

Dialogue, Debate, and Discussion

COVID-19 and the Increasing Centrality and Power of Platforms in China, the US, and Beyond

Martin Kenney and John Zysman

University of California, Davis, USA

In 2016, we argued that global society had entered the platform economy era (Kenney & Zysman, 2016). At that time, no one thought about whether these platforms would make the socioeconomic system more resilient. What is now obvious is that, over the previous two decades, a massive digital communication, collaboration, and connection infrastructure engineered to be resilient has been built.^[1] The COVID-19 crisis is demonstrating exactly how powerful and resilient the platform giants are, and that they become even clearer winners in terms of adoption and value capture. Even as the platforms show their centrality to society and resilience, the COVID-19 crisis is leading to bankruptcies by a massive number of firms. Despite their differences in social and economic organization, mega-platform firms – whether in China, the US, or elsewhere – have been and continue to be central in countries' responses.

In the face of lockdowns and social distancing, platforms are the intermediaries in social interactions, from chatting and posting on WeChat and Facebook as well as searching for information on Google and Baidu to transactions as on Amazon, Alibaba, and JD.com. Through personal computers, smartphones, and other mobile computing devices, these firms offer software that connects hundreds of millions and even billions of people, forming an extensive and truly global infrastructure as never seen before. By linking institutions and individuals, these platforms enabled the rapid shift online of economic and social activities that have become restricted offline. This made our societies more resilient and dependent.

Online platforms have been a vital part of the response to the pandemic, and their systemic importance has grown. After the shutdowns and ongoing necessity for social distancing end, a new normal will emerge, with different global patterns of consumer activity. The platforms provided services and tools that made the lockdowns tolerable, and the lockdowns accelerated their growth in power and centrality. In effect, by being digital and connecting the mass of citizens, they also became the infrastructure for society's response.^[2] In many respects, platforms are now the

central corporate actors in both China, whose government acted decisively, and the US, which had a less centralized and more chaotic response.

The pandemic led to a contingent migration to online operations by entire industries, including education and white-collar work in a wide variety of other industries. And, this occurred in a matter of weeks. Even though in-person physical contact was reduced to a minimum, the infrastructure – composed of networks, software, mobile devices, and the internet of things – enabled the economy and society to continue to operate. This was possible because platform firms had already formed a digital infrastructure that intermediated all manner of activities. The pandemic will end, but in the new normal what will remain virtual and what will the position of platform firms be?

PLATFORM FIRMS AS VITAL INFRASTRUCTURE

During the pandemic, lockdowns in many countries resulted in the home confinement of large portions of their population. In a bid to slow the spread of the virus, all businesses and retailers closed except those deemed essential, and commerce moved online rapidly. For smaller brick-and-mortar retailers, this movement was catastrophic, showing that many of them were not resilient to such an unexpected event.^[3] As a result, mega-platforms based in the US (Alphabet/Google, Amazon, Apple, Facebook, and Microsoft) and China (Alibaba and Tencent) became key social links. Their increased centrality is reflected in the increase in their stock market valuation even when the overall stock market declined. Recent statistics suggest that the five US mega-platforms comprise about 21% of the value of the S&P 500, a signal of the market perception of their business prospects. For these platforms, the pandemic has been less a crisis than an opportunity to cement their centrality in the global economic system.

The COVID-19 pandemic accelerated the trend toward online commerce that was already underway. The largest US beneficiary in percentage terms was Amazon, which expanded employment by 95,000 between March 31, 2020, when its full- and part-time workforce totaled 840,400, to April 30, 2020, when it had 935,400 employees (Nickelsburg, 2020). Amazon experienced massive growth in revenue as consumers shopped online for all sorts of goods and services. Between January 1, and March 30, 2020, all three of the world's largest online retailers had historic growth. The increase was 22% year on year at Alibaba and 20.7% at JD.com, China's second-largest online retailer. Meanwhile, over the same period, Amazon's sales ballooned by 26%. Given the fact that many retailers with physical shops are going bankrupt, even when normalcy returns, it is likely that Amazon and other online retailers will retain some of their new found customers.

Of course, having a platform does not guarantee success. For example, sectoral platforms such as Airbnb, Booking.com, Didi, Expedia, Lyft, and Uber not only lost market value but also laid off staff in an attempt to survive. Relatively

young platform firms, such as Zoom and Slack, benefited greatly, as they provided the technical means for people to learn, meet, and work remotely, so they experienced enormous usage spikes. In China, Alibaba's Ding Talk did the same.^[4] Because of the prohibition on indoor restaurant service, food delivery firms such as Deliveroo, DoorDash, GrubHub, Uber Eats, and their Chinese counterparts experienced heightened demand, as consumers increasingly ordered food from restaurants. Online grocery sales also boomed, particularly for Amazon and Walmart.com.

The mega-platforms, however, are not just firms; rather, they have become central pillars of the economic infrastructure – whether in terms of WeChat and Alipay 'taxing' purchases (as do credit card firms in the US), Amazon taxing its huge vendor base, or Google using advertisement to levy charges on businesses that want to be found by the public. They offer services to consumers and have capabilities that are ideally suited to surviving a pandemic.

The ways in which platforms have been used in China and the US in response to the COVID epidemic vary, in part because of sociocultural and political differences and in part because of the path-dependent development of the platform economy in the two countries. We illustrate these differences through the lens of two technologies: COVID-19 smartphone apps and mobile payment systems.

SMARTPHONE APPS TO MANAGE COVID-19

One way to understand platform-based responses to COVID-19 is to examine the literature that views software and computers as 'incomplete' products, in that digital artifacts, inherently and by design, are built to be reused and extended (Garud, Jain, & Tuertscher, 2008). Digital objects give other parties the ability to create new objects or services by repurposing older ones (Kallinkos et al. 2013; Zittrain, 2008). This incompleteness and the resources provided by software firms, such as software development kits and application programming interfaces, enable programmers to build new applications rapidly (Henfriddsson, Nandhakumar, Scarbrough, & Panourgias, 2018). For instance, smartphones have many built-in capabilities. They can be located extremely accurately with GPS, and they have Bluetooth capability as well as other technologies, in particular, cameras, which made it trivial to build a smartphone app that could sense and record activities on other phones in their vicinity and constantly transmit that information, thereby improving traceability or to take pictures of conditions for remote diagnosis.

In East Asia, where mobile phones are ubiquitous and sensitivity about privacy is less salient, smartphones were quickly pressed into service to monitor individual compliance with quarantines and lockdown requirements. The apps were used not only to track and trace individuals infected with COVID-19 but also to inform those who may have been exposed to those individuals because of proximity. China has nearly 100% smartphone penetration, and QR codes are

already ubiquitous, so it was trivial to create a software app to provide every individual with a personal scannable QR code that would reveal that person's exposure to others who had potential or actual cases of COVID-19. By thus identifying those who might present an infection threat to others, the QR code enables those who do not present this threat (called certification) to move about with greater latitude and confidence.

Similar smartphone trackers have been developed in the West, but with narrower release and adoption because of privacy concerns; the one jointly designed by Google and Apple has not yet been released. The effectiveness of such trackers, of course, depends on their adoption. In China and Korea, the adoption of contact-tracing and quarantine-monitoring apps was mandatory, and many stores and other venues prohibited access without QR code certification. In contrast, in the US, digital tracing is not being used, and there is no pressure for its adoption, so usage is minimal. As a result, this public health measure is ineffective. In both China and Korea, despite their different sociopolitical systems, smartphone apps were a critical part of the massive organized response to a public health crisis and contributed to social resilience in facing the pandemic. The success of both countries in controlling the spread of infection shows that these applications were a source of resiliency.

MOBILE PAYMENTS

Even before the pandemic, China was already the global leader in mobile payment. As a result, the severe lockdowns drove even more remote service payments online. To illustrate, in 2019, Chinese nonbank online payment platforms (the most important of which are WeChat Pay and AliPay) processed nearly \$41 trillion in payments (Klein 2019). In China and other Asian countries, the already near-universal use of smartphones for transactions increased further during the pandemic and is accelerating the move to a cashless society (Rooney 2020). In the West, the ubiquity of credit cards and a large installed base of traditional banking slowed the adoption of mobile payment systems. If the COVID-19 crisis severely curtails the use of cash (out of fear of infection spread from physical money, for one thing), Chinese payment systems might be adopted in other countries, particularly in developing countries, though, in some developing nations, such as Kenya with its M-pesa system, there are already incumbents.

PLATFORMS AND COVID-19

In both countries, platform firms play a central role in society's response to the pandemic, and, at the same time, the pandemic is increasing that centrality. Platforms and digital technologies that facilitate remote working made it feasible to undertake lockdowns and still keep businesses operating while employees and customers practice social distancing – something that would have been impossible only twenty

years ago. For example, already existing videoconferencing software, such as Cisco's Webex, Zoom, Tencent Meeting, and Google Meeting, enabled schools, businesses, and other organizations to move what would normally have been in-person activity online in very short order. Internet retailers such as Amazon, Alibaba, and JD.com made it possible for all products ordered online to be delivered without face-to-face contact. In Asia, apps are important tools for vital contact tracing and identification of potential COVID-19 carriers that helped to tame the spread of the virus. Netflix, TikTok, Douyin, YouTube, Youku, and various online gaming platforms offer online delivery of entertainment, which eases the boredom of isolation. In these ways, the platforms are important contributors to resilience.

Platforms are vital in the response to the pandemic and, at the same time, reinforce concerns about their increasing power. At no other time in history has such a small group of firms concentrated in a single sector been so powerful – concentration that should decrease resiliency. Yet, because they enable networks and are built on packet-switching networks, they were 'born' resilient. Paradoxically, the new normal might involve increased resilience based on the digital infrastructure owned by these mega-platforms, even if it allows the subordination every other social actor. The COVID-19 pandemic has contributed to the platform firms concentrating more power, wealth, and social influence and thereby contribute to the worrying increase in inequality – in China, the US, and, indeed, the world – even as they play a critical role in response and recovery.

NOTES

- [1] The internet is based on a packet-switching network that was designed to be resilient to a nuclear attack (Baran, 1964).
- [2] Plantin, Lagoze, Edwards, and Sandvig (2018) argue that platforms have become infrastructure and should be studied as such.
- [3] If the platform firms did not exist, the retailers would not have faced as large a challenge. As an aside, unexpected events often lead to mass extinction events for entire classes of organisms, even societies. COVID appears to have been such an event for brick-and-mortar retailers.
- [4] For a discussion of what we call the 'Chinese platform business group model', see Jia and Kenney (2020).

REFERENCES

- Baran, P. 1964. On distributed communications networks. *IEEE Transactions on Communications Systems*, 12(1): 1–9.
- Garud, R., Jain, S., & Tuertscher, P. 2008. Incomplete by design and designing for incompleteness. *Organization Studies*, 29(3): 351–371.
- Henfridsson, O., Nandhakumar, J., Scarbrough, H., & Panourgias, N. S. 2018. Recombination in the open-ended value landscape of digital innovation. *Information and Organization*, 28(2): 89–100.
- Jia, K., & Kenney, M. 2020. Different evolutionary paths: The platform business group model of Chinese platform firms. Unpublished working paper available from authors.
- Kallinikos, J., Aaltonen, A., & Marton, A. 2013. The ambivalent ontology of digital artifacts. *MIS Quarterly*, 37(2): 357–370.
- Kenney, M., & J. Zysman. 2016. The rise of the platform economy. *Issues in Science and Technology*, 32(3): 61–69.

- Klein, A. 2019. Is China's new payment system the future? Brookings Institution (June 16), http://www.brookings.edu/wp-content/uploads/2019/05/ES_20190617_Klein_ChinaPayments.pdf.
- Nickelsburg, M. 2020. Amazon tops 935k employees as of this week, as pandemic-driven hiring spree continues. Geekwire (April 30).
- Plantin, J. C., Lagoze, C., Edwards, P. N., & Sandvig, C. 2018. Infrastructure studies meet platform studies in the age of Google and Facebook. *New Media & Society*, 20(1): 293–310.
- Rooney, K. 2020. Electronic payments look more appealing as people fear cash could spread coronavirus. CNBC (March 16), <https://www.cnbc.com/2020/03/16/electronic-payments-look-more-appealing-as-coronavirus-spreads.html>
- Zittrain, J. 2008. *The future of the internet—and how to stop it*. New Haven: Yale University Press.

Accepted by: Editor-in-Chief Arie Y. Lewin