

# Preface

It is our great pleasure to introduce this book on the Internet of Things (IoT), which features chapters on IoT legal and policy issues by some of the leading authorities and thinkers from government, academia, and private practice, and includes insights from U.S. Senator Mark Warner, the current vice-chair of the Senate Select Committee on Intelligence, and Secretary Michael Chertoff, who served as Secretary of the Department of Homeland Security under President George W. Bush. The IoT, along with related technological developments, is transforming our world. We are in the relatively early stages of a new technological revolution, where everyday objects, such as our appliances, cars, medical devices, and wearables, as well as industrial control systems, are communicating with us and with each other. Today, it is estimated that the global number of devices connected to the Internet is over 17 billion, or more than two devices per every human on the planet, and it is projected that this number of connected devices could more than double by 2025. The IoT has been described as a game-changer for businesses, policy makers, and attorneys, and it has recently been projected that applications of IoT technologies will produce over a trillion dollars of value for industrial companies.

This book contains chapters by more than 30 experts from a variety of backgrounds and points of view addressing a wide range of topics relating to the IoT with a multidisciplinary approach. The issues that the book addresses include the use of IoT technology in connected cars, health tech, and unmanned aerial vehicles (aka drones); IoT and technological developments such as 5G and blockchain; the current state of laws and regulations relating to the IoT both in the United States and globally; risks associated with IoT devices, including security and privacy issues; how state attorneys general protect consumers in the IoT era; the impact of the

IoT on intellectual property and insurance; guidelines for employers, including corporate counsel, regarding the IoT in the workplace; and the future of the IoT from the perspective of an MIT research scientist.

The promise of the IoT, as well as the potential challenges and risks associated with it, was becoming increasingly evident when Cynthia served as chair of the American Bar Association Section of Science & Technology Law (SciTech) from 2015 to 2016. In 2015, it was the 50th anniversary of Moore's Law. In 1965, Gordon Moore, the research director of Fairchild Semiconductor Company, observed that the number of transistors per silicon chip doubles about every two years, which led to the prediction that computing would dramatically increase in power and speed, and decrease in relative cost, at an exponential pace. Moore's Law helped to predict the potential for the digital transformation we are now experiencing with the IoT. In addition, advances in cloud computing, big data and deep learning analytics, connectivity and networks, edge computing, and artificial intelligence algorithms also are playing a critical role in the explosive growth of the IoT. The Section wanted to harness the knowledge and expertise of its members to focus its energy on these cutting-edge, rapidly developing issues. The Section, under Cynthia's leadership, formed for the first time a separate committee that focused on IoT issues and also organized the first National Institute on the Internet of Things, a two-day conference in Washington, D.C., that featured more than 40 leading experts on IoT. The Institute included government leaders, academics, lawyers, judges, and experts from the private sector who came together to explore the legal challenges and concerns surrounding the use of "smart" devices. We are proud that SciTech has continued to sponsor highly successful IoT National Institutes every year since the inaugural Institute in 2016, and several of the speakers from these Institutes are authors of chapters in this book.

Many members of the Section have worked hard to organize these Institutes, and Lucy Thomson in particular has played a critical role each year. The Section began its focus on how mobile devices are transforming our economy, our culture, and our legal systems during Lucy's term as SciTech chair from 2012 to 2013. Under her leadership, the Section created a new Privacy, Security, and Information Law division and conducted a year-long exploration into the opportunities, challenges, risks, and legal implications of the explosion of mobile technologies and their uses around the world. Cynthia and Lucy are pleased that Chris, an attorney with deep technology expertise and a background in RFID technology (one of the precursors to the IoT), has joined the Section's IoT efforts.

This book reflects the hard work and dedication of many people, and we want to thank the ABA SciTech Section director, Caryn Cross Hawk, and her staff; the Section's Book Publishing Committee under the leadership of Bonnie Fought and Michael Hawes; and the ABA Publishing staff, especially Marisa L'Heureux and Sarah Orwig, for working with us to ensure the timely publication of this book. We also want to thank our families for their support and understanding as we have each spent countless hours working on this book.

SciTech's mission is to provide leadership on emerging issues at the intersection of law, science, and technology and to promote sound policy and public understanding of these issues. We created this book to further the mission of the Section by focusing on this important emerging area of IoT.

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