

Let's Confidently Embark on the Digital Transformation – A Look at Asia

Katharina Naumann, Pencho Kuzev, Christian Echle

- ▶ Trust in the government's digital expertise and the public's digital literacy have a very strong impact on the digital transformation of a society.
- ▶ Administration and service platforms are the founding pillars of a digital "smart" state. Moreover, the opening of the government and administration (Open Data) and the integration of civil society and business in the sense of Open Government are crucial.
- ▶ There is also a strong awareness for data protection in Asia, but it in fact plays a minor role in digital innovation.
- ▶ The digital transformation in Germany can be tackled more dynamically by integrating state, business and the public: To drive government innovation, data and digital literacy must be broadly established in the administration. At the same time these skills need to be communicated more widely among the population. For business-driven innovations, so-called regulatory sandboxes afford the opportunity to test innovative business models in a supervised procedure.

Table of Contents

Digital Innovation and Transformation – But How?	2
Moving Forward Instead of Administrating: The State as a Driver of Innovation	2
Data Protection – Increasingly in the focus	6
Regulation that Promotes innovation: Sandboxing as a New Mindset	7
Trust as a Decisive Factor	8
Conclusions for the Digital Transformation in Germany	9
Legal notice	11

Digital Innovation and Transformation – But How?

Well-developed digital infrastructure, modern administration, imaginative approach to data and effective data protection are key to innovation and growth. However, in Germany we still fall short of the mark when it comes to realising the potential harboured in the digitalisation of society, the economy, science, and the state. Given that, alongside the US tech giants, it is mainly Asian companies and states at the vanguard of the digital transformation, it is worth taking a comparative look at Asia as the world's leading growth and innovation region.

Data protection, which is often cited as a stumbling block for European innovation, is not the decisive factor. A glance at Asia reveals: In the field of digital innovation, what really matters is the way in which innovation is initiated. Another important aspect is the extent to which people place their trust in government agencies and companies, and how competent they deem them when dealing with new technologies.

Moving Forward Instead of Administrating: The State as a Driver of Innovation

The basis for digital transformation in many Asian countries are strategic political initiatives that define long-term visions. Much attention is given to China's "Next Generation Artificial Intelligence Development Plan" and the "Made in China 2025" strategy, whereas smaller economies are positioning themselves by means of specific digital strategies as well. The example of Taiwan and Singapore show how state-funded innovation with the involvement of civil society in an environment shaped by high levels of trust in government agencies, greatly advance the digital transformation. Digitalisation of public administration as well as the strong focus on data, computing, and connectivity, are central to both initiatives. The two countries' initiatives are characterised by enthusiasm and passion for a digital transformation.

Since 2014, Singapore has set itself the goal of becoming a "Smart Nation".¹ The Government Technology Agency (GovTech), operating across various ministries, is responsible for the digitalisation of all administrative processes. It provides the digital infrastructure for administration, is accountable for processing all government data and develops its own apps and digital services. That means the state is not only a driver of innovation, but also generates innovations through its own IT developments: it was the above-mentioned agency, GovTech, which developed the world's first Bluetooth-based corona warning app. By summer 2020 alone, the agency had provided twelve apps and services in the fight against corona. Singapore has taken the step towards a completely digital and citizen-focused administration – "a government that is digital to the core and serves with heart": Citizens as well as businesses

can access more than 1,600 online services and 300 apps. Ranging from passport applications to tax assessments, communication takes place exclusively online, and processes are completed with an electronic signature and electronic payment. **The “SingPass” platform, where every inhabitant is registered, is a prerequisite for this as a “digital identification”.**

Such a platform is also the linchpin of digital administration in Taiwan. In 2017, the government formulated the vision of a Smart Nation² with open data and innovative applications as cornerstones. The so-called MyData platform and the inter-ministerial transmission network and portal “T-Road”, together with the electronic identity (electronic identification cards), eID in short, as the key for using personal data, form the core of the country’s modern digital administration (the platform is very similar to the Estonian X-Road and platforms that have been in operation in Finland and Estonia for years). **Once citizens have verified their identity using the eID, they can apply for various government services via the T-Road.**

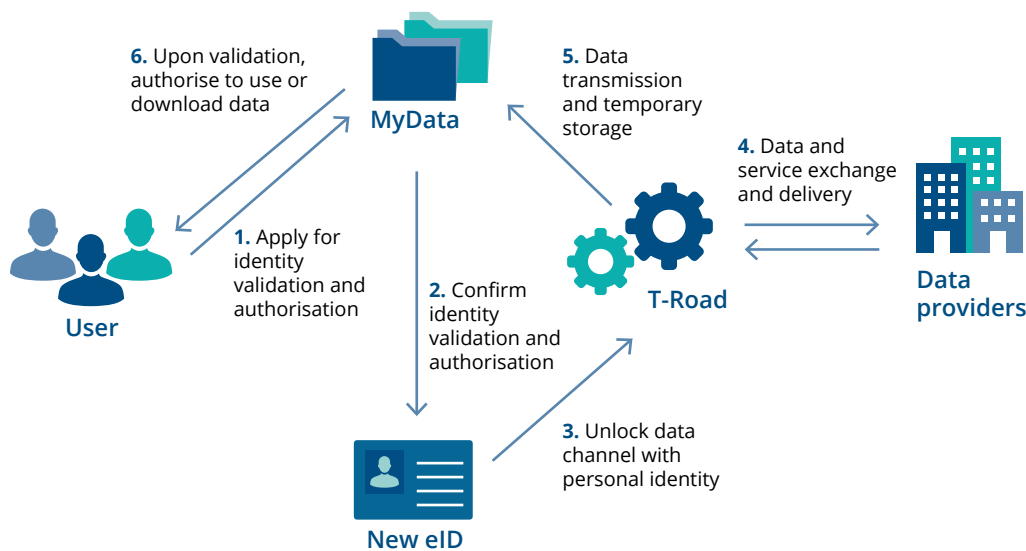
Digital state platform
as a core of the
innovation landscape

Digital Administration and Citizens Platform as the Core of a Smart Government

The personalised digital service platform MyData developed by the Taiwanese National Development Council (NDC) is the central project as part of the Taiwanese Smart Government. **Based on the central idea of “sovereign consent” of the citizens and secure access to data, an online service platform was developed that connects various government and administrative agencies.** For instance, certain certificates do not have to be requested again and additionally by citizens, if they can be applied for and transmitted electronically. In other words, instead of the people, the “data flows” from one state institution to another.

The eID gives the right of control over personal data back to the citizens. They use the MyData platform to decide which personal data is forwarded to which institutions for one-time use. Data sovereignty therefore remains with the citizen. With the consent of the data subject, the eID authorises authorities and financial institutions to transfer personal data for one-time use, which increases the quality and efficiency of the public service. At the same time, this could be seen as an expression of the digital sovereignty experienced by citizens.

Digital sovereignty



Source: Notes on T-Road portal planning. Summarised by the researcher from information provided by National Development Council (2020) in: Trisha T. C. Lin, Data innovation in a smart nation: Digital health for Covid-19 epidemic prevention and digital governance for leveraging personal data in Taiwan, in preparation.

Surprisingly, such transformation processes are not a one-way street in Asia either. The mandatory nature of many digital tools has been frequently criticized by civil society. For instance, the fact that implementation of the MyData platform in Taiwan had to be postponed several times was due to increasing concerns about data security and in part, to data protection. Pressure from civil society had an impact across party lines and led to the further development of digital administration having been linked to additional supervisory measures.

Open Data as a Driver of Innovation

Transparency and open data are a key element of civic participation and innovation. They are considered an important part of economic growth and better governance throughout the world,³ serving as the foundation for an array of services and applications. Anyone can develop competitive services and products with Open Data (e. g., mobility apps, interactive maps, overviews of state budgets or corona virus dashboards designating the number of new infections, burden on intensive care units et cetera). The importance of Open Data in Taiwan has attracted growing attention since 2016 with the promotion of e-government and the inauguration of Taiwan's Minister without portfolio Audrey Tang. **The Freedom of Information Act, as the basis of Open Data policy, addresses information in general and not data in particular, and intends to establish trust in the political system.** Whereas raw data are particularly important for commercial use, citizens are likely to be more interested in information and knowledge.⁴ That is why the connection to the concept of information instead of data is exemplary, since it clarifies that the Open Data regulation refers to all three levels (data, information, knowledge).

Freedom of
information
and Open Data

According to Article 5 of Taiwan's Freedom of Information Act, government information shall be actively made available to the public [...] or provided upon request by any person. The act further defines "public information" as information created or acquired by a government agency within the scope of their powers and stored in the form of documents, images, photos, magnetic discs, magnetic tapes, optical discs, microfilms, chips with integrated circuits or others [...]. The information should be actively made available to the public. For example, this includes grants, agency meeting's minutes, research reports by experts or scientists funded and commissioned by a government agency.

Collaboration Between Government, Civil Society and Business

In Taiwan, one can clearly see how strong cooperation between government, civil society and businesses has emerged in the sense of Open Government.⁵ **Individuals or civil society organisations actively used data provided by the government to combat the Covid-19 pandemic.** One example for this are maps that illustrated availability of face masks during the acute scarcity of masks on the island. The Taiwanese government worked extensively with experts from private business, telecommunication operators and distribution channel operators. Thanks to Open Data, civil society engineers created a total of over 140 versions of various “face mask maps” and also established an “information platform for the supply and demand of face masks”. The active supply of Open Data counteracted false reports and fake news because anyone could verify the data.

In Taiwan, the National Development Council (NDC) is responsible for promoting data innovations and steering data policy. The NDC has taken fundamental decisions with the potential to shape future society. The NDC divides data into three categories⁶ – the spectrum ranges from closed to shared to open (the model is identical to the British Open Data Institute):

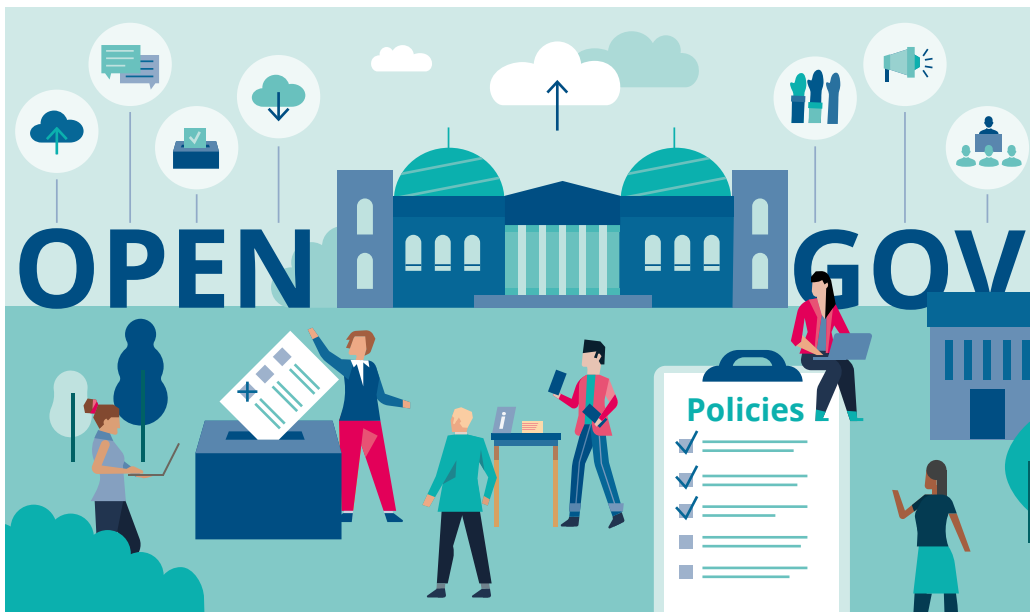
- › Open Data which can be used for free by the public,
- › Shared data, that is, data for limited use under certain conditions, whereby the government has the right to charge fees; and
- › Closed data, that is, data that cannot be viewed and used due to its sensitive nature, privacy, and confidentiality.

In Taiwan, the move towards “Digital Smart Governance” is thus strongly associated with the proactive involvement of IT talents from civil society groups and the private sector. The understanding of Open Government in Taiwan implies that these stakeholders are heavily involved in all projects. Minister Audrey Tang is a powerful driving force behind this cooperation. The defined goal, alongside improving digital government services, is also to achieve public-private joint governance by data – whether it be personal data, Open or Big Data – being used in a transparent way and the strength of all sectors of society from industry to government to academic and research institutions being pooled and mobilised. Already back in 2018, 64 per cent of data provided by the Taiwanese government was machine-readable, structured and in an open format – a leading figure worldwide.

The active participation of the private sector also imbues the government with experience and inspiration, thus enabling it to develop systems that are more closely aligned with public needs.

Open Data against
Fake News

The Data Spectrum:
Open – Shared –
Closed



Source: National Development Council, Taiwan, <https://www.ndc.gov.tw/en/>

Data Protection – Increasingly in the Focus

Particularly during the corona pandemic, during which Asian countries often relied on technology⁷ for contact tracing, for supervising quarantine or, as in Taiwan, for issuing masks, criticism was repeatedly levelled against the excessive collection of location data, bank data et cetera.⁸

Signal effect
of the GDPR

There can be no doubt that the European General Data Protection Regulation had a signal effect in the Asian region. Japan's Data Protection Act provides a comparable level of protection to the European General Data Protection Regulation (GDPR), and South Korea is also on the verge of completing the GDPR adequacy certification. However, issues surrounding the processing, storage and forwarding of personal data are subject to less controversial debate compared to Germany, particularly when it comes to reconciling public interests with other protective rights. The fundamental stance adopted by many Asian countries is that personal rights must be partly relinquished for the safety of the public. At the same time, however, it is argued that there needs to be a corresponding remedial strategy for data security and data protection in the event of data abuse.

Even in China, discussions on data protection are gathering momentum. The Cyber Security Act from 2017 was the first law to lay down the basic framework for how businesses and government agencies deal with "important or critical data", which are handled with greater sensitivity and more rigorous controls and restricts the transfer of data outside the People's Republic. The following law on the protection of personal data "Personal Information Protection Law", which is likely to be adopted at the end of 2021, is also oriented towards the GDPR to some extent.

Yet in some cases there is no legal framework, or the supervisory structures are under-developed. In Singapore, for example, the rules on data protection presented in the Personal Data Protection Act only apply to private persons and private companies and offer a wide range of possibilities to use personal data even without consent. The provisions on data collection, storage and evaluation do not cover government bodies. When handling data they

are only bound to various rules applicable to public officials. In some countries, there is also no authority for monitoring compliance with regulations. Taiwan, for instance, ought to at first establish such a supervisory authority to ensure compliance with existing data protection regulations. That is why discussions comparing data protection with Asian countries seem rather inappropriate today.

However, there can be no doubt that issues pertaining to data protection are also important in Asia. **In a representative survey carried out by the Konrad-Adenauer-Stiftung in Japan, Taiwan, and Singapore,⁹ concerns were raised about data misuse,** be it online registration using personal data for purchases, unauthorised retrieval of medical data, theft of credit card data or identity theft. Especially in Singapore and Taiwan, where digitalisation is more advanced than in Japan, a greater number of people are expressing their concerns about data abuse.

Survey carried out
by the Konrad-
Adenauer-Stiftung

What is more, users in all three countries feel dependent on major technology companies. Around two-thirds of the population in each of the three countries tend to or strongly agree that major technology companies are an inevitable part of their daily lives, whose services they cannot eschew. **Furthermore, more than half of those surveyed are worried that major technology companies will not handle confided data in the proper manner.** Therefore, also from an Asian perspective, the European discussion about a “gatekeeper regulation” of the large digital platform seems to be justified.

The level of data protection plays a subordinate role in these evaluations. Irrespective of the extent to which they are acquainted with statutory regulations, people in Japan and Taiwan assess the provisions to be insufficient for the most part. Whereas in Singapore, the high level of trust in the government fosters trust in data protection rules. **In addition to the actual regulations, one thing is therefore crucial for the willingness to disclose personal data online: Trust.**

Despite increasing discussions on data protection and the above-mentioned fears, most of them remain without consequence. Although the implementation of applications are slowed down in some cases, projects almost never fail due to data protection concerns.

Regulation that Promotes Innovation: Sandboxing as a New Mindset

Technological innovations are generally considered essential for the development of society, and this also applies to Asia. A minority remain sceptical, however. In the above-cited study, almost one fifth of people in Singapore and one quarter in Japan negates the statement that innovation brings more benefits than harm. A further example from Singapore shows how such misgivings of the public when dealing with new products and technologies can be taken seriously:¹⁰ Singapore has awarded one- to two-year trial licences for bike sharing. While previous cycling and electric scooter sharing programmes have been discontinued, this enables companies to obtain a full licence. The prerequisite is that, during this trial period, they have ensured that unintended consequences of their business model, such as indiscriminate parking of their bicycles or scooters, can be prevented.

Interestingly, this license also obliges the provider to share data on locations of unused bicycles, routes travelled and cycling times with authorities on a weekly basis. The aim is that this data improves transportation on the densely populated island nation.¹¹ In Europe, too, discussions are being held on the approach behind such regulatory sandboxes. As shown in the above-cited example, this affords the opportunity to test innovative business models

Data sharing
obligations linked
to concession

in an accompanied procedure. Such a procedure also leads to risks only being discussed when they occur. This ex-post analysis lies in contrast to the approach often practised – and criticised – in Germany, which considers, and rule outs all eventualities from the outset. “Just do it”, a mindset of start-ups finds its regulatory equivalent here.

Trust as a Decisive Factor

The digital transformation of a society will only succeed if there is a high level of trust and belief in the added value of the new services and products. The exemplary role of the state when dealing with digital innovation plays a central role here.

How the state deals
with innovation.

In Singapore, general trust in the government is very high, but this trust also stems from the above-cited approach towards innovation by means of “regulatory sandboxes”, since regulations are carefully adopted and tested. **The great digital competence of government agencies, as reflected in the number of apps developed by GovTech and used by millions, also contributes towards building trust.** As mentioned above, in Taiwan this is achieved by Open Government and actively integrating civil society.

Conversely, mistrust leads to greater scepticism of new products and services. This can be observed using the example of Japan. Here, only a minority trust the government (22 per cent) or the administration (31 per cent), and only 39 per cent believe their data to be in good hands with government agencies. Added to this is a culture in which fax machines and personal hanko seals continue to be prevalent on printed documents as opposed to digital documents. Use of “My Card Number”, for instance, which provides Japan’s registered inhabitants with a unique numerical identification (a twelve-digit number), is correspondingly low here. Fewer than 30 per cent of Japanese have used it to date, despite certain conveniences provided by My Number Card, and monetary incentives from the Japanese government when applying for the card during the Covid-19 pandemic.

Qualms about data theft when tapping into digital instead of analogue services might also play a role here. In Asia as well we repeatedly hear news about data leaks and hacker attacks. It is likely that this cannot be fully avoided anywhere. Trust in security systems and the competence of those responsible is therefore even more important when personal data is stored, particularly highly sensitive health data.

The study suggests that it is easier to win trust when people consider their own digital competence (digital literacy) to be higher. In Singapore, 43 per cent of respondents deem themselves to be very competent when using the latest technology, while this is only 20 per cent in Japan. At the same time, there is a greater awareness regarding the misuse of technology in Singapore. 79 per cent of respondents in the city-state indicate their great concerns about identity theft. However, only 31 per cent of respondents in Japan share this same concern. The combination of confidently using modern technology accompanied by knowledge about its dangers, enables Singaporeans to better assess their own government’s approach to the digital transformation. If this approach is positively assessed, as in the case of Singapore, this results in a much greater level of trust in the digital transformation.

Since 2020, primary schools in Singapore have been offering a coding learning unit for all pupils in their last year of school. Additionally, there are also public advertisement campaigns against scam tactics on the internet and cybercrime in the broader sense. **All this creates the impression of a government wanting to include its citizens in the digital transformation and supporting them with this to some extent.**

Conclusions for the Digital Transformation in Germany

That Germany needs to catch up in the field of digitalisation and digital administration is obvious. Systemic competition with China, where ultimately nine of the world's largest technology companies have emerged in recent years, is also cited here. So, one thing is for sure: The digital transformation in Germany and Europe needs to gain traction.

The Asian countries under investigation provide Germany and other European states with impetus:

1. Trust in the state and a digitally competent administration are an important precondition for the entire national innovation ecosystem. To this end, relevant competencies need to be developed over the long-term. Administration and service platforms are proving to be the cornerstones of a digital "smart" state and should be supported with high-profile measures – why the state digitally implements certain measures and what the added value of this is, requires greater transparency. What is more, the opening of the government and administration and the integration of civil society and business in the sense of Open Government are crucial.
2. Business-driven digital innovations require regulatory safeguards that facilitate as well as protect. Regulatory sandboxes are certainly one option for reconciling more freedom for innovation with legal certainty.
3. Alongside state competence and regulations promoting innovations on the one hand while protecting citizens and consumers on the other, the latter also need to be integrated into the process. Society's digital literacy is important here. These skills can be fostered from primary school right through to programmes for seniors.

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- 1 Cf. transcript of the speech by Prime Minister Lee Hsien Loong at the launch of “Smart Nation” on 24 November 2014, <https://www.smartnation.gov.sg/whats-new/speeches/smart-nation-launch> (last accessed on 19.07.2021).
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 - 4 Andreas Wiebe, Open Data in Deutschland und Europa, Konrad-Adenauer-Stiftung 2020, <https://www.kas.de/documents/252038/7995358/Open+Data+in+Deutschland+und+Europa.pdf/443eda33-cf73-172e-cba4-e599f-27c4a36?version=1.2&t=1580902187055> (last accessed 13.07.2021).
 - 5 Trisha T. C. Lin, Data innovation in a smart nation: Digital health for Covid-19 epidemic prevention and digital governance for leveraging personal data in Taiwan, in preparation.
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 - 9 Jochen Roose and Natalie Pang, Data Security, Privacy and Innovation Capability in Asia, in preparation.
 - 10 Here, 87 per cent of people agreed to the statement “innovations bring more benefits than harm”. In comparison to Taiwan: 92 per cent.
 - 11 Natalie Pang and Wong Kwan Lin, Data Innovation in a Smart City, Konrad-Adenauer-Stiftung 2020, https://www.kas.de/documents/288143/8095698/Data+and+Innovation+in+Asia-Pacific_Report+1+Singapore.pdf/c4b6b7e3-2199-7500-d58e-771cbda9027c?version=1.0&t=1606186826325 (last accessed on 14.07.2021).

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The Authors

Katharina Naumann is Desk Officer for International Media Programmes and EIZ Public Relations in Berlin and was previously Programme Manager for Digitalisation in the Regional Programme Political Dialogue Asia, Singapore.

Dr. Pencho Kuzev is Policy Advisor at the Konrad-Adenauer-Stiftung in Berlin. His particular focus is on data economy and the competitive framework in the European Digital Single Market.

Christian Echle is Head of the Regional Programme Political Dialogue Asia with headquarters in Singapore.

Konrad-Adenauer-Stiftung e. V.

Katharina Naumann

Desk Officer for International Media Programmes and EIZ Public Relations
Konrad-Adenauer-Stiftung e. V.
European and International Cooperation
T +49 30 / 26 996-3437
katharina.naumann@kas.de

Postal address: Konrad-Adenauer-Stiftung, 10907 Berlin

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