PREFACE

Data fuels digital change. It forms the basis for numerous new products and services and can bring about specific advantages such as personalised medicine, autonomous driving, or more efficient administration. While data may be indispensable for the generation of new knowledge and may aid rational decision-making in the spheres of politics, society, and the economy, it brings with it an element of fear stemming from issues such as vulnerable consumers, privacy concerns, and the possibility of algorithm-based decisions being executed independent of human control.

The ability to collect and process ever-increasing amounts of data is a **key to innovation and growth.** For states such as Germany with a globally networked and high-tech economy, this presents enormous opportunities – especially due to the increasing amount of non-personal data made available through industrial processes as well as public sources. However, neither Germany nor Europe is fully exploiting the innovative potential of data for the benefit of society, the economy, science, and the state. The collection and analysis of data does not have to be in conflict with the European approach to data protection, which marks an important standard for the responsible handling of data in the global context.

Numerous US and Chinese companies have occupied central strategic positions in the digital economy in recent years. These include cloud systems, digital payment systems, online trading, and Artificial Intelligence (AI). **Despite some notable successes, Europe and Germany still lack a comprehensive vision for the "age of data".** Nevertheless, in the spring of 2020, the European Commission launched its roadmap for digital policy – a "Data Act" to create a single European data market is planned for 2021.

Against this background, it is worth taking a **comparative look at the Asia-Pacific region** as it is generally considered the region that currently leads in both global innovation and economic growth.

Hence the Konrad Adenauer Foundation's regional programme "Political Dialogue" based in Singapore started a large-scale study in September 2019 on data and innovation in Asia-Pacific. We want to turn our gaze away from Silicon Valley to other important "data nations" in order to investigate the ambiguous and not-at-all-clear **connection between the use of digital data and the innovative capacity of economic and social systems**. However, we will not limit our analysis to technical and economic issues as the exploration of this ambiguous connection inevitably involves the fundamental political question concerning the systemic competition between liberal-democratic societies and authoritarian development models – in particular, that of the People's Republic of China – with regard to the manner in which data is attained and used. To put it more pointedly, the question is: in times of omnipresent data generation and its use by increasingly AI-based systems, is the ability to innovate only to be had at the price of the complete disclosure of private data to governments and corporate actors? Or can an alternative approach, one balancing both the protection of basic rights and promotion of innovation, be found?

The study was carried out in collaboration with the National University of Singapore (NUS) and was supported by the country offices of the Konrad-Adenauer-Stiftung in Asia-Pacific. We selected **Hong Kong SAR, India, Japan, the People's Republic of China, Singapore, South Korea, and Taiwan** as the contexts to be examined. We looked at the areas of transport, finance, administration, e-health, and smart city to understand how added value for society and the economy can be created through modern data use.

We aim to contribute to the discussion on how to balance data usage and data protection in order to promote innovation in this digital age.

The following questions guided us in this study:

Narratives

How do companies, state actors, and civil society understand the handling of data – especially personal data – and the ethical assessment of such use? What are the pre- vailing narratives in each country?

Legal Bases

What are the laws and regulations that apply to the collection, use, storage, provision, disclosure, retention, and disposal of personal and non-personal data? What is the status of the development of legislation for these matters and how do different stakeholders deal with the issues of data protection and data portability between different (private and public) systems?

Ecosystem

Data is part of a larger "innovation ecosystem". Its potential can only be realised through interaction with other innovation-promoting elements. What specific legal, technological, infrastructural, cultural, and economic aspects of a country shape the respective ecosystems and determine performance?

Structure of the Study

This study begins with **a representative population survey on data culture of three countries – Singapore, Taiwan and Japan**, covering perceptions on various issues pertaining to data and digitalisation. Findings suggest that data cultures in these three countries are marked by a wide use of digital technologies and favourable support for innovation. However, there is also widespread concern about the collection and use of personal data by data controllers, especially large technology companies.

This first country report begins with a case study on the Southeast Asian city-state of Singapore and focuses on the fields of transport and public administration. The report shows how the ride-hailing service "Grab" became an integral part of the city's transportation system and how it has now expanded its services to include food delivery and financial services. The report also focuses on how the state agency known as Gov-Tech is promoting digital innovation in public service administration under the strategic vision of a Smart Nation.

Following the discussion on smart city, **the second report focuses on the case study of Japan's Woven City**, which highlights the opportunities of a futuristic Japanese city being planned by Toyota Motor Corporation, in order to show how Japanese are responding to the possibilities and problems of data security, privacy and innovation through its smart cities initiatives.

Next, we move on to finance technology (fintech). **The third report focuses on Hong Kong and analyses one of the key fields of the data innovation landscape – the emerging fintech industry**, through the lens of innovation and data policies, as well as citizens attitudes towards data sharing. The report also shows the increasing importance of China's role in shaping Hong Kong's fintech industry with a case study on Ant Group's cancelled IPO in 2019.

The forth report focuses on India's data and innovation landscape through case studies of fintech and digital health. The report shows the range of efforts that the Indian government has invested in and contributed to the fintech and e-health spaces to spur innovation. Fintech adoption and development has been eased by the government's IndiaStack framework that has generated a landscape where firms, businesses and citizens interact and transact. Several digital health initiatives are currently afoot to transform the administration and delivery of healthcare. Advances in both areas, however, have occurred without a comprehensive data protection framework, which, once enacted could complicate and constrain innovation.

The fifth report examines the key developments in data policy and innovation in South Korea, focusing on the domains of regulations, namely the "Three Laws of Data", and e-health during the COVID-19 pandemic period. The case of South Korea shows the importance of careful consideration of what it means to balance data innovation with privacy, and the trade-offs on either side of the spectrum.

The sixth report aims to examine the complex relationships of key stakeholders in socio-technical ecosystem of data innovations in Taiwan through two important case studies in 2020: COVID-19 technological epidemic prevention and smart governance for personal data (eID implementation with MyData platform). Findings show that Taiwanese society has a strong connection among the government, public and enterprises to pursue the public interest through increasingly transparent open data culture.

The seventh report analyses China's determination to uphold its data sovereignty through the case studies of Ant Group and Didi Chuxin. Finding shows that China has shifted its data policies in recent years to uphold data sovereignty and national security by tightening control over domestic and cross-border data flow. The report helps us understand the unique dynamics that shaped the innovation and data culture in China.

We hope that the diverse pictures presented on the subject of data and innovation in Asia will provide food for thought in Germany, Europe, and Asia itself.

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