7 Working the Digital Silk Road: Alibaba's Digital Free Trade Zone in Malaysia

Brett Neilson

A warehouse is a lot like a computer, according to Zhu Lijun, leader of the algorithm team at Cainiao network, the logistics arm of China's e-commerce giant the Alibaba Group. The "common reliance on storage, extraction, and processing lends the two some striking operational and structural parallels," the engineer told an audience at the 2018 Global Smart Logistics Summit in Hangzhou (Alibaba Tech 2018). What are we to make of this comparison, given the increased presence of automated technologies in warehouses and the debate concerning their implications for workers (Delfanti and Frey 2020; Beverungen 2021)? To understand the warehouse as a computer with the spatial qualities of an industrial facility is to bring the question of digital work into settings that are at once technical and physical, software-driven, and primed for hard labor.

This chapter explores how the nexus of computing and warehousing inflects the geopolitical shifts surrounding Alibaba's development of the Digital Free Trade Zone (DFTZ) on the fringes of Kuala Lumpur International Airport (KLIA). Launched in 2017 as part of Alibaba's Electronic World Trade Platform (eWTP), the DFTZ is funded by a state-private partnership involving government-linked corporation Malaysian Airports Holdings Berhad (MAHB), Pos Malaysia, Cainiao, and Lazada, Alibaba's Southeast Asian retail platform. Although the DFTZ is incomplete, presenting difficulties for the study of the labor regimes that it will support, an investigation of the technical, institutional, geopolitical, and economic arrangements surrounding the project sheds light on the conditions that shape digital work in a planetary environment marked by the increasing presence of Chinese commerce. This chapter contends that the modes of power that propel China's digital expansion reduce to neither state prerogatives nor capital operations. Crucial to these modes of power are practices of data extraction, analysis, and intervention that transmute relations among geopolitical strategies, commercial activities, infrastructural installations, and labor force control.

Zhu Lijun's trio of storage, extraction, and processing provocatively, although surely not deliberately, echoes Friedrich Kittler's (1997) well-known typology of media

functions: storage, transmission, and processing. And Lijun's emphasis on extraction in a presentation that drew parallels between warehouses and computers is telling. If transmission describes the channeling of messages as signals and the capacity of media to overcome spatial distances, extraction refers to the removal of value or information from objects or messages undergoing storage, transmission, or processing. That an engineer engaged in warehouse design should be attuned to such dynamics is unsurprising, given that data extraction is central to the business models of e-commerce companies and other digital platforms. Writing with Sandro Mezzadra, I have argued that data extraction opens "new frontiers for the expansion of logics of property" and blurs "borders between processes of governance and dynamics of capitalist valorization" (Mezzadra and Neilson 2017, 195). Exploring these processes of opening and blurring in the operations of platform companies such as Alibaba is a crucial step toward understanding the expanding role of extraction in the global economy.

Platform businesses pursue a mode of "dual value production" by which "the monetary value produced by the service provided is augmented by the use *and* speculative value of the data produced before, during, and after service provision" (van Doorn and Badger 2020, 1476). The e-commerce warehouse, for instance, houses inventory whose storage, processing, and sale generate revenue. At the same time, the warehouse is a site for the extraction of data that not only feeds back into operations but also constitutes an asset class in its own right. This extractive function of the warehouse has become one of its primary economic rationales, situating it front stage of logistical transformations and struggles in which automation is at stake. In her history of US foreign trade zones, Dara Orenstein (2019) argues that the distinction of processing from manufacturing was a primary point of contention in the twentieth-century warehouse.[1] Today, anxieties circulate less around the concern that the warehouse might position itself as a factory and more around the relation among extractive modes of data capture and exploitative modes of labor control.

A large body of publications documenting urban activism and labor struggles against the warehousing practices of Seattle-based e-commerce giant Amazon has emerged in recent years (see, for instance, Ruckus 2016; Boewe and Schulten 2017; Geissler 2018; Apicella and Hildebrandt 2019; Bad Barcode 2019; Flaming and Burns 2019; Graham et al. 2019; Transnational Social Strike Platform 2019; Alimahomed-Wilson and Reese 2020; and Berlin vs. Amazon 2021). Researchers know less about the logistical operations and labor deployment of warehouses run by Alibaba, Amazon's main Chinese rival. Although Amazon closed its domestic e-commerce business in China in 2019, it continues to compete with Alibaba on a global scale, especially in Southeast Asia, where it has entered into an agreement with the Vietnam E-Commerce Association and opened its Prime platform in Singapore.

Alibaba's decision to invest in Malaysia's DFTZ occurs in the context of this mounting competition. The DFTZ is part of an Alibaba initiative known as the eWTP, which has also begun projects in Rwanda, Belgium, and Ethiopia. The eWTP seeks to shape global trade in ways that express the growing influence of Chinese Internet firms in consonance with the Digital Silk Road components of China's Belt and Road Initiative (BRI). As Maximiliano Facundo Vila Seoane (2019, 2) explains, the eWTP "attempts to globalize a China-centered and privately-led global digital trade order to challenge the previous wave of US-led globalization and its infrastructure." The questions that inform my analysis are how much this geopolitical drive shapes operational processes or vice versa, and to what extent, in turn, the nexus of geopolitics and warehouse operations influences labor relations and processes in the DFTZ. This chapter grapples with these issues by interrogating the institutional, economic, and technical factors that converge in the formation of the DFTZ and, in particular, their relevance for understanding transformations to digital work wrought by automation.

In the first section, I turn my attention to the institutional architectures that contribute to the making of the DFTZ, considering the extent to which Alibaba's involvement in this zoning project aligns with the Digital Silk Road components of China's BRI. In particular, I critically assess the claim that Alibaba's expansive activity promotes an "inclusive globalization" that contrasts with the global dominance of US technology firms by offering opportunities for small and medium-sized enterprises (SMEs) to access consumer markets in China. The second section of the chapter examines the labor regimes surrounding the DFTZ and how they are shaped by matters of infrastructure, data management, and automation. My focus is on demonstrating that the digital work practices sustained by the DFTZ cannot be fully explained as the result of the importation of a Chinese labor model but must account for multiple factors, including platform dynamics and Malaysian government digital economy policies. In this way, I dissect the geopolitical, technological, and infrastructural elements of DFTZ operations with a view to showing how the e-commerce warehouse mobilizes multiple forms of power and extraction.

Institutional Architectures of the Digital Free Trade Zone

"Our responsibility today is not to reverse globalization but to improve it" (Ma 2018, para. 7). These words, written by Jack Ma, Alibaba's founder and former executive chairman, capture much of the rhetorical energy surrounding the making of the DFTZ. Ma also pronounces his opposition to the "trade war sparked by the United States" (Ma 2018, para. 15), but the discourses supporting the eWTP advocate a China-centered and privately

led global digital trade regime that supposedly contrasts to the predominantly US-led wave of globalization dating from the 1990s. Vila Seoane (2019, 6) outlines several aspects of this discursive strategy: First, US-led globalization has benefited a few large corporations, whereas the eWTP seeks to offer opportunities to SMEs that have previously experienced difficulty accessing global circuits, an approach that will allegedly assist the economic advancement of women and young people. Second, Ma's own business history illustrates a path to success for these parties. Third, whereas container trade fueled US-led globalization, Alibaba aims to spearhead international trade reliant on the circulation of small packages. Fourth, digital infrastructures can speed up trade and turnover times in ways that demonstrate why entrepreneurial activity should lead state digital strategies. Fifth, the eWTP spreads along the Digital Silk Road and accords with BRI prerogatives, providing opportunities for partner countries to partake in China's economic rise.

Together, these discursive overtures amount to a claim for facilitating an "inclusive globalization" based on collaboration and partnership with SMEs and BRI-participating countries. As Hong Shen (2018, 2685) outlines, such advocacy of inclusive globalization is an important element of China's Digital Silk Road policy vision, alongside cutting industrial overcapacity, enabling corporate China's global expansion, supporting the internationalization of the renminbi, and constructing a China-centered transnational network infrastructure. Alibaba's DFTZ activities are thus discursively positioned to bolster BRI Digital Silk Road ambitions even as their entanglement with trade and investment liberalization opens potential tensions with China's state-centric Internet governance model.

Notwithstanding this emphasis on alignment with the BRI, Alibaba's involvement with the DFTZ stems not so much from the governmental cues of the Chinese state as much as from an invitation from Malaysia's government to assist with the development of infrastructure, skills, and knowledge relevant to e-commerce expansion. In November 2016, the administration of Prime Minister Najib Razak engaged Jack Ma as an advisor, an appointment that catalyzed the official launch of the DFTZ in November 2017. Gomez et al. (2020) classify the DFTZ as a state-private venture, as it involves collaboration among Malaysian government–linked corporation MAHB, formerly government-linked corporation Pos Malaysia, and Alibaba majority–owned companies Lazada and Cainiao. The initiative has three stages.

The first is already operative. It comprises an e-fulfillment hub run by Pos Aviation, a branch of formerly government-linked corporation Pos Malaysia, and Lazada, a Southeast Asian e-commerce platform that Alibaba has owned 83 percent of since 2017 (after an initial acquisition of 51 percent in 2016) and that is operative across Malaysia, Indonesia, the Philippines, Vietnam, Thailand, and Singapore. Significantly, the capital for the

establishment of this e-fulfillment hub, which occupies KLIA's former low-cost-carrier terminal, was provided not by Alibaba's Lazada but by Malaysia's Pos Aviation, reversing "the traditional foreign direct investment (FDI) model where the foreign technology partner usually provides some or all of the capital" (Tham 2018, 3).

In stage two, Cainiao (cofounded by Alibaba in 2013 and currently majority-owned by Alibaba at 63 percent) partnered with MAHB to build an Association of Southeast Asian Nations (ASEAN) e-commerce hub consisting of a cargo terminal, sorting centers, warehouses, and fulfillment centers, which are essential logistics facilities for supporting regional e-commerce activities. Operative at the end of 2020, the ASEAN hub is bankrolled by a joint venture owned at 70 percent by Cainiao and 30 percent by MAHB. The third stage of the DFTZ is an expansion into KLIA Aeropolis,[2] featuring warehouses, a multimodal transport hub, a regional distribution center, and light industry. This phased development positions the DFTZ as a site where infrastructural installations merge with institutional design to facilitate modes of trade and governance that augment capitalist accumulation and shift geopolitical relations in ways that foreground the power of technological systems as much as they do nation-state prerogatives.

As Gomez et al. (2020, 79) explain, the role of the Malaysian enterprises in the DFTZ is primarily "to get land and approval from local authorities, as well as access to state incentives." By contrast, Alibaba provides critical expertise and technical infrastructure, and promises "to create demand for the facilities at the e-commerce hub, via its business and corporate partners" (79). In this sense, Alibaba reaches beyond bricks and mortar investment to position itself as "the key enabler of Malaysia's digitalization strategy" (Vila Seoane 2019, 9). Crucial here is the deployment of Alibaba Cloud data technologies to reduce trade turnover and customs clearance times and connect Malaysian consumers and SMEs with their counterparts in China. Alibaba Cloud established a Kuala Lumpur data center in late 2017 (Cheh 2017). The collaboration of Malaysian financial services corporations Maybank, Public Bank, and CIMB Group with the Alibaba affiliate Ant Group to establish the Alipay mobile payment system in Malaysia is another part of the picture (Chew, Shen, and Ansell 2020). In short, the willingness of Malaysia to open its territory, population, and business environments to the deployment of Alibaba's data ecosystem (see also Naughton [2020] on Alibaba's implementation of its City Brain program in Malaysia) brings with it hopes of bootstrapping its digital economy, not least through the operations of physical e-commerce infrastructures in the DFTZ.

Although SME export opportunities are a key part of Alibaba's eWTP rhetoric and Malaysian government motives, such advancement matters little for a partner like MAHB, whose primary interest lies in increased air cargo and freight traffic. In any case, the extent to which DFTZ operations will benefit Malaysian SMEs remains unknown.

Alibaba clearly seeks to encourage SMEs to list on its platforms, but the company also has interests in using the DFTZ to advance its global trading and logistics businesses, especially in the Southeast Asian region. As many commentators point out (Tham and Kam 2019; Vila Seoane 2019; Gomez et al. 2020), the DFTZ also provides a technologically efficient and low-tariff environment for the import of Chinese goods into Malaysia, creating domestic competition for Malaysian SMEs. Certainly, Malaysian SMEs can benefit from streamlined export processes, but their ability to do so rests on the development of viable products as well as the acquisition of business digitalization skills, which Alibaba and other providers offer only through training that comes at a price. Insofar as access to the Chinese market goes, Malaysian SMEs will have to compete with their Chinese counterparts on Alibaba's domestic e-commerce platforms. Additionally, they will have to negotiate customs procedures for importing goods into China or other countries, which the DFTZ will not harmonize. There are thus significant barriers to the realization of the inclusive globalization vision that animates the eWTP.

Beyond these barriers, Alibaba's inclusive globalization rhetoric obscures further elements of the company's operations, including questions of labor deployment in the DFTZ, data extraction, and the possibility of forcing partner countries into new forms of digital dependency (Vila Seoane 2019). Nonetheless, the discourse of inclusive globalization emerges in a planetary environment in which US technological firms have entrenched dominance. In signaling alignment with the BRI and contrasting its activities with a supposedly exclusive US-led globalization, Alibaba attempts to suggest that its business models and processes are more attentive to the needs and desires of partner nations and enterprises than those of its North American competitors. Unsurprisingly, much criticism of Alibaba's activities in Malaysia echoes more general concerns about the BRI. For instance, US army officer Hugh Harsono (2020, paras. 10 and 11) links the DFTZ not only to considerations of digital dependency but also to anxieties of "debt-trap diplomacy" and scenarios of Chinese geopolitical control of the Strait of Malacca. Even academic studies, which are generally more circumspect than articles penned by military personnel, adopt the concept of "digital empire" to analyze Alibaba's expansionary activities and describe e-commerce in Southeast Asia as a "key battlefield" upon which the company competes with Amazon (e.g., Keane and Yu 2019, 4634).

I do not seek here to disavow this language of imperialism and conflict, which registers the geopolitical dimensions of the DFTZ and echoes more sophisticated analyses of "data colonialism" (Couldry and Mejias 2019). Rather, the goal is to understand how the extractive dynamics of the digital economy intersect its institutional and technological aspects. With respect to institutional conditions of e-commerce in Southeast Asia, the international business literature is revealing. Writing with Xinyi Wu, global

value chain scholar Gary Gereffi positions the Internet governance environments in China and the US as key to understanding the differing business models and internationalization strategies of Alibaba and Amazon (Wu and Gereffi 2018). Noting that both companies have expanded their businesses beyond e-commerce, these authors challenge the notion that digital economy firms are asset light. In particular, they note Amazon's tendency toward vertical integration of its business operations and contrast its ownership of assets along its supply chain (from inventory to warehouses, logistical networks, data centers, computing applications, and cloud computing services) to Alibaba's preference to partner with local companies in its internationalization efforts. While Amazon's asset-heavy supply chain introduces last-mile delivery problems in environments such as Southeast Asia, Alibaba has to negotiate difficulties introduced by China's tight Internet governance model. At stake is not only the prospect that Chinese government requests to access data or information held by the company might damage its reputation or services—although Alibaba warns about this possibility in its annual reports—but also the challenges of operating beyond a domestic environment in which state restrictions on foreign investment in the e-commerce sector have contributed to the firm's growth.

Although the Alibaba Group has been listed on the New York Stock Exchange since 2014 and the company's board is highly internationally networked (De Graaff 2020), the firm benefits from Chinese state support in the form of government-generated rents and strategic public policies (Gomez et al. 2020, 4). Lin Zhang (2020) demonstrates how Alibaba's relationship with the state has evolved over time. For her, the role of Chinese petty capitalist entrepreneurs who utilized Alibaba's domestic e-commerce platforms was crucial in transforming the company's relationship with the state, which became more symbiotic following the 2008 global financial crisis. Because the firm was able to marry platform dynamics with small capitalist activity and venture capital investment in ways that rivalled the state's historical monopoly over "'pillar industries' and the construction and management of infrastructures," the "post-2008 Chinese state reacted by working more closely with Alibaba in promoting its own economic and social reform agenda" (Zhang 2020, 131). However, in the case of Alibaba, as in that of other large Chinese privately owned enterprises, it is difficult to ascertain exactly how party-state-business relationships resolve themselves. Consequently, while Alibaba develops its international business strategies within broad guidelines set by the state, the forms of power it exercises through expansion activities such as those realized in the DFTZ cannot be immediately equated with the expression of Chinese party-state sovereign power.

At stake is rather a technologically mediated form of power that combines digital platform operations, data extraction, labor exploitation, state dynamics, and spatial

strategies in ways that both accentuate and diminish the national denomination of capital. Again, it is significant that Alibaba initiated its involvement in the DFTZ at Malaysia's behest. The company continues to work in partnership with Malaysian privately owned and government-linked corporations. Alibaba plans and operates in the DFTZ with the assistance of multiple Malaysian government agencies, including the Malaysian Digital Economy Corporation (MDEC), the Ministry of Communications and Multimedia, the Ministry of Transport, the Ministry of International Trade and Industry, and the Malaysian Investment Development Authority. The DFTZ is as much a product of Malaysia's National Policy on Industry 4.0 (Industry4WRD)—which aims to transform the nation's economy through the deployment of automation and data technologies—as it is of China's Digital Silk Road initiative.

Certainly, the zoning strategies involved resonate heavily with long-established spatial economic practices in Malaysia and other Southeast Asian countries that Aihwa Ong has for over two decades analyzed by deploying the concept of *graduated sovereignty*. For Ong (1999, 217), graduated sovereignty describes a situation "whereby even as the state maintains control over its territory, it is also willing in some cases to let corporate entities set the terms for constituting and regulating some domains." At stake are "de facto or practical adjustments and compromises in national sovereignty" that mobilize "foreign investment, technology transfers, and international expertise to specific zones" (Ong 2006, 78). That the DFTZ opens a space for investments, technologies, and expertise that travel from Alibaba's headquarters in China's Zhejiang Province contrasts with Ong's later assessment of Kuala Lumpur as seeming like "a cultural and economic extension of California" (2006, 82). In investigating the labor regimes that emerge in this zone, it is also necessary to account for how the computational, commercial, and discursive workings of platforms have transformed the digital economy in the past 15 years. Doing so, however, requires an engagement with questions of infrastructure, data management, and automation that extends beyond an analysis of the DFTZ's institutional architectures.

Working the Digital Free Trade Zone

There at least four groups of workers associated with the DFTZ. Gomez et al. (2020, 45) report that the Cainiao-MAHB joint venture will support a division of labor "estimated to be 37% of skilled workers (operations manager, facilities technicians, logistics planner, etc.) and 52% semi-skilled (equipment operators, assemblers, service and sales workers, etc.)." To these two groups, we must add the petty entrepreneurs whose SME activities the eWTP will supposedly enable. A further group of workers provides technical support for Alibaba's platform and logistics operations from China. Of these

groups, the last two are the easiest on which to obtain information about labor conditions and processes. There are multiple challenges in understanding the labor regimes that apply for skilled and semiskilled workers who staff and manage DFTZ facilities. For a start, the ASEAN e-commerce hub to be operated by Cainiao and MAHB has only recently begun operations (Alibaba Group 2020a). Although some knowledge can be gleaned from recruitment advertisements, conjecture based on Cainiao's warehousing and logistics activities in other locations is necessary. The Lazada–Pos Aviation venture deploys sophisticated handling systems such as automated guided vehicles (AGVs) but also maintains a flexible labor force to smooth out operations during peak periods. I will discuss these employee groups, and the techniques and technologies that shape the labor regimes under which they work, in this order: Chinese tech workers, Malaysian petty entrepreneurs, and skilled and semiskilled workers in DFTZ facilities.

If the warehousing facilities in the DFTZ function like computers, as Zhu Lijun suggests (Alibaba Tech 2018), then these computers are programmed at a place called Xixi. Located in the Chinese city of Hangzhou, Xixi is Alibaba's main headquarters, where over 20,000 of its 100,000 employees work. A technology park surrounded by start-up enterprises, the campus boasts features such as facial recognition technologies, autonomous vehicles, cashless payment for food, and a hotel with robot room service delivery (Saiidi 2019). Here, Alibaba maintains its corporate office as well as the headquarters of its main e-commerce brands, including Taobao, AliExpress, Tmall, and Tmall Global, the platform on which Malaysian SMEs will be able to market their products to Chinese consumers. Cainiao and Ant Group also locate their main offices at the Xixi campus. In December 2019, Alibaba established the secretariat of the eWTP in the adjacent Xixi Wetlands Park to manage the trade platform's "daily operations, international cooperation, training and exchange programs, achievement displays, and the release of rules and models" (eWTP 2019, para. 1). As the March 2019 visit to the Alibaba campus by a 30-member Malaysian delegation from 19 government departments and agencies (Digital News Asia 2019) attests, Xixi is a site intensely connected to the administration and operations of the DFTZ and, in particular, to the control of flows of information and finance associated with it.

Alibaba promotes Xixi, like its other China-based offices, as a dynamic, youthful, and future-oriented workplace. However, the campus has also gained a reputation as a site of overtime work culture, stagnant salary and benefit growth, and health damage caused by demanding management. Extended work hours without overtime pay are a feature of tech industries worldwide, but the prominence of such "hustle culture" in the Chinese tech sector became conspicuous in early 2019 when workers began to rebel through a social media campaign (Li 2019). The 996.ICU movement started in March 2019 with an anonymous upload to the GitHub code-sharing platform complaining

that the labor expectations of Chinese tech entrepreneurs risked sending employees to the intensive care unit (ICU). The number 996 refers to 12-hour days, 9:00 a.m. to 9:00 p.m., six days a week (see also chapter 12). The movement gathered pace on social media, attracting letters of solidarity from US tech workers and even denouncements of labor law violation in Chinese state media (Xingfa 2019). Many stories about the protest led with images of the Xixi campus (see, for example, Lin and Zhong 2019; Yang 2019). Alibaba's founder, Jack Ma, exacerbated the situation by declaring: "To be able to work 996 is a huge bliss. If you want to join Alibaba, you need to be prepared to work 12 hours a day, otherwise why even bother joining?" (Chen 2019).

As Xiaotan Li (2019) explains, the 996.ICU labor protest emerged when layoffs and hiring freezes stirred dissatisfaction among college-educated tech workers who could no longer hold on to the "big firm dream" that sustained their commitment to long work hours. According to Kevin Lin (2020, 52), the 996.ICU campaign signaled "the potential of a new type of labor organizing in China." On the one hand, the movement was able to escape state repression due to its decentralized networked operation. The protesters also succeeded in publicly damaging the reputation of large tech companies. On the other hand, the campaign never involved stoppages and was ultimately unable to force workplace changes. With respect to Alibaba's DFTZ activities, the 996.ICU protest shows how the informational labor that supports the development and operation of the platforms and logistical routines essential to the zone's functioning rests in the extraction of time and life from young Chinese tech workers. The question is whether this work culture extends to Malaysia and will somehow be imported into the zone with Alibaba's infrastructure investments and associated practices of technology transfer.

In a blog post, a young entrepreneur called Jason Low, who participated in Alibaba's Netpreneur Training program, an eWTP initiative that sends Malaysian business practitioners to Hangzhou for training, reports on his interactions with Alibaba tech workers. Low (2019, para. 10) emphasizes that Alibaba "has never enforced the 996-work schedule to any of its employees. Most of their staff's [sic] who work a 996 schedule, are people who believe that they have a mission to fulfill, therefore putting their best into achieving results for the company, and their clients." He goes on to state that his own work hours "are within the vicinity of 166. 16 Hours a Day, 6 Days a Week" (para. 13) and to suggest that those who hate their 996 jobs ought to quit. Low's account presents only a single opinion, but it does register the extent to which a culture of work sacrifice can take grip within the second group of workers I have mentioned, the Malaysian petty entrepreneurs who seek to sell products into the Chinese market using the eWTP. I have already outlined the institutional and technical hurdles faced by these entrepreneurs in comparison to their Chinese counterparts using the DFTZ facilities to import goods into

Malaysia. However, Alibaba has an established record of successfully recruiting small entrepreneurs as sellers on its e-commerce platforms and extracting the surplus value generated by these subjects' labor through datafication and selection mechanisms.

Zhang (2020, 130) details how Alibaba's growth into a monopoly platform in China was embedded "in China's petty capitalist tradition and the changing political economic configuration of the contemporary Chinese society." Although the company adopted strategies similar to those of large Western platforms to "encourage user participation, drive commodification, achieve datafication, and promote market expansion," the grafting of these platform mechanisms onto Chinese petty capitalist labor practices and tensions with state-tributary modes of production was crucial to its expansion. Aside from constructing "a network of governmental, media, and scholarly agents to motivate user participation and canvass political support," Alibaba attracted sellers to its platforms by picking model entrepreneurs to create "success stories" (see chapter 2). This frequently involved channeling traffic to bump up product listing rankings for chosen entrepreneurs, offering them opportunities to participate in promotional activities, and spreading media publicity about their "success" for others to emulate. A similar strategy can be observed in building the eWTP. For instance, a promotional video (Alibaba Group 2020b) touts the story of DESA, an initiative designed by alumni of Alibaba's Netpreneur Training Program to market fresh produce grown by Rwandan rural communities to Chinese consumers. MDEC, one of the main governmental backers of the DFTZ, is also active in promoting such "success stories," featuring on a YouTube playlist (MDEC 2020) over 60 interviews with petty e-commerce entrepreneurs selling goods as diverse as cosmetics, hardware, traditional medicines, detergents, and baby products. In line with the eWTP rhetoric of inclusive globalization, many of these stories feature the upward business activity of women and young people.

These promotional efforts ignore the fact that many businesses that market goods on e-commerce platforms are run by "individual or households who employ a small number of workers but who are themselves involved in the labor process," according to Alan and Jean Smart's 2005 book *Petty Capitalists and Globalization* (quoted in Zhang 2020). Notwithstanding the possibility that petty capitalist entrepreneurs may exploit workers within their business units, they are themselves exploited by the platform through their participation in the labor process. That platform companies extract rent for each transaction they orchestrate is a known feature of their business models. In the case of Alibaba, Zhang (2020, 131) explains that "unequal profit-driven and algorithm-mediated distribution of resources" as well as the "deployment of user data and manipulation of rankings" have swung in favor of bigger sellers and corporate expansion since the company gained monopoly status in the Chinese market. The anti-Taobao

movement of 2011, which involved frustrated small-sized Chinese entrepreneurs placing a large number of orders with big sellers, leaving negative comments, and refusing to finalize payments, registers the extent of dissatisfaction that can develop. The question is whether similar discontent will emerge among Malaysian petty entrepreneurs who encounter difficulties selling into the Chinese market and face increasing competition from Chinese SMEs using the eWTP to import products into Malaysia. As Vila Seoane (2019, 3) writes, "It is unclear to what extent the eWTP will really be inclusive or, instead, just another way of enlarging social differences in favor of transnational capital."

The implications of this situation for workers on the ground in the DFTZ is another matter. In the case of the Lazada–Pos Aviation venture, there is clear investment from management in promoting their DFTZ facility as a highly automated environment. A site visit report from the Selangor Information Technology and E-Commerce Council (Kong 2017), currently Sidec (Selangor Information Technology & Digital Economy Corporation), and an MDEC (2018) promotional video document the presence of AGVs in the distribution center at KLIA Air Cargo Terminal 1. Manufactured by Quicktron in Shanghai, these AGVs are identical to those deployed by Cainiao in mainland Chinese warehouses and bear a strong resemblance to the robotic vehicles, originally developed by Kiva Systems (now Amazon Robotics), used in many Amazon fulfillment centers. Equipped with sensors that allow them to communicate with each other as well as with sensors embedded in the warehouse floor, the AGVs are able to lift shelves and drive them to where a product is needed. The system reputedly increases productivity by eliminating the long march of workers known as pickers to retrieve items from shelves and by mobilizing artificial intelligence to remap and optimize the use of warehouse space.

However, despite the prevalence of this technology in promotional materials associated with the Lazada–Pos Aviation facility, there were only 10 AGVs deployed at the site during the pilot phase in 2017 (Kong 2017, para. 21), compared, for instance, with the presence of 700 such vehicles in the smart warehouse at Cainiao's Wuxi Future Park in China's Jiangsu Province (Laubscher 2020, para. 12). Pos Aviation's website features images that attest the continued use of more traditional warehouse picking and packing labor at the facility (Pos Aviation 2017a). The same website provides visual evidence of workers undertaking heavy handling activities such as handover, break bulk, and sorting (Pos Aviation 2017b), which makes sense given that the installation doubles as an air cargo terminal. All of this points to the maintenance of a labor-intensive work regime at KLIA Air Cargo Terminal 1 despite management's emphasis on the introduction of more efficient border clearance and fulfillment processes. Employee reviews for Lazada on websites such as Indeed (2020) and Jobstreet (2020) present a mixed picture,

with warehouse workers often commenting positively on the company's dynamic ethos but complaining about the fast pace, steep key performance indicators (KPIs), long hours, inability to take breaks, lack of benefits, and casual hiring practices. An advertisement for part-time pickers and packers at Lazada placed on the website Profdir Malaysia (2019) by the labor agency Manpower Group Solutions details 12-hour shifts at a rate of MYR 100 (approximately US$25) per day. Another issue raised by workers is "pressure with foreigners" (Indeed 2017), a comment that confirms reports that "Lazada executives from China have often been quick to impose what has worked for the mainland Chinese market with little regard to local needs or sensitivities in Southeast Asia's fragmented markets" (Zhai and Potkin 2020, para. 23).

A company report for Pos Malaysia by AmInvestment Bank (2019) details slow progress in the DFTZ. According to this market analysis, since "commencing operations in October 2017, Pos shared that the utilization of Kuala Lumpur International Airport Air Cargo Terminal 1 by industry players is still below expectations, with a view that in order for the project to take off, there is a need for other countries in the region to set up similar distribution centers to facilitate cross-border e-commerce trade" (para. 9). It is thus unsurprising that the opening of the Cainiao MAHB hub is likely to pose further challenges for Lazada's logistical operations and employment regimes. At this stage, it is difficult to assess to what extent the promise to make "constant improvements" to supply chain services through "automation, robotics and artificial intelligence and big data" (Alibaba Group 2020a, para. 6) will be fulfilled in the Cainiao facility. Nonetheless, informed speculation is possible since Cainiao utilizes the same warehouse management system across the many installations it runs, often in partnership with third-party operators. Such conjecture is risky, given that labor process studies have shown that production regimes can vary significantly across warehouses run by the same company (Dörflinger, Pulignano, and Vallas 2020). In the case of Cainiao, however, the commitment of software engineers such as the previously mentioned Zhu Lijun (see Gu 2017) to work on the development of particular algorithmic routines in warehouse management allows insight into the modality of worker interactions with automated technologies that are liable to play out in the DFTZ.

One such routine draws on research concerning the bin packing problem—an algorithmic conundrum with many logistical applications, from truck loading to choosing the most efficiently sized boxes into which to pack items being shipped from a warehouse. A variation of the so-called P versus NP problem, an unsolved dilemma in computer science, bin-stacking algorithms have been a focus of Cainiao engineers and their collaborators in recent years.[3] Interestingly, the approach these researchers take is not one of deploying automation to replace human workers or to trace and track

them in ways that force their compliance with KPIs and standard operating procedures. Rather, in order to assign the best-sized boxes for item packing, this research seeks to generate knowledge about human deviation and to use the resulting data to optimize algorithmic prescriptions.

It is well known that warehouse workers may deviate from algorithmically assigned work tasks to realize efficiencies and take advantage of information that the algorithmic design does not incorporate (see, for instance, Loewen 2010, 709–710). Less explored are deviations that derive from a user's aversion, inability, or discretion when it comes to implementing algorithmic prescriptions rather than from a lack of objective information in the algorithm. Jiankun Sun et al. (2020) conducted an experiment for two weeks across four Cainiao warehouses to gather data about such deviations, particularly with regard to workers' decisions to use larger boxes than those prescribed by the standard Alibaba bin-packing algorithm to pack items. They then "proposed a method to revise the algorithm design by building a machine learning model to predict humans' nonconforming behavior and using the predictions to adjust the algorithmic prescriptions" (30). Such an exercise in "human-centric" automation definitely belongs to the class of algorithmic adjustment that draws on data generated by labor processes to feed back into and "improve" operations. Although this kind of fine tuning is by no means unique to Cainiao warehouses, it does give some insight into the kind of algorithmic regulation likely to take shape alongside other labor control processes linked to hiring, surveillance, and employment conditions in the DFTZ. In particular, it suggests a mode of automation that accommodates and exploits human deviations by funneling them into efficiency-building operations rather than allowing them to assume the form of sabotage, stoppage, or subversion.

Aside from the hype about AGVs and other technologies, the DFTZ presents a scenario where labor exploitation and data extraction link to long-standing warehouse employment practices that have undergone transformation with the rise of e-commerce. The question of how these practices articulate to the rhetoric of "inclusive globalization" surrounding the eWTP and China's Digital Silk Road initiative remains open. The result is rather a peculiar interaction among globally diffused technology company work cultures, petty capitalist labor regimes, the expansionary drive of private Chinese digital enterprise in its complex interactions with the party-state, Malaysian government efforts to adapt to the demands and opportunities of capital accumulation through zoning strategies and digital economy initiatives, and the platformization of logistical processes through modes of data extraction that not only feed back into operations but also fuel new horizons of capitalist speculation and valorization. Taken together, these factors make the DFTZ a unique zoning experiment that articulates to the other

global sites of the eWTP but also remains embedded in local business practices and labor arrangements.

Conclusion

In November 2020, the Chinese government blocked the initial public offering (IPO) of Ant Group, a financial services company specializing in digital payment systems and majority-owned by Jack Ma. Widely seen as evidence of the Chinese state cracking down on private technology firms, the IPO suspension can more appropriately be understood as a peculiarly Chinese reaction to the more global governmental dilemma of whether fintech enterprises should be regulated as financial companies or as technology companies (Broby 2020). Viewed in the longer run of platform-state relations, the cancellation is another move in a complex series of moves that have led both to "deepened collaboration between Alibaba and the various levels of government in China" and to a "more interventionist stance" from the central government (Zhang 2020, 124). To some extent, the blockage of the IPO marks a limit at which the institutional apparatus of the state encounters the infrastructural power exercised by technology firms. However, to understand this regulatory intervention as a definitive assertion of the former over the latter is perhaps to overinvest in the indisputability of centralized control exerted by the Chinese Communist Party and to downplay the entanglement of institutional and infrastructural power in the operations of both state agencies and platform companies. The efforts of Alibaba to promote its eWTP activities in Malaysia and elsewhere as part of a program of inclusive globalization that reflects Digital Silk Road priorities also partake in these dynamics. There are dangers in seeing the emergence of the DFTZ either as the expression of Chinese grand strategy driven through the BRI or as the result of freewheeling technology company platformization that draws opportunistically on state rhetoric to justify its expansionism. Most glaringly, these perspectives fail to account for Malaysian government and commercial interests that have been pivotal in establishing the DFTZ.

That a logistics park and warehousing facility should become so crucial to digital trade developments and regional business dynamics registers the importance of infrastructures of circulation and storage to contemporary modes of capitalist expansion. The emergence of the DFTZ within the growing competition between Chinese and US firms for Southeast Asian e-commerce markets suggests that its economic purposes cannot be separated from geopolitical imperatives. However, it is a long stretch to join these geopolitical forces, which manifest in narratives of China-US technological decoupling, to operational conditions—as if one mandated the other. Ultimately, the presence of different business models and institutional architectures may not shape

operations in the DFTZ in ways that have determinate outcomes for labor regimes. The question of infrastructural and technological forms becomes more relevant for charting the variations of digital work that accompany the spread of Chinese digital commerce. If an analytical emphasis on extraction highlights the data economies and labor dynamics that accompany the transformation of storage and processing in the warehousing industries, attention to geopolitics suggests the difficulty of separating institutional from infrastructural dynamics in the making of planetary markets. It is at this intersection of social form and technological materiality that the logistical installations appearing in the DFTZ are likely to shift digital work practices in ways unforeseeable by familiar scripts of national regulation and international rivalry.

Notes

1. Orenstein (2019, 169–177) recounts how the US Foreign Trade Zones Act, from the time of its implementation in 1934 to its amendment in 1950, imposed a ban on manufacturing. This prohibition meant that warehouse operators in such zones continually pressed the limits of what counted as manufacturing as opposed to processing, handling, manipulation, refinement, and so forth.

2. See http://www.kliaaeropolis.com/.

3. Hardesty (2009) offers a simple explanation of the P versus NP problem as being about the most efficient way to execute a given algorithm relative to the number of elements the algorithm has to manipulate.

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