INTRODUCTION

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1 When surveying the cusp of the Internet revolution in 1996, Justice Frank Easterbrook felt compelled to pen a paper entitled "Cyberspace and the Law of the Horse" at a conference on "The Law of Cyberspace". His thesis is that any discussion about a "law of cyberspace" is bound to confuse because it is more profitable to discuss the myriad of issues that cyberspace would pose than to try to frame all the issues under an overarching rubric. In many respects, Justice Easterbrook is right. The so-called "law of cyberspace" did not really materialise in that the technology known as the Internet has become so pervasive and some would say, so insidious, that it is now an indistinguishable and integral part of our activities in this Fourth Industrial Revolution that we live in. But even the medium of the Internet as a communications platform and as a medium of exchange has been supplemented and occasionally overshadowed by other significant technological advancements, amongst which include large-scale data analytics, cryptography, machine learning, artificial intelligence ("AI") and robotics.

2 It is therefore apt to describe and review all these areas of society that are impacted by technology as requiring the intercession of a suite of laws which can be broadly called "technology law", the theme of this Special Issue. Even so, it is quite difficult to define exhaustively what one means by "technology law", or even "law and technology". Unlike past Special Issues which have dealt firmly with an existing, delineable field of law or practice, technology law means different things to different people. To some it means the "law of technology": the law governing the use of various technological innovations. These laws may be specific to particular types of technological innovations, such as data protection laws, which were developed in response to the automated processing of personal data and concerns about the possible abuse of such uses of personal data. These laws may be more generic and represent the law's incipient response to technological innovations such as rules and guidelines relating to the use of cryptographic assets and AI. To others, technology law may also mean the "technology of law": the incorporation of technological advances into the practice of law, and, as some may hope, in time, to support the soul and spirit of the law itself. Innovations such as these include electronic discovery, automated document assembly and

self-service court solutions to facilitate access to justice. And all these are before accounting for the torrid pace of technological innovation, where new problems requiring regulation may turn up overnight or old problems are rendered moot with new technological developments. In seeking to deal with and tame such a capricious, mutable creature, solutions have to be found within the law itself, and even outside of the law, since there are few accurate prognostications, let alone opportunities to formulate policies and answers in response.

3 The demands of surveying an uncertain field means that this Special Issue is also quite unique. It is not meant to be, and cannot be equated with, a deep dive into the subtleties of an established legal field. Instead, it collects the fruits of thought and research of different trailblazers in this brave new world. Some of the points raised may be overtaken by subsequent technological developments. Others may yet prove to be the seeds of new policy or regulatory approaches to technology. In this regard, the overarching theme of this Special Issue marks a unique inflexion point in the relationship between law and technology. We, as a nation and collectively as a species, must decide how we want our world to be shaped by technology. It is a truism that we wish to harness the best that technology can offer and keep its ills at bay. But we can only do this by harnessing the collective wisdom of thought leaders from diverse disciplines and from all around the world. The articles in this Special Issue are thus meant to draw together observable commonalities and issues, offer some answers and stimulate discussion for the development of the proper rules and policies.

4 To start us off, Chesterman, with his article entitled "'Move Fast and Break Things': Law, Technology, and the Problem of Speed", highlights the regulatory problems posed by the pace of technological innovation, and the sheer speed and scale at which processes powered by technology take place. Chesterman points out that the Information Age has enabled information flow to an extent where current laws, designed for a slower analogue era, simply cannot keep up, suggesting that perhaps a different approach to regulating technology may be required.

5 Kerikmäe and Metcalf's article on "Machines Are Taking Over – Are the Lawyers Ready? The Estonian Experience" takes up this baton by sharing with us the experiences of Estonia in implementing laws relating to technology and AI. Cautioning against overly sensationalist conceptions of AI, the authors discuss the questions that need to be asked when developing and implementing such laws. While the answer is, in the very best lawyerly tradition, "it depends", Kerikmäe and Metcalf explain how some laws are quite easily adapted for the digital age while others require a completely different, possibly extra-legal approach. They conclude that lawyers with their unique training in ethics and societal

norms will play an even more vital role in contributing to such discussions and policies.

6 Having dealt with the broad picture of law and technology in the abstract, our next five papers delve into the regulatory implications of specific, topical applications of technology. Lau, in "Legal and Regulatory Intervention in the Cryptocurrency Space – An Impossible Task?", takes on the question of cryptocurrency regulation, pushes back against the technological argument that cryptocurrencies are unregulable because they are "trustless", "immutable" and "decentralised", and notes that such difficulties are not necessarily insurmountable. Wong, in "Data Protection Implications of Modern Employee Monitoring Software", examines the capabilities of modern employee monitoring software available on the market for possible data protection issues, and considers whether the use of such software should be more closely regulated, especially since working from home is the new paradigm in the era of the COVID-19 pandemic. Mead, Goepel, Miller and Flanagan, in "Defensibility: Changing the way Organisations Approach Cybersecurity and Data Privacy", analyse the shortcomings of current approaches to cybersecurity and data breaches, and propose in the alternative an enterprise risk management-based approach to allow companies to manage their risks and exposures to cybersecurity and privacy breaches. Hu, in "Private and Common Property Rights in Personal Data", suggests the application of property rights to govern the collection, use and processing of personal data, to empower individuals in their dealings with large organisations over their personal information. Lastly, Khoo, in "Anticompetitive Mergers in Two-Sided Digital Platform Markets: The Case of Uber–Grab", reviews the decision by the Competition and Consumer Commission of Singapore on the merger of Uber and Grab's ride-hailing services, contends – drawing upon economic analysis principles – that the "two-sided" nature of digital platforms renders existing "one-sided" competition analysis inaccurate, and proposes revisions to our existing competition law framework.

7 While the terms "law of technology" and "technology of law" describe roughly disparate fields, these do overlap in the area of court practice and adjudication. Seng and Mason in "Artificial Intelligence and Evidence" deal with both areas by discussing the issues that arise when evidence is electronic or otherwise technologically-produced. They discuss the presumptions of reliability, hearsay and authentication, including the treatment of digitally-manipulated data, and electronic discovery, highlighting the dangers of predictive coding and suggesting several safeguards and prerequisites for the successful use of the same. Continuing on the theme of the use of technology in law and the judicial process, Lim in "Judicial Decision-Making and Explainable Artificial Intelligence: A Reckoning from First Principles" analyses the use of AI in court processes to determine how this can be successfully integrated into

judicial decision-making while retaining adequate safeguards for such uses. Finally, Whalen-Bridge in "Automated Document Assembly: Access to Justice and Consumer Risk" discusses the use of automated document assembly in both commercial and court contexts in Singapore and the US, and looks at the challenges posed by document assembly systems.

8 We round off with two papers inviting us to completely change the way we think about and operate legal systems in the face of legal innovation. As big data becomes more and more readily available for use in all manner of algorithms, Zhang's "Computational Jurisprudence" draws upon the experiences of such innovations in China and makes the case for empirically investigating and simulating legal relationships and judicial processes with the aid of big data, machine learning and social science techniques. Zhang argues that this can be extended to the development of new rules in real time, and would be the basis for a new type of legal jurisprudence, which she terms "computational jurisprudence". In conclusion, Johnson, in "Design for Legal Systems", emphasises the multidisciplinary problem-solving approach that characterises the study of the law. Drawing upon the disciplines of fuzzy logic and object-oriented programming, Johnson demonstrates how design principles or "systems thinking" may be used to organise subject matter and develop laws and legal systems to deal with uncertain subjects and issues.

9 It only remains for me to record my heartfelt appreciation to all the contributors to this Special Issue, whose generous contributions to this highly dynamic and still-evolving field of law have shed much light to illuminate the way ahead. My thanks go out also to Justice Prakash and the Publications Committee for entrusting me with this responsibility and the privilege of putting together and editing this special issue, to SAL's Managing Editor Elizabeth Sheares and Senior Legal Editor Clarice Ting for their efficient assistance in the production of this Special Issue, and Suzuki Tomoe of the Faculty of Law, National University of Singapore ("NUS") for her thorough assistance in the proofing of the articles. Finally, I wish to thank Shaun Lim, my research assistant at the Centre for Technology, Robotics, AI and the Law at NUS. Not only is his article a must read for those who are interested in a serious study of the impact of AI on the judicial process; Shaun's keen interest in technology and keen eye for both the law and for grammar have made this not insignificant endeavour of collating the drafts, commenting on them and collaborating with the referees and with the contributors a rich and fulfilling one. I hope you will learn as much from reading these articles as I have.