EDITORIAL SECTION

Digital policy entails theorising and regulating a dynamic sector domestically and globally

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2022 has been a landmark year in the development of digital technologies and decisions whose consequences will be with us for decades to come. The year has likewise seen government responses in the form of policies aimed at enhancing as well as regulating these innovations and trends, and at times appearing to be barely keeping up. Officials and legislators are increasingly learning-by-doing amid the rapid pace of digital change (thereby demonstrating the need for structural and theoretical thinking vis-à-vis digital technologies).

The most notable developments in this regard came in the latter half of the year: the completion of the purchase and privatisation of social media giant Twitter by Elon Musk in October, the bankruptcy of blockchain-reliant cryptocurrency company FTX in November (Otte and Skopeliti, 2022), and the entry of natural language processing (NLP) and machine learning (ML) – key artificial intelligence (AI) disciplines and commercial sectors – into the mainstream in the form of ChatGPT (https://chat.openai.com/chat) in December.

In South Africa, the government has sought to implement the recommendations of its 2020-concluded Presidential Commission on the Fourth Industrial Revolution (PC4IR), including by introducing the National AI Institute. Strides in the private sector also continue to be made, with ShopriteX investing aggressively in the future of AI-enabled (cashierless) retail in the country, with some R1-billion (roughly US$59.1-million) designated by the company for digital research and development (Moodley, 2022).

The domestic is also international, however. On the geopolitical front, therefore, the promulgation of the United States CHIPS Act, meant to incentivise development of cutting-edge US tech and science industries by the Biden Administration, has the secondary (or perhaps indeed primary) effect of prohibiting funding by US citizens and companies of any entities expanding the semiconductor market in China and in other countries deemed threats to US national security for at least the next 10 years. This will no doubt set back China's fledgling semiconductor industry (currently valued at US$29.6-billion in 2022), and perpetuate the US-China rivalry. In reconfiguring global supply chains (still reeling from the effects of COVID-19), it will have implications for the world beyond the bilateral relationship. This is indicative of a broader trend we are observing: 4IR technologies are becoming ever more securitised and militarised. Indeed the perceived uptake of cutting edge technologies in the Russia-Ukraine War has been one of the key lessons taken away from the showdown by many countries, including the constitutionally passive nation of Japan (Kurumada, 2023). The country has broken nearly 80 years of postwar military policy of having only defensive capabilities by issuing a revised *National Security Strategy*, the country's guiding defence policy document, that pronounces its intentions of having counter-strike capabilities. A crucial aspect of the document is its declaration of a strategy of 'active cybersecurity,' which

will see it attempt to neutralise cyberattacks before they occur. This new strategy also entails recruiting thousands of personnel and growing its Self Defense Force cyber division staff from 700 to 4000 by 2027 (Johnson and Dominguez, 2022).

Apart from the more obvious cynicism read into it by many, including its protectionism (*Xinhua*, 2022), America's CHIPS and Science Act displays an underlying optimism pertaining to a country's ability to revamp its scientific prospects. It is no longer safe to presume a still straightforward relationship between government expenditure on research development (GERD) and actual innovation. Studies show that we are at a time when the payoff from R&D expenditure is at its lowest (Callaghan, 2019). Perhaps the message here is nuance – as Miyagawa sums it up: "R&D spending is not enough to foster growth [...] countries need do more to support innovation and collaboration in carefully chosen sectors" (Miyagawa, 2019). The message resonates for governments across the globe, South Africa's included, having failed to grow, and instead decreased, its expenditure on R&D as a proportion of GDP for the second consecutive year (Mzekandaba, 2022).

All these episodes, only the most notable in a year of innumerable digital events and milestones, require reflection, critique and theorisation to extract their significance as we look towards the future. Among the above-listed developments, questions arise about the power of platforms and the degree to which their ownership should be at the apparent whim of individuals and corporations; whether we are entering a new era of AI dependency, towards the critical threshold of mainstream use, and new ways of working and consuming; the balance of risks and potential gains towards cryptocurrency and their reversibility. Of principal concern is the question of whether states have the capacity to regulate emerging technologies at their rapid pace of emergence. At scale, this in turn raises the question of whether the international community can collectively regulate competitiveness among nations and restrain it from becoming destructive.

In this issue, the contributors tackle these and related questions head-on. These include value-creation (Caroline Azionya), armed drones and humanitarian international law (Eric Blanco Niyitunga), the uses of social media by political parties in elections (Samuel Umoh Uwem), preparing African youths for work (Adio-Adet Tichafara Dinika), 'techenodism' and the metaverse in Africa (Philip Ademola Olayoku), the threats and opportunities presented by the 4IR for women in Zimbabwe (Valerie Rumbidzai Jeche), and the educational potential held by digital technologies (Freeman Munisi Mateko and Bernard Chingwanangwana). Book reviews in this edition look at the important issues of legal education in the wake of the 4IR (Edmund Terem Ugar) and Nigeria's development (Lesego Motsage).

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