacking the black box of digitalization: will “sustainability thinking” empower citizens in a data-driven world?



*Data and the algorithms that organise it are core to many services in the digitalised world. **Jonny Shipp**, Director of Public Affairs at Telefónica SA and a Visiting Fellow at LSE and **Dr Ioanna Noula**, researcher at the UCL Institute of Education and a Visiting Fellow at LSE, write here about the ethics of data science and how to increase sustainability, following a workshop on the topic held at LSE last month.*

Complex algorithms, analytical as well as visualization techniques are helping **optimise transport systems**, **understand consumer behaviour** or **track the spread of ideas**. The amazing things people are doing with data are at the heart of digitalisation. Speaking at the recent World Economic Forum (WEF) in Davos, **Ángel Gurría**, Secretary-General of the OECD, highlighted that “Digitalization is not something we can decide whether to adopt or not. It is inevitable and we have to embrace it, because there is no alternative.”

The human element

Also at the January 2017 WEF the forum’s founder and chief Klaus Schwab called in his opening address for “humanization over robotization” as populism poses challenges the automation of industries across the world. The previous week, at LSE’s first meeting on Digital Life, researchers and industry experts were asked to consider the human effort that lies behind digitalization: the deep down work of the “data carers” who clean and prepare data to make it usable by data scientists.

As with other aspects of digitalisation, despite increasing automation, people do remain involved. Extraordinary machines take centre-stage, trained and tuned by an elite group of engineers. Yet human judgement is definitely missed when, for example, a computer judging a beauty contest chose all white finalists, or when racist chatbots perpetuate racism, or in **criminal sentencing risk assessments**, or in the “echo chambers” of social media, in which people’s opinions are more reinforced than challenged.

The algorithms struggle to spot right and wrong before replicating **and sometimes amplifying human wrongs**. Designed to make light work of complex decision-making processes, their reasoning increasingly goes unexplained. If it is not possible to describe how an algorithm makes a decision, how can it, or its owner, be held to account for the decisions it makes?

Social media companies want to continue to exist and be successful without causing ethical problems or friction with lawmakers. In the US and Germany, Facebook has felt it necessary to introduce human “fact checking” by news organisations to address issues with “fake news”, untrue stories that people “like” and so are amplified by algorithms that aim to deepen audience engagement, oblivious to truth. The UK House of Commons Culture, Media and Sport Committee recently launched **an inquiry** into the phenomenon of fake news.

Should organisations deploy automated decision-making technologies that they do not understand? Should the creators be required to include explanations of how decisions are made? If these technologies are so complex and impenetrable that it is impossible to be transparent about exactly how decisions are taken, then how do we protect against the real human harm they might cause?



Ethics, law, accountability, research, sustainability

Ethics, law, accountability, research and sustainability must all be parts of the solution. Data protection laws provide for “fair processing” and for “transparency” but the application of these concepts can be ineffective. Some have called for such **ideas to be reframed**, so that long, complex and usually unread terms and conditions might cease to pass for transparency, for example.

If algorithmic *transparency* is not possible, then algorithmic *accountability* has a role to play. Those organisations that deploy data analytics must be able to account for the outcomes. They must be able to demonstrate strong leadership oversight of operations, effective monitoring, reporting and incident response, analysis and mitigation of risks of harm to people, appropriate internal policies and procedures, privacy by design and ways for people to complain and seek redress. Accountability goes beyond the law, requiring organisations to consider their use of data in a strategic way.

Explicit ethical frameworks such as the one created by the **UK Government Digital Service** are an important part of this accountability approach, enabling the wide range of people involved with data to consider the limitations of their techniques and of the data, and encouraging them to challenge themselves and others about the benefits and limitations of what they do. A challenge for researchers who may have technological solutions to offer is that they appear not to be getting access to the huge data sets upon which data analytics and machine learning often depend. Why? Because organisations are scared of what might happen. They know that negative news stories threaten the huge potential for innovation with data.

For 30 years, the idea of sustainability has been at the core of the human response to climate change. The **Brunland report** defined sustainable development as “development that meets the needs of the present without compromising the ability of future generations to meet their own needs.”

“Sustainability thinking” in data analytics might therefore ask: how can we maximise the contribution that data makes to the economy, society and individuals, while preserving or even enhancing individual freedoms and rights? The idea is elaborated in a Facebook’s **“new paradigm for personal data”**, which emphasises the role of individual data subjects as agents in the data economy, able to choose rights as well as benefits, privacy and data-driven innovation.

Taking the data back

As Schwab highlighted at the 2017 WEF, the rapid development of technology including artificial intelligence and machine learning raises pressing questions about who or what is in control. Ultimately, for a “better digital life,” the excitement of the miracles of automation must be balanced with safety, security, social cohesion and cultural fulfilment.

Digital entrepreneurs have embraced the idea of sustainability in digital environments, seizing the opportunity of **Personal Information Management Systems (PIMS)**, systems that enable people to take control of their personal data and act as a broker for their participation in the data economy. Larger digital players and infrastructure providers too are starting to adopt “customer in control” strategies. By helping people to understand the data ecosystem, decide when and how to participate with their own data, and even to seek the best returns on their data, organisations hope to build trust.

Putting people in control of their data may help to restore trust between people and organisations. Some argue that even this **may not be a sufficient to achieve sustainability**. A bolder approach to achieving justice and tackling inequality in the digital world might entail seeking stronger alignment between the driving goals and measures of success for digital platforms and the needs and aspirations of society.



Citizen participation might be able to reverse the **crisis of legitimacy** faced by political institutions across the world. Digitalization is central to this transformation as it opens up access to information and communication on an unprecedented scale. By supporting participation and enhancing spectatorship, digital technologies offer a strong foundation for social progress, and give citizens the chance to take more active roles in today’s “**platform society**”.

The Digital Life of Cities

Our discussion of *Ethics In Data Science* reveals a developing dance of people and machines and offers a view of how the forces of law and ethics, people and politics are shaping and being shaped by digitalisation.

Situated at the forefront of business and cultural life, urban development offers another perspective. Digitalization and data-driven decisions promise to make civic services smarter, improving many different aspects of the urban environment. The digital infrastructure of cities is characterised by the connecting of things as well as people to communications networks, leading to a proliferation of sensors and data being collected in urban environments.

In March 2017, the second meeting of LSE’s Digital Life series, **Digital Life of Cities** will focus on the data-driven, ‘smart city’. How is digitalization making cities more liveable? How should the smart city ecosystem and its data be governed? What are the barriers and enablers to build sustainable digital urban lives?

This post gives the views of the authors and does not represent the position of the LSE Media Policy Project blog, nor of the London School of Economics and Political Science. They would like to thank Bojana Bellamy (Centre for Information Policy Leadership), Madeleine Greenhalgh (UK Government Digital Service), Stephen Deadman (Facebook), Daniel Bates (O2) and Jean-Christophe Plantin (LSE) for their contribution to LSE’s Digital Life series.

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