We started this book project in early 2019 when nobody had any idea about the consequences of the covid-19 crisis. While writing this final reflection chapter in April 2020 the world has completely changed. The coronavirus is now spreading around the world. In the urge of defeating the coronavirus drastic measures have been taken by various countries. Some of these measures rely on new Internet technologies such as GPS tracking, facial recognition, contact tracing, drive-through testing, etc.

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South Korea has been coined as a role model in handling the coronavirus outbreak. South Korea, like for example China, Iran, Singapore, and Taiwan, has been quick to use innovative IT tools and techniques to fight against the virus. Wireless communication technologies, such as 4G—and the new 5G—play a major role in managing the crises and in tracking peoples’ movements. Today, tracking the smart phones of coronavirus patients ranging from anonymized aggregated data to monitor the movement of people more generally. Until today, tracking the movements and activities of people is restricted by limited technologies and strict regulations. The 5G standard, heavily pushed by Chinas multinational enterprise Huawei, will be much more powerful than the current 4G standard. The 5G standard leads to a crossroad that will most likely either end in digital liberalism or in digital authoritarianism. The latter will cause ideological, geopolitical, economic, and national security conflicts between China and other countries. This edited book discusses the intertwined relationships between Huawei, China, global standard setting and the implied threats.

1 Huawei: 5G and the Link to the Chinese Government

Are we at a crossroad that could lead either to digital authoritarianism or to digital liberalism? What are the consequences of a global technology leader in communication standards? What is the role of the Communists Party of China in this game? What are the answers from other countries to these questions? The 13 chapters of this book, written by scholars from different countries (e.g. U.S.A., China, European countries) and with different academic backgrounds, take a deep look into these questions.

The closest denominator to summarize the in-depth discussions in this book lies in the question about consequences and threats of power over physical and technological connectivity in combination with liberal vs. authoritarian regimes.

Huawei plays a key role in this game because of two reasons. First, Huawei is a leading global telecommunication firm in the 5G
technology, a wireless telecommunications standard, which promises revolutionary changes in speed, capacity, and efficiency. In combination with new technologies such as artificial intelligence (AI), big data, cloud computing, robotics, and smart sensors this technology becomes a superpower to control people in every aspect of their lives. Second, as intensely discussed in this book, Huawei is a Chinese company with very close ties to the Communist Party of China. Yu (Chap. 5) states that “Huawei’s global leadership in 5G infrastructure and China’s global ambition … are … one.” And it is well known that China has a quite different understanding of privacy, freedom, democracy, and human rights than that of many other countries.

2 Huawei as a Threat?

Huawei’s global 5G expansion is described in this book as a multidimensional threat to the Western world: (1) as a national security threat to non-Chinese countries (Chaps. 2, 3, 4, 5, and 8); (2) as an economic threat (Chaps. 2, 3, 4, 7, and 8); (3) as a geopolitical threat (Chaps. 2, 3, 4, 6, 7, and 8); and finally (4) as an ideological threat (Chaps. 5 and 8). But Chaps. 4, 5, 6, and 9 show that the Huawei case hides another very interesting and important aspect, which is beyond industry leadership (Chaps. 10, 11, and 14), geopolitics, and companies’ competencies and resources (Chaps. 10–14). It is about the globalization of the high-tech world, where autocracy is much more prominent than ever. New technologies such as the 5G standard enables the systematic domination, regulation, and control of every detail of human life. As Zhao (2016) point out in his book *A Possible World of All-under-Heaven System*, we should not underestimate the possible threats a technological based dictatorship. In this context, Shortgen (Chap. 3) refers to Russian President Putin when describing the threat of AI leadership: “Artificial intelligence is the future ... Whoever becomes the leader in this sphere will become the ruler of the world” (Meyer 2017).

Consequently, we need to ask if it is true that we now face the threat of establishing a new technological standard that is set by a non-transparent, and probably ideologically driven company, which is used by the
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Communist Party in China. Ultimately, this is the core of the controversy debate in this book.

3  The Threat of Technology
Standard Setting

The key issue with standard setting and new Internet technologies is that there is a tendency toward a monopoly due to the underlying characteristics of a winner-takes-all market. Firms can shape the future of an industry by developing a leading technology and an industry standard (Tsang & Futschi—Chap. 6). Huawei’s proactivity in applying for new patents and industrial standards shows the impacts of its innovation capabilities (Chaps. 10–12) and indicates that Huawei is taking advantages of its technology to make other firms’ innovation more dependent on its innovations (Tsang & Futschi—Chap. 6).

Connecting the technology leadership with geopolitical aspects, Kirste and Holtbrügge (Chap. 13) write: “When and how nations employ 5G technology will not only determine their economic power position for decades to come, but also have a great influence on their sovereignty over other states, their independence, and their political power…. those [enterprises] … building and controlling these networks will have a significant influence on what the 5G technology of the future will look like.” Furthermore, “… [t]he stronger the ties between the … [enterprise] … and the national government, the larger the influence that state can exert … the larger their [the state’s] power and influence over other states will be in the future.”

4  China Dream and BRI and 5G Technology

Drilling into the Huawei case, it is striking how Huawei’s technology rise is complementing the global “China Dream” objective and how it is supporting China’s Going Global strategy. Blanchard and Yu (Chaps. 4 and 5) point out that China’s ultimate strategy will be to govern the world by
2050 with a set of global institutional architecture, emphasized on “indigenous innovation.”

China’s Belt Road Initiative (BRI)—as part of the China Dream—is a very good depiction of China’s claim. Taking “the Silk Road Economic Belt” and “the 21st Century Maritime Silk Road” as axis, the BRI now is the largest platform for international cooperation. The BRI is a massive project involving the funding and construction of a system of physical infrastructure such as roads, railways, oil and natural gas pipelines, ports, and airports (Zhang, Alon and Lattemann 2018). But with Huawei’s worldwide fiber-optic and 5G technology projects BRI is becoming far more comprehensive since it also covers the standard setting of the future communication technology.

Although Huawei is coined officially as a privately owned company, there is a high correlation between Huawei’s market access in a country’s 5G network with China’s partnership with the country on the BRI. Until spring 2020, China has built infrastructure connectivity in every continent including the Arctic region. Further, Huawei’s market access seems to be heavily financed through China’s state financial institutions. This very well coincides with China’s offer of an own idea about global governance. There is no doubt that BRI starts a worldwide competition about influence, power, and standard settings. These new networks and initiatives show that China is triggering a change towards a new world order.

5 China’s 2030 Vision and 5G as a “Cooperative Winner Takes-All-Market”

China’s 2030 vision, to drive key technological breakthroughs in areas of AI, is only possible with China’s early adoption of 5G infrastructure within the country and globally, which provides the 5G network infrastructure to enable China’s AI industry to develop. According to (Yu—Chap. 5), this development leads to a global economic re-convergence between the Global North and the Global South and will divide the world (East vs. West), rather than integrating it. Supporting Yu’s
standpoint, Tsang and Fuschi (Chap. 6) draw a direct parallel between the trade war between China and the U.S.A. and point to “… a diversification in terms of 5G infrastructure, where the American and the Chinese standard diverge.”

This competition about influence, power and standard setting let many countries ban Huawei and push other telecom providers such as Samsung or Ericsson. It further brought up regional connectivity initiatives, such as Russia’s Eurasian Economic Union in 2014, South Korea’s Eurasian “Silk-Road Express” project, India’s Bay of Bengal Initiative for Multi-Sectoral Technical and Economic Cooperation (BIMSTEC), and the EU’s Euro-Asian Connectivity Mapping Exercise.

But there seems to be a light of liberalism at the end of the technology war. Some authors in this book point out that there is not only a path towards trade war and competition but also a path towards a cooperative solution, because it might well be that the 5G technology turns out to become a “cooperative-winner-takes-all market” and not a “winner-takes-all market.”

For example, Huawei is a member of various industrial standard organizations and proactively participates into standardization activities (Tsang and Futschi—Chap. 6). This indicates that the 5G technology has a chance to become a “cooperative-winner-takes-all market” and there will and must be a collaboration between standard setters in the market. Such a constructive competition and deep interdependences is, further, the key to solve conflicts (Lairson and Shortgen—Chaps. 2 and 3).

Huawei’s transition toward a multinational enterprise, described in Chaps. 10–14, indicates this path of a constructive competition. Huawei follows a strong service-oriented strategy (Hensman and Liu—Chap. 10), where the technology for the partner companies and operators is co-created (including sharing of patents and licenses) by integrating the users and customers, telecommunication providers as well as other businesses in the development of new solutions. This service-orientation is going hand-in-hand with Huawei’s open innovation approach. This includes the building of longer-term joint innovation partnerships and service ecosystems with joint innovation capabilities to wider stakeholders such as governments, universities, and wider industry stakeholders (Chaps. 10, 11, and 12).
6 Conclusion

This discussion shows that this edited volume on Huawei is much more than just a collection of case studies on Huawei. This book greatly contributes to the current debate about the tensions between China and the Western world, about global leadership, geopolitical power, national security, ideological, and economic threats, global connectivity, and last but not least about the shape of the upcoming technological world order. The future will show if Huawei’s global expansion will fundamentally transcend global economic paradigm towards a Chinese digital authoritarianism (Yu—Chap. 5) or if cooperative, user- and partner-centered solutions with digital liberalism will dominate. Probably, the current covid-19 crisis will show that co-operation is the best way to solve world problems.

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