Global Policy

SPECIAL ISSUE CTRL + Power: The Politics of Digital Authoritarianism

RESEARCH ARTICLE OPEN ACCESS

Unpacking China's Digital Ascent in the Global South: The Case of Huawei in North Africa

Tin Hinane El Kadi

Department of International Development, University of Oxford, Oxford, UK

Correspondence: Tin Hinane El Kadi (tin.elkadi@qeh.ox.ac.uk)

Received: 14 March 2025 | **Revised:** 19 September 2025 | **Accepted:** 22 September 2025

Funding: This study was financially supported by Fondazione Compagnia di San Paolo.

Keywords: Chinese ICT firms | digital development | digital silk road | global south | Huawei | North Africa

ABSTRACT

Despite frequent concerns in Western policy and media circles about the risks of using Chinese telecommunications suppliers, firms like Huawei have encountered little resistance from governments or citizens in the Global South. Empirical research explaining this acceptance remains limited. This paper helps fill that gap by examining Huawei's localisation strategy in Algeria and Egypt. Based on 107 interviews conducted between 2021 and 2024, the study shows that Huawei did not impose a one-size-fits-all model. Instead, it adapted to local development priorities, aligning its operations with national goals related to digital infrastructure and knowledge transfer. The company demonstrated flexibility in responding to evolving policy agendas and economic strategies in both countries. While engaging in activities that appear developmental, such as training programmes and infrastructure investment, Huawei has retained control over key technologies to protect its market position. This dual approach has helped the company build political goodwill in Algiers and Cairo and position itself as a central player in both countries' digital ecosystems. The paper concludes with policy recommendations for both developing and Western countries on how to engage with Chinese tech actors more effectively.

1 | Introduction: Framing China's Digital Expansion

China's global digital influence has expanded rapidly. Since the early 2000s, Chinese firms have extended their reach internationally, gaining market share by providing the essential infrastructure that supports millions of internet users across developing nations. Pundits have suggested that Huawei is responsible for 70% of Africa's 4G network (Mackinnon 2019). Chinese ICT companies have been further bolstered by the Chinese state through the Digital Silk Road (DSR)—the digital arm of Beijing's Belt and Road Initiative (BRI)—which since 2015 has supported their global expansion. The DSR aims to deliver advanced digital infrastructure to BRI countries, including fibre optic cables, data centres, 4G and 5G networks, e-commerce platforms, AI-powered applications, cloud services, smart cities, and satellite navigation systems (Shen 2017). Since its launch, the initiative has spurred a variety of government announcements, public and private funding mechanisms, and numerous business partnerships.

The globalisation of China's digital industry has become a highly popular and contentious topic with mushrooming media reports, think tank publications and conferences singling out Chinese digital capital as 'problematic'. Existing writings on China's global digital expansion have predominantly focused on the potential threat this could pose to the US' hegemony over the Internet (Cheney 2019; Hillman 2021). Many observers, particularly those in the United States, presume that an all-powerful Chinese digital and ICT industrial complex smoothly grafts its uniquely 'Chinese' internet model onto developing nations and convinces them to adopt it by financing such endeavours with

Policy implications

- Diversify the digital stack: developing countries should avoid over-reliance on a single provider by sourcing hardware and software from multiple suppliers. A diversified ecosystem reduces dependency, strengthens resilience, and preserves national control over critical infrastructure.
- Build indigenous capabilities: governments should invest in skills training, research, and support for local firms to foster domestic innovation. Stronger national capacities reduce long-term reliance on foreign actors and ensure that digital infrastructure serves local development priorities.
- Advance regional integration: developing countries and smaller economies in particular can benefit from coordinated regional strategies. By pooling demand and harmonising regulations, countries can increase bargaining power with major technology providers and secure more inclusive outcomes from global initiatives such as the Digital Silk Road.
- Reframe Western engagement: external partners should prioritise the infrastructure, financing, and training needs of developing countries rather than focusing on countering China. Grounding initiatives in local priorities will build trust and deliver greater developmental impact.

Chinese loans. This narrative emphasises that the Internet is likely to become less open and more authoritarian with the prevalence of Chinese hardware and software, or as put by Hilary Clinton: 'With the spread of these [Chinese] restrictive practices, a new information curtain is descending across much of the world'. (Washington Post 2010). In this view, the global expansion of China's internet industry is likely to lead to the spread of a model that commentators have dubbed 'Internet authoritarianism', 'digital imperialism', or even more vaguely 'digital Leninism' (Chalk 2019; Chen 2021).

Overblown claims about Chinese digital technologies represent the most recent layer to the already substantial body of alarmist writings on China's presence in the global South, especially in Africa. A vast empirically grounded literature has dispelled many myths about China in Africa (Brautigam 2009; Alden and Large 2015; Lee 2018). Concerns about Chinese influence stem from incorrectly inflating the scale of Chinese loans, such as when journalists mistakenly interchange 'US dollar' and 'Chinese yuan' or make claims of Chinese land acquisitions and the use of prisoners in African operations on unfounded rumours. In reaction to the perceived scale of Chinese investment, a highly politicised debate has arisen between predominantly Western narratives of Chinese neo-colonial exploitation and disregard for human rights, and Beijing's assertion that it is fostering South–South collaboration without the hegemonic ambitions or World Bank-style conditionalities of Western donors and investors.

In recent years, the spectre of a 'Chinese scramble' has increasingly centred on China's globalising ICT sector. Mainstream accounts often depict the Digital Silk Road and related Chinese state actions as a geopolitical strategy to expand Chinese influence—by any means necessary—while promoting authoritarianism, undermining democracy, and diminishing US global power (Cheney 2019; Hillman 2021; Polyakova and Meserole 2019). This perspective significantly downplays the notion of 'agency'. It casts China as an all-powerful actor, focused on charming or coercing its partners to adopt its model—or even 'corrupting' them along the way—as it implements its technologies and strategies. In contrast, it portrays counterparts in developing countries as passive agents either unable or unwilling to resist such influence. This analytical weakness stems from the limited extent of empirical research in countries in which digital China is engaged.

This paper seeks to examine why and how China's ICT industry has thrived across the Global South. To do so, it focuses on the case study of Huawei's localisation in two North African countries: Algeria and Egypt. With its strategic location, connecting Asia, Africa, and Europe through the Suez Canal, North Africa holds a central position in China's BRI (Abdel Ghafar and Jacobs 2019). Over the past decade, the region has become host to several hallmark DSR infrastructure projects, including 5G networks, data centres, and smart cities built by Chinese ICT original equipment manufacturers (OEMs) (Kurlantzick 2020). While the 'digital industry' comprises various sub-sectors, this study specifically targets ICT original equipment manufacturers (OEMs), primarily Huawei, which specialises in the provision of backbone ICT infrastructure from fibre optic cables and data centres to routers and switches.

Drawing on over 107 fieldwork interviews conducted between 2021 and 2024, the paper finds that far from imposing a digital blueprint on host countries, the Chinese tech giant's localisation strategy relied on accommodating local development priorities. Huawei responded favourably to Algeria's and Egypt's efforts to leverage foreign companies for digital infrastructure development and knowledge transfers. It also showed adaptability to the changing policy agendas and economic visions of the host countries. The firm has sought to balance engaging in seemingly developmental activities that support local economies in their digital transformations with keeping ultimate control of its technological premium to ensure its dominance in the marketplace. This has allowed the firm to strengthen its political capital in both Algiers and Cairo and play a key role in shaping the digital ecosystems of the two countries.

Understanding why and how Chinese tech firms succeed in developing countries is important for several reasons. For developing country governments, as Chinese ICT firms take on an increasingly prominent role in constructing backbone infrastructure, understanding the associated developmental opportunities and risks is crucial for shaping future digital transitions. For Western countries, amidst widespread concerns voiced regarding the presumed threat associated with Chinese technologies—particularly Huawei—gaining an empirical grasp of what drives the company's popularity across the Global South is crucial. Such insights are essential for shaping policy alternatives to initiatives like the Belt and Road Initiative or the Digital Silk Road, ensuring that the digital development priorities of low- and middle-income countries are central to any proposed strategies.

After this introduction, this article is structured as follows. First, it offers an overview of the existing literature on China's digital expansion in the global South, identifying gaps and weaknesses. Second, the paper briefly discusses the methodology used in the paper. Third, it presents the empirical findings, showing the various ways in which Huawei's successful globalisation/localisation relied on the accommodation of local government development impulses, local demands for infrastructure and training, and knowledge transfer, manufacturing, and R&D. The fourth section concludes by discussing the findings and suggesting policy recommendations for both developing and rich countries.

2 | Between Hype and Alarmism: The Debate on China's Digital Reach

The emerging literature on China's digital presence in the global South has tended to be either rose-tinted or pessimistic. A sample of the former perspective is illustrated in a series of papers on the Digital Silk Road published in China International Studies, a journal sponsored by China's Ministry of Foreign Affairs (Lou 2019). Although analytical, these papers portray the DSR in an exclusively positive light.

Similarly, proponents of the BRI and its digital component have suggested that the initiative will reduce the marginalisation and underdevelopment of participating countries. In an article published in Red Flag Manuscript, the influential journal edited by the Central Committee of the Chinese Communist Party (CCCP), Wang Yiwei historicises globalisation into three major periods: Globalisation 1.0 led by the ancient Silk Road, globalisation 2.0 dominated by Western colonial and imperialist powers, and China's BRI which opens up the third period of 'inclusive globalisation', with digital infrastructure such as smart cities and fibre optic cables improving the connectivity of poorer nations to the global economy through a more inclusive global trade and investment system (Wang 2016). The development of such infrastructure is believed to remove institutional and technical bottlenecks (Liu and Dunford 2016). Using quantitative methods, Ho et al. (2023) find that participating economies in the BRI and DSR experience a significant rise in ICT development, measured with internet penetration, mobile penetration, broadband, and telephone subscriptions. The optimistic view is largely associated with authors based in China.

In contrast, accounts from US or Western think tanks often depict the DSR as a geopolitical strategy aimed at expanding Chinese power—by any means necessary—while promoting authoritarianism, undermining democratic values, and reducing US global influence (e.g., Cheney 2019; Polyakova and Meserole 2019). A notable perspective in this vein is captured by Hillman 2021 in *The Digital Silk Road*, *China's Quest to Wire the World and Win the Future*. In this book, the author pictures a monolithic 'China Inc.' carrying out a master plan to conquer the global Internet (Hillman 2021). According to the author, Beijing is primarily concerned with the reproduction of its authoritarian Internet model abroad, a model that it manages to transplant without much local resistance. Another example of this argument is in Cheney (2019), who argues that the DSR is used by China 'to increase geoeconomic competition and spread political illiberalism' including 'the deceptive use of information for hostile purposes' such as 'disinformation campaigns using big data' (Cheney 2019).[1]

While this trend in the literature uncovers important features of China's expansion and its implications, it tends to marginalise the agency of host countries and their capacity to shape the impacts of China's presence. Beyond minimising local agency, several studies suffer from what researchers have described as the problem of 'Chinese Exceptionalism' or 'methodological nationalism' (Oya and Schaefer 2019), which treats China as a homogenous entity with a clearly defined project and assumes intrinsic characteristics that apply to all Chinese actors. Yet, a growing body of empirical research indicates the existence of wide variations between companies' contributions to employment, knowledge transfer, and structural upgrading depending on local context, sectors, and ownership type (public vs. private), among others (Brautigam 2009; Gonzalez-Vicente 2012; Alden and Large 2015; Lee 2018; Calabrese and Tang 2020).

A deeper empirical examination of China's digital presence outside its borders indicates a different story from the dominant account. Iginio Gagliardone's 2019 book *China-Africa and the future of the Internet* compares how Chinese ICT actors and ideas interacted with two democracies—Kenya and Ghana—and two autocracies—Ethiopia and Rwanda. It reveals that China's intervention in Africa's information societies has been driven by the idiosyncratic preferences of different African states rather than those of Beijing. Gagliardone shows that Chinese ICT firms have worked on promoting both opened and closed visions of the internet depending on the political economy of the host country (Gagliardone 2019). The findings pose a difficult test to those who claim that China promotes an authoritarian Internet model on the continent.

Furthermore, the idea of a monolithic China operating cohesively to execute a master plan drafted by the Communist Party of China (CPC) has been debunked by empirical studies showing the existence of competing interests among the actors involved in China's globalisation. In the ICT sector, Hong Shen (2017) provides a political-economic analysis of how different units of Chinese capital and state agencies are shaping the international Internet system. For instance, Huawei and partly state-owned ZTE are fierce rivals in Africa, where the two Chinese firms have engaged in price wars to capture larger market shares. When Huawei first established its presence in the African market in the late 1990s, its bidding price was up to 15% lower than that of Western competitors, something that allowed it to make significant inroads across the continent; yet, when ZTE entered Africa, it offered even cheaper prices that were 30%–40% lower to outcompete Huawei (Shen 2017).

A notable factor behind China's cost advantage is their access to financial mechanisms like the 'EPC+F' scheme. In this scheme, Chinese companies such as Huawei or ZTE manage the 'engineering, procurement, and construction' of infrastructure projects, with Chinese banks providing state-backed financing (Arnauld 2024, p.3). If a developing country needs to upgrade its network infrastructure from 3G to 4G or from 4G to 5G to improve the speed and reliability of its internet connection, the cost of upgrading the backbone infrastructure to accommodate this change can be significant, costing multiple millions of USD.

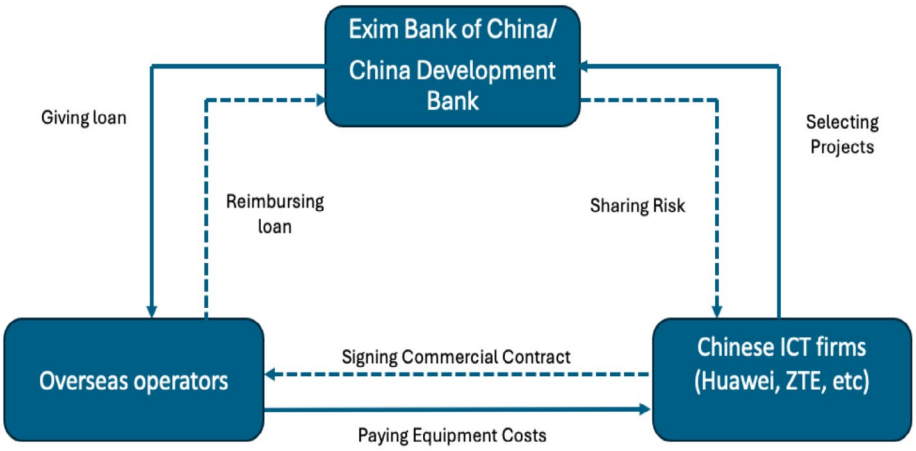

FIGURE 1 | Mechanisms of Chinese ICT equipment financing through domestic firms. *Source:* China Development Bank and Renmin University, Development Finance in China: Case Studies (Beijing: Renmin University Publishing House, 2007). Adjusted from: Tugendhat and Voo, China's Digital Silk Road in Africa and the Future of Internet Governance, SAIS CARI, 2021, 13 (Tugendhat and Voo 2021).

If the government or the operator does not have the means to finance it, ZTE or Huawei can come in and offer a full package including the supply of the equipment, its installation, and financing. China's two key policy banks, the Exim Bank and the CDB, have been the main providers of these suppliers' loans, but China's Ministry of Commerce of the People's Republic of China (MOFCOM) and commercial banks are sometimes also involved in deals (Figure 1).

In Africa alone, the China-Africa Research Initiative at Johns Hopkins University identified over 70 Huawei-related, loan-supported projects between 2000 and 2019 (El Kadi 2022). Huawei's globalisation strategy began with a focus on low- and middle-income economies before targeting high-income markets. This approach mirrors its domestic strategy of 'using the countryside to surround the cities'. The growing demand in developing countries for network expansion (increasing both geographic coverage and user capacity) and technology upgrades (progressing from 3G to 4G and 5G), combined with Huawei's price-competitive products, quickly led to a point where the company generated more revenue internationally than within China.

Access to loans from the CDB and the China Exim Bank was pivotal in Huawei's success abroad, enabling it to offer financing terms that Western competitors could not match. As an employee of the French American telecom company Alcatel-Lucent once remarked, 'We won't die at the hands of Huawei; if we die, it will be at the hands of China Development Bank' (Tugendhat 2020, p.31). Importantly, Chinese loans, unlike those provided by their Western counterparts, do not come with neoliberal or good governance conditionalities, but they invariably come with the contractual conditionality that the money must be spent via Chinese contractors (Erie and Streinz 2021; Makundi et al. 2017; Heeks et al. 2024).

Accordingly, Erie and Streinz (2021) question the common narrative that China actively exports its model of technological control. They argue that this explanation is limited, partly because it presumes the existence of a distinct 'China model' that can be easily replicated in other countries. Instead, they propose that China's approach spreads indirectly through what they call the 'Beijing Effect'. They theorise three mechanisms behind this effect, with the first being that China inadvertently disseminates its digital governance model as other governments voluntarily adopt similar practices to achieve their own goals of data sovereignty and swift digital development (Erie and Streinz 2021). Contrary to the United States and, to a lesser extent, the European Union, China has refrained from using international law to export its data governance model (Gao 2021). More often than not, leaders in developing countries, especially those with authoritarian political configurations, willingly choose to reproduce the Chinese model, albeit with varying degrees of success. Second, China influences global data frameworks through its tech firms, which are playing an increasingly important role in international digital technology standard-setting bodies. Finally, by providing digital infrastructure to host countries along the DSR, Beijing is shaping the conditions under which these countries transition towards digitally mediated economies and societies.

While these mechanisms certainly play a role in spreading Beijing's approach to data governance to other developing countries, important questions remain unanswered in the existing literature concerning the ways in which Chinese ICT firms localise their operations and how this shapes their expansion in the Global South. Most studies remain largely Sino-centric, focusing primarily on Chinese tech firms and the Chinese state, marginalising host countries (Heeks et al. 2024). This paper seeks to address this gap by offering an empirical account of Huawei's operations in Algeria and Egypt.

3 | Methodology

This study is based on 107 semi-structured interviews conducted in Egypt and Algeria between October 2021 and July 2024. The interviews involved a range of participants,

including employees, subcontractors, customers of Huawei, students and startups receiving training and support from Chinese tech giants, ICT policymakers, government officials, university faculty and researchers, as well as representatives from ZTE and Western ICT equipment manufacturers such as Cisco, Ericsson, and Nokia. The inclusion of other foreign firms in the data collection and analysis was a deliberate choice to avoid the pitfall of 'Chinese exceptionalism', which often results in portrayals of Chinese firms as uniquely different and somehow disconnected from wider industry practices (Table 1) (Oya and Schaefer 2019).

In the initial phase, interviewees were selected through purposive sampling. Drawing on previous experience working in Huawei Technologies' North Africa office in Algiers, which is regionally headquartered in Egypt, the author leveraged an extensive network within the ICT industry in both countries, enabling access to key informants during fieldwork. This professional background provided the author with direct insights into the training provided to local employees and the dynamics between Chinese and non-Chinese staff. Additionally, LinkedIn facilitated outreach to engineers employed by Huawei, as well as individuals benefiting from training programmes offered by these Chinese firms in Algeria and Egypt. Snowball sampling from various entry points was employed to build a sufficiently large sample until knowledge saturation was achieved. The author's fluency in Arabic and French, along with advanced proficiency in Mandarin, allowed for interviews with local, Chinese, and other foreign stakeholders in Egypt and Algeria. Data analysis was conducted alongside data collection, with both deductive and inductive approaches applied to interpret the data.

4 | Findings

4.1 | Overview of the Algerian and Egyptian Political Economies and ICT Sectors

Before examining the dynamics shaping Huawei's localisation in Algeria and Egypt, it is essential to consider the political-economic landscapes in which Huawei operates. The economies of both Algeria and Egypt are largely concentrated in low-value-added sectors and are burdened by slow growth. A striking feature of the Middle East and North Africa region is the persistently high youth unemployment rate, which stood at 24.4% in 2023, that is almost double the global average (ILO 2024). Although the mass protests over a decade ago, which came to be referred to as the Arab Spring, called for an end to authoritarianism, poverty, and economic marginalisation, significant progress has yet to be achieved. For the region to foster sustainable economic growth and create quality jobs for its vast unemployed workforce, a structural transformation is essential. This involves moving away from low-productivity, labour-intensive sectors towards high-productivity, technology-based industries that require advanced skills.

TABLE 1 | Breakdown of respondents by category.

Interviewee's category	Number of interviewees
Local subcontractors, suppliers, and customers of Huawei and ZTE	18
Current and former Huawei and ZTE engineers and managers	25
ICT experts and researchers	21
Students and instructors of Huawei and ZTE training programmes	16
Engineers and managers of Ericsson, Nokia and Cisco	14
Policymakers	13
Total	107

This being said, it is important to note that the political economies of Algeria and Egypt diverge significantly. Algeria has a state-dominated economy, where hydrocarbons constitute 86% of export revenues and represent the principal source of government income (World Bank 2024). Algeria is also one of the few countries not affiliated with the World Trade Organization (WTO), maintaining strict controls over foreign investment, including mandatory joint ventures in strategic sectors (Laouisset 2021). Historically, Algeria has implemented protectionist industrial policies, such as import substitution and local content requirements, to foster domestic industry. While recent years have seen the Algerian government attempting to attract more foreign direct investment (FDI), investor interest remains limited outside the hydrocarbons sector. The country relies heavily on public funds to advance infrastructure development, including in telecommunications and the digital economy.

In contrast, Egypt has embraced a more market-driven economy with a greater openness to foreign investment. The country embarked on substantial economic liberalisation as early as 1974 with the introduction of the Open Door Policy (Infitah) (Waterbury 1985). In 2017, Egypt further strengthened its appeal to FDI by enacting an investment law aimed at easing entry barriers, providing enhanced incentives, and fostering localisation initiatives for international companies. Cairo seeks to capitalise on its strategic geographic location, bridging three continents, and its sizable domestic market of over 100 million people—the largest in the MENA region—to establish itself as a regional centre for trade and investment. The government is actively promoting investment in large-scale projects, including the development of a new administrative capital, with China as a principal financial backer (McGregor 2022).

Recognising the potential of the digital economy to support structural transformation, both Algeria and Egypt have adopted national ICT strategies aimed at expanding internet connectivity, enhancing workforce skills, and fostering knowledge-based economies. Egypt's ICT 2030 strategy prioritises the development of ICT infrastructure, promoting digital inclusion, building domestic capacity, and encouraging innovation (MCIT 2016). Egypt has established itself as a regional leader in IT service exports and hosts a thriving startup ecosystem. Although Algeria was slower to embark on its digital transformation, it has made substantial progress in ICT infrastructure, with bandwidth capacity increasing over twentyfold since 2014 (APS 2021). The creation of the Ministry of Microenterprise, Knowledge Economy, and Startups in

2020 reflects the government's ambition to move away from a hydrocarbon-dependent economy towards a knowledge-based model.

The two North African countries maintain strong relations with China, grounded in a shared history of resistance to colonial domination, dating back to the early years of the PRC. More recently, the BRI has bolstered these ties because North Africa holds a logistically notable position as a maritime point of connection between Africa, Asia, and Europe. This has made North Africa a uniquely positioned strategic hub for the Digital Silk Road. Chinese policy documents explicitly acknowledge the importance of the region: for example, China's 13th Five-Year Plan (2016–2020) states as an aim to 'develop an online Silk Road with the Arab countries and others' through high-speed fibre optic networks (CCCPC 2016). China's approach to North Africa has been shaped by several initiatives. In 2015, the country announced the Digital Silk Road and introduced the Internet Plus Strategy—a plan by Premier Li Keqiang to modernise traditional industries by integrating digital services. Then in 2016, the Chinese Foreign Ministry released the China-Arab Policy Paper. Together, these efforts guided China's engagement with North African countries. The confluence of these three strategies led to a surge in new partnerships among North African governments and Chinese tech firms—from fibre optic cable constructors to e-commerce giants and surveillance equipment providers.

4.2 | Huawei: Expanding Footprint by Catering to Local Demand

With North African countries striving to diversify their economies and accelerate their digital transitions, Huawei has put considerable emphasis on its role as a strategic partner in achieving digital development. What follows delves into the empirical evidence gathered through fieldwork to examine Huawei's strategy for meeting local demand in infrastructure building, training human capital, as well as manufacturing and R&D activities.

4.2.1 | Infrastructure Building

Aiming to speed up the shift to digital economies, the two North African governments are investing heavily in upgrading and expanding their network infrastructure. Egypt witnessed significant growth in internet usage, increasing from 29% of the population in 2009 to 72% as of January 2020. In Algeria, internet penetration rates were estimated at 63% by the same year (World Bank 2023a). Growth in mobile broadband access is correlated with a surge in mobile-cellular subscriptions and the expansion of 3 G and 4 G network coverage. Mobile penetration in Egypt stands at 110% and is covered by four operators, Orange, Vodafone, Etisalat, and Telecom Egypt. Algeria's mobile penetration reached 105.8%, distributed between three core operators, Mobilis, Djezzy, and Ooredoo (World Bank 2023b). While these rates represent important growth, the region's internet penetration remains just slightly above the world's average, estimated at 60% (World Bank 2023a).

This creates significant demand for ICT infrastructure provided by equipment manufacturers like Huawei, which has leveraged its price competitive infrastructure provision to gain more market share in the two developing countries. The presence of the Shenzhen firm in the two countries' ICT infrastructure composition predates the launch of the BRI. Egypt, the largest market in the MENA region and second-largest market in Africa, was selected by Huawei to be home to its Northern Africa headquarters in Cairo in 1999. The company entered the Algerian market the same year by establishing its subsidiary Huawei Telecom Algeria. The Chinese firm employs an estimated 1000 workers in Egypt and about half as many in Algeria, with about 70% of the staff made up of local employees and the remaining 30% of Chinese and other foreign engineers.[2]

In Egypt, since the launch of the BRI in 2013, which coincided with the arrival of President El Sisi to power, the tech firm played a pivotal role in providing advanced infrastructure at competitive rates—a boon for Egypt's cash-scarce economy. Beijing has facilitated financial support through loans, aiding Egypt's infrastructure projects and easing economic constraints. For instance, in 2018, Huawei helped Telecom Egypt secure a US$200 million loan to fund its 4G network rollout, including the deployment of core and transport network technologies (Le Maistre 2018). The deal, which involved the Bank of China and China Export & Credit Insurance Corporation, was brokered and facilitated by Huawei. Then CEO of Telecom Egypt, Ahmed El Beheiry, explained the aims of the deal:

> Telecom Egypt has several strategic long-term expansion plans to be delivered in the coming years. To achieve such plans, we have worked on attaining long-term financing at the lowest possible cost as well as the most convenient payment terms to match our cash flow generation while proceeding with our rollout plans.... The facility benefits Telecom Egypt by providing a simplified purchasing process through a packaged financial solution, while it allows Huawei to further expand its business in Egypt.
>
> (Connecting Africa 2018)

In Algeria, as in post-uprising Egypt, the regime sought to reinstate political control, including over the Internet. Here, the Chinese Internet model, which combines spectacular rates of digital development with overt political control, became even more attractive in the eyes of Algerian rulers. Under the leadership of Abdelmadjid Tebboune, a series of announcements designated Chinese ICT firms as Algeria's partners in digital transition. Most significantly, President Tebboune ordered that a contract to build a large data centre for Algeria's High Commission for Digitalisation be awarded to Huawei during the Council of Ministers in March 2024 (Maghreb Emergent 2024). The presidential communiqué justified a lack of open tendering by highlighting the 'urgent nature' of the infrastructure for strengthening the country's digital sovereignty and consolidating the cooperation between the two countries. Here, similarly to the Egyptian case, a convergence of interests emerged between the Algerian leadership and the Chinese ICT firm, whereby digital data, which was previously stored in data

centres in Europe and elsewhere, could be localised within national borders, ensuring more data sovereignty at an affordable rate (El Kadi 2023).

At the same time, this turn towards digital sovereignty has come with an impulse to expand online surveillance. For semi-authoritarian regimes worldwide, many of which participate in the BRI, China's approach to leveraging the internet as a tool for population control holds significant appeal. Egypt, for instance, adopted in 2018 a cybercrime law that draws on China's internet governance practices. In 2018, the country enacted a cybercrime law that curtails citizens' rights under the pretext of national security. Reports suggest that, in recent years, Cairo has restricted access to hundreds of websites, predominantly targeting media outlets (Accessnow 2018).

While the Algerian and Egyptian governments have granted major infrastructure contracts to Huawei as part of their efforts to catch up in terms of network infrastructure, e-governance, and cloud data centre building, it is challenging to access these contracts. As Huawei Algeria and Huawei Egypt are subsidiaries under the Huawei brand, they do not have to publicly release financial data. Nonetheless, as Ran Li and Kee-Cheok Cheong have noted, their 'performance can be inferred directly from periodic announcements the company issues and indirectly from viewing financial data [...] from the parent company's annual reports.' (Li and Cheong 2017).

The cost competitiveness of Chinese contractors is a significant advantage over competitors like Ericsson or Nokia, who do not have deep enough pockets to include self-sourced capital in their offerings. International agreements, including those offered by the OECD Development Assistance Committee (OECD-DAC), restrict conventional donors or lenders from tying their grants and loans to investment contracts with their domestic companies. In contrast, China offers full-package deals that speed up the processing of deals and the construction of infrastructure. Given there is a fixed cost to realize ICT infrastructure, lower costs in building and maintaining this infrastructure can translate into more affordable ICT services, something that can in turn speed up the digital transition in developing economies.

4.2.2 | Training and Technology Transfer Programmes

Fieldwork interviews indicate that training and knowledge transfer programmes are central to Huawei's localisation strategy in the two North African countries. Interviewees in Algeria and Egypt reported that new employees at Huawei undergo extensive training upon hiring, and this training continues throughout their careers, with mandatory assessments conducted at various stages. However, this practice is not unique to Huawei, as ICT engineers from competing firms also highlighted similar approaches. In high-tech industries, it is standard for companies to provide continuous training to employees, as it is essential for operations such as the installation, troubleshooting, and maintenance of the equipment sold to customers.

One area where Huawei distinguishes itself from other ICT firms is its collaboration with local universities. Huawei's enterprise division has been particularly active in forming partnerships with universities and training students across North Africa. Huawei has developed two types of partnerships with Algerian and Egyptian universities: the Huawei Authorised Network Academy (HANA) and the Huawei Authorised Information and Network Academy (HAINA).[3] Both of these initiatives are also present in other regions, including Africa, Asia, and Latin America. According to Huawei, the purpose of these academies is to support capacity building to drive the digital transformation of local economies by linking local talent with industry needs. Specifically, the academies focus on promoting Huawei technology certifications among university students studying ICT-related subjects. These certifications demonstrate that the holders are skilled in the use and maintenance of the manufacturer's technologies. Graduates typically find employment with mobile operators, OEMs, or other companies utilising these technologies. Alternatively, some join channel partners who sell and install the ICT firm's equipment for clients such as governments and large corporations.[4]

In recent years, Huawei has significantly increased its initiatives to establish ICT academies throughout Algeria. In collaboration with the Algerian Ministry of Higher Education and Scientific Research, a partnership formalised in 2021, Huawei has set up five prominent ICT laboratories in major Algerian universities. These include the National Institute of Telecommunications and Information and Communication Technologies (with locations in Algiers and Oran), the University of Saida, the University of Sciences and Technology Houari Boumediene (in Algiers), and the National School of Computer Science (in Algiers) (Maghreb Emergent 2021). These labs are furnished with high-performance computers and state-of-the-art equipment designed for student training. Partner universities benefit from ICT courses delivered by certified Huawei instructors, who provide training not only to students but also to future trainers. Huawei reports that each year, over 3000 young Algerians receive training through these programmes in various ICT-related disciplines.[5]

Similarly, in Egypt, Huawei established ICT Academies in 2013 with the goal of enhancing university infrastructure, developing ICT skills among young Egyptians, and improving graduate employment prospects by strengthening university–industry connections. In 2019, Huawei formalised a partnership with Egypt's Ministry of Communications and Information Technology, Ministry of Manpower, and Ministry of Higher Education and Scientific Research to launch the ICT Talent Bank (ITB), a flagship programme aimed at capacity building in the local ICT sector.[6] The programme sets out an ambitious goal to establish 100 Huawei academies across Egypt, provide training for 200 instructors and 1200 ICT engineers, and offer certification to 4000 people. Participants are competitively selected from various Egyptian universities, including Assiut University, Aswan University, and Suez University. According to Sun Luocheng, the CEO of Huawei Egypt, the ICT Talent Bank aims to serve as a bridge linking all stakeholders in Egypt's digital ecosystem, aligning with the government's efforts to foster a knowledge-based economy as outlined in Egypt's 'ICT 2030' agenda.[7]

When it comes to ICT certification, Huawei is attempting to challenge US-headquartered Cisco. Traditionally, the ICT OEM enterprise sector has been led by Cisco certifications, widely regarded as the gold standard among ICT engineers.

Huawei has been actively trying to erode Cisco's dominance of the certification market.[8] Through its locally established ICT academies, Huawei has introduced various incentives to increase the number of students certified in its technologies. This includes donating expensive simulation equipment to universities that achieve high numbers of Huawei-certified students each year and offering discounts on certification fees, which students pay directly. Interviews with engineers in Algeria and Egypt reveal that Cisco certification fees range from $200 to $600, whereas Huawei certifications are comparatively lower, costing between $100 and $500.[9] Interviewees reported that during the COVID-19 pandemic, Huawei waived all certification fees for those seeking Huawei certification, while Cisco offered a 50% discount on its certification fees.[10] With the cost-free option now available, many Algerian and Egyptian students interviewed by the author opted for Huawei's certifications instead of Cisco's.

Huawei has also introduced the Seeds for the Future scholarship, which selects top students from around the world to visit Huawei's headquarters in Shenzhen, where they are exposed to advanced technologies and gain insight into Chinese culture. Additionally, Huawei organizes large-scale ICT competitions, both within and across North African countries. Algerian and Egyptian teams were among the winners in the global finals of the Huawei ICT Competition 2019–2020 (Aptantech 2020).

A closer examination of Huawei's localisation efforts in Algeria and Egypt reveals that the company's training initiatives primarily focused on equipping local students, workers, and firms with skills to operate its proprietary technologies. Fieldwork findings indicate that these training and capacity-building programmes contributed minimally to technology transfer that might facilitate domestic technological upgrading and structural transformation (El Kadi 2024). Nevertheless, through partnerships with local universities and active involvement in capacity-building efforts, the Chinese tech giant has successfully garnered favor among government officials throughout the region.

4.2.3 | Accommodation to Local Policy Agendas

Beyond addressing urgent infrastructure needs and placing a strong emphasis on training programmes, Huawei has demonstrated a remarkable ability to adjust to the specific policy priorities of both Algeria and Egypt. By aligning its strategies with local government goals, the tech firm has effectively positioned itself as an ally in the countries' digital transformations. The following case studies—the smartphone manufacturing facility in Algiers and the OpenLab in Cairo—highlight the Chinese firm's flexibility and adaptability to changing economic objectives.

4.2.3.1 | Algiers Manufacturing Plant. One of Huawei's most prominent ventures in North Africa was its smartphone manufacturing facility in Algeria. Established in 2019, this factory was the first of its kind on the African continent. The facility was developed through a collaboration between Huawei and the Algerian firm AFGO-Tech. Initially designed to produce 15,000 smartphones per month, its capacity was later doubled to 30,000 units monthly (Ecofin Agency 2019). The plant employed approximately 140 Algerian workers, including 12 engineers who received specialised training in Shenzhen on Huawei's manufacturing processes and techniques.[11]

The establishment of a smartphone factory in Algiers followed fierce negotiations between Huawei and the Algerian government. Algeria, heavily reliant on hydrocarbon exports, faced significant economic challenges after the 2014 crash in global commodity prices. In response, the government sought to conserve foreign reserves by reducing imports and adopting an import-substitution policy. As part of this strategy, 900 products, including mobile phones, were banned from import in 2018 (Reuters 2018). To further diversify the economy and promote local value-added production, the government introduced a range of industrial policies aimed at attracting manufacturers to localize their operations.

The Algerian government's pressure proved effective: concerned about losing market share in the North African country, Huawei responded by agreeing to also localise its production. In January 2019, the company announced plans to establish its first African factory in Algiers. During the factory's inauguration, Huawei representatives highlighted that the facility, located in Oued Smar, a burgeoning industrial zone on the eastern outskirts of Algiers, would feature advanced technology and, crucially, facilitate the transfer of cutting-edge technologies and production expertise to Algeria. In its initial months of operation, the factory's Algerian workforce was overseen by Chinese specialists brought in from Huawei's other production sites to ensure adherence to the company's rigorous standards (L'ExpressDZ 2019). The plant began by assembling the Y7 Prime smartphone, a model carefully selected by Huawei for its alignment with consumer preferences in the Algerian market. The Oued Smar factory ensured continuous access to Algeria's promising consumer market of over 44 million through localised production. In December 2018, prior to the factory's launch, Huawei's market share in Algeria's phone market was only about 6%. By August 2020, it had doubled to peak at 12.3% (though it has since declined a bit), outcompeting Condor, Algeria's homegrown cell phone brand (Statcounter 2021).

Although Huawei adapted to the government's desire to cut imports and manufacture smart phones domestically, interviewed experts raised concerns regarding the level of technological integration at Huawei's Algiers factory.[12] The factory relied entirely on imported Semi Knocked Down (SKD) and Completely Knocked Down (CKD) kits, which are produced in China and then shipped to Algeria for final assembly. This process limited local linkages and technology spillovers, which ultimately meant that there was little value addition in the country. Algerian authorities have criticised the situation, describing the manufacturing as ‘fictitious production’ and ‘disguised import’ (Jeune Afrique 2020). In January 2021, the factory's operations were halted following a government ban on the importation of CKD and SKD kits, leading to the indefinite layoff of its workforce.[13] At the time of writing, the factory's assembly lines are still suspended.

4.2.3.2 | Cairo's OpenLab. Another key project for Huawei in North Africa is its OpenLab in Cairo, launched in 2017. At that time, this lab was among only eight globally and the second in Africa, following a similar facility in

Johannesburg (Huawei 2017). This lab is aimed at enterprise clients, providing a platform for collaborative innovation with local partners. Located within Cairo's Smart Village office complex and spanning 400 square metres, Huawei's Open Lab was launched in response to Egypt's demands in digital development. A few months before the announcement, the Egyptian government had adopted its ambitious 'ICT 2030' vision which aimed at steering the country towards a digital economy. The policy vision sought 'to advance research and development, foster innovation, and drive entrepreneurship within the ICT sector to stimulate growth and establish Egypt as a hub for regional innovation' (MCIT 2016).

According to the tech firm's press release, the OpenLab seeks to foster synergies between clients and a network of local industry partners to develop applications and services tailored to the Egyptian and broader Middle East and North African market (Huawei 2017). In many ways, the firm accommodated the government's priorities in order to further gain market share and cement its presence in the country and region. As stated by Mr. Ni Zheng, President of Huawei Enterprise Business Group, Northern Africa Region at the time:

> We established the OpenLab in Cairo so that we can make full use of the advantages of Egypt and serve all of Northern Africa. First, the ICT industry market in Cairo is relatively mature and its marketing capabilities influence surrounding countries. Second, Egypt recognizes the significance of industrial digital transformation, and the local industry chain ecosystem supports this transition for a number of industry enterprises.
>
> (Huawei 2017)

However, despite the high-profile launch, the lab does not equate to one of Huawei's fully equipped R&D centres, where the company conducts its most advanced research. According to Huawei, the Cairo lab is primarily focused on non-technological research and development, concentrating on applications in public safety, smart city management, digital governance, and smart education.[14] The Cairo facility does not have plans to focus on technology-centred R&D, such as AI-driven applications, the Internet of Things, sensors, and other high-tech areas. While Huawei has set up R&D centres in more advanced economies—including a recent one launched in France in 2020 (GizChina 2020)—it has not yet extended these specialised collaborative initiatives to African nations. In this way, Huawei has pursued localisation in Egypt within a global model that reserves its advanced R&D work for China and countries with robust intellectual property regulation. As a commercially-driven enterprise, the Chinese firm lacks motivation to share its leading innovations in ways that might compromise its technological—and thus competitive—edge (Tugendhat 2021; El Kadi 2024).

In sum, an important part of Huawei's successful localisation in the two countries is its flexibility in aligning with the Algerian and Egyptian governments' development priorities. But this adaptation to domestic demands has been a balancing act: the firm engages in developmental activities that aid local economies in their digital transitions, while safeguarding its proprietary knowledge to prevent the rise of local competitors. This approach enables the Shenzhen-based firm to win the hearts of local leaders while falling short of providing transformative development opportunities to the host countries.

5 | Conclusion and Policy Recommendations

This paper examined why and how Chinese ICT firms succeed in developing countries by examining the case study of Huawei's strategies in Algeria and Egypt. It finds that a big part of the story behind Huawei's success is its adaptation to local demand in digital development. In Algeria and Egypt, Huawei has linked its operational growth to the developmental priorities of these host countries, including the provision of infrastructure, capacity building programmes, and the adjustment to changing economic agendas. Huawei's deep integration into the region through partnership with local firms, universities, and institutions has facilitated smooth collaboration with policymakers and influential actors. This embeddedness has enabled the company to navigate complex political and economic environments while simultaneously reinforcing its role as a pivotal player in shaping the digital future of North Africa.

The case of Huawei provides a good illustration of the highly flexible nature of the Chinese ICT industry in its outward expansion, especially across the Global South. The findings of this study corroborate other studies highlighting the adaptability of Chinese firms. Looking at the operations of AliExpress, a platform owned by Alibaba, in Kazakhstan, Oreglia et al. (2021) argue that flexibility, customisation, and tailored services have been central to the expansion of the Chinese platform. Similarly, He (2024) finds that Chinese digital platforms largely undertook their overseas expansion based on commercial interests, adjusting to the demands of the Indonesian market rather than responding to Beijing's high-level policy agenda.

These findings echo research which highlights how Chinese ICT firms have cemented their expansion in developing countries by establishing partnerships with local universities and businesses, providing training and capacity building programmes for domestic firms (Agbebi 2019; Li and Cheong 2017). This being said, the evidence emerging from fieldwork in both Algeria and Egypt suggests that firms only engage in seemingly developmental activities that do not lead to meaningful linkages or knowledge transfers, enabling them to maintain control of their technological edge and ensure market dominance. This is in line with Tugendhat (2021) who finds in an empirical study on Huawei's training centres in Kenya and Nigeria that the Chinese firm, like its Western competitors, limits by design the scope of the knowledge it shares with local employees and actors.

This study offers several policy implications for both developing and wealthier nations. Firstly, while China's global digital expansion addresses some of the infrastructure and skills

development needs of countries in the Global South, local policymakers must critically assess the extent of the much-publicised development initiatives by Chinese firms. It is essential to avoid replacing existing technological dependency on Western countries with a similar reliance on Chinese technologies. Crucially, governments should prioritise meaningful technology transfer, as Chinese and other foreign firms will inevitably aim to safeguard their proprietary knowledge and maintain their technological advantage. To foster robust digital economies that create jobs and improve living standards, developing countries should take lessons from China by ensuring that their own emerging tech champions have access to adequate financial resources and are shielded from overly fierce competition. Strengthening local firms is key to long-term digital success. However, it is important to recognise that China's success in this domain was underpinned by the vast scale of its domestic market, which provided the necessary demand base to nurture and sustain national champions. Most developing countries do not enjoy similar economies of scale, which limits their ability to replicate such a model. In this context, one potential avenue to maximise the developmental impact of foreign ICT investments lies in enhancing regional cooperation. By fostering cross-border collaboration, harmonising digital regulations, and building integrated markets, countries can pool demand, attract higher-quality investment, and facilitate the emergence of competitive regional firms. Moving away from fragmented, bilateral commercial negotiations with China would create a more equitable playing field for developing countries in their engagement with Huawei and other companies, helping to attract and leverage investments and expertise more effectively.

For Western countries attempting to counter the presence of China in the Global South, it is important to move away from cold-war style policies that primarily aim to 'counter China' and instead put the needs and priorities of developing countries at the heart of policy proposals. Here, investing in understanding the specific digital development requirements and priorities of low- and middle-income countries is needed. Initiatives like the Clean Network project, introduced during the first Trump administration, which advocated for replacing existing Chinese-built ICT infrastructure with US-built alternatives (Department of State 2021), risk being perceived as tone-deaf to the pressing needs of developing countries. In regions where digital transformation hinges on addressing vast infrastructure deficits, such proposals may come across as dismissive of local realities and priorities. Developing nations require affordable and reliable solutions to bridge their digital divides, not an imposition of geopolitical rivalries that disregard their developmental aspirations. Building genuine partnerships with local stakeholders in developing countries to gather insights into the requirements in terms of infrastructure, financing, and capacity building is needed moving forward.

Acknowledgements

This article is based on work presented at the symposium 'CTRL + Power: The (Geo)Politics of Digital Authoritarianism', jointly organised by LSE Ideas, T.wai—Torino World Affairs Institute, and the University of Turin, with the financial support of Fondazione Compagnia di San Paolo.

Conflicts of Interest

The author declares no conflicts of interest.

Data Availability Statement

The data that support the findings of this study are available on request from the corresponding author. The data are not publicly available due to privacy or ethical restrictions.

Endnotes

[1] It is important to note that the governance practices of US-headquartered technology firms operating major social media platforms during the genocide in Gaza have drawn widespread criticism for extensive censorship. This has included practices such as shadowbanning, content removal, account suspensions, and algorithmic suppression of pro-Palestinian content, raising serious questions about the consistency of these platforms' commitments to freedom of expression.

[2] Interviews with Huawei engineers and managers in Algiers, Algeria 03/01/2022, Cairo, Egypt, 02/03/2022.

[3] Interview with ICT Expert, Algiers Algeria, 30/11/2021.

[4] Interviews with Algerian students at the National Institute of Post and Information and Communication Technologies, Algiers, Algeria, on 07/12/2021.

[5] Interview with a Huawei representative, Algiers, Algeria 26/10/2021.

[6] See Video of 20 October 2019 on Huawei ICT Academy Egypt Facebook's page: https://www.facebook.com/HuaweiICTAcademyEgy/posts/huawei-ict-talent-bank-itb-provides-different-international-certifications-such-/852720728632435/.

[7] Ibid.

[8] Interviews with Algerian ICT engineers, Algiers, Algeria. 07/12/2021, 06/1/2022, 18/12/2023.

[9] Interviews with Egyptian ICT engineers, Cairo, Egypt. 21/02/2022, 27/02/2022, 16/06/2023.

[10] Interviews with several Algerian and EgyptianICT students, Algiers, Algeria, 07/11/2021. Cairo, Egypt, 09/03/2022.

[11] Interview with former assembly line manager, Algiers, Algeria, 28/12/2021.

[12] Interview with ICT expert, Algiers, Algeria, 15/12/2021.

[13] Interview with former assembly line manager, Algiers, Algeria, 28.12.2021.

[14] Interview with Egyptian ICT Engineer working in the OpenLab, Cairo, 10/03/2022.

References

Abdel Ghafar, A., and A. Jacobs. 2019. "Beijing Calling: Assessing China's Growing Footprint in North Africa." https://www.brookings.edu/research/beijing-calling-assessing-chinas-growing-footprint-in-north-africa/.

Accessnow. 2018. "Egyptian Parliament Approves Cybercrime Law Legalizing Blocking of Websites and Full Surveillance of Egyptians." https://www.accessnow.org/egyptian-parliament-approves-cybercrime-law-legalizing-blocking-of-websites-and-full-surveillance-of-egyptians/.

Agbebi, M. 2019. "Exploring the Human Capital Development Dimensions of Chinese Investments in Africa: Opportunities, Implications and Directions for Further Research." *Journal of Asian and African Studies* 54, no. 2: 189–210. https://doi.org/10.1177/0021909618801381.

Alden, C., and D. Large. 2015. *China's Exceptionalism and the Challenges of Delivering Difference in Africa, in China in Africa*. Routledge.

Aptantech. 2020. "Algeria, Egypt and Nigeria Teams Among Winners at Huawei's Global ICT Contest | Aptantech." https://aptantech.com/2020/11/18/algeria-egypt-nigeria-teams-among-winners-at-huaweis-global-ict-contest/.

Arnauld, S. 2024. "African Agency in ICT Infrastructure Provider Choice: Navigating Access to Foreign Finance and Technology." *Telecommunications Policy* 48, no. 5: 102713. https://doi.org/10.1016/j.telpol.2024.102713.

APS. 2021. "L'augmentation du débit Internet minimum réalisée grâce à d'énormes investissements [The increase in minimum Internet speed achieved thanks to massive investments]. Algérie Presse Service."

Brautigam, D. 2009. *The Dragon's Gift: The Real Story of China in Africa*. Oxford University Press.

Calabrese, L., and X. Tang. 2020. "Africa's Economic Transformation: The Role of Chinese Investment."

CCCPC. 2016. "The 13th Five-Year Plan for Economic and Social Development of the People's Republic of China (2016–2020)." https://en.ndrc.gov.cn/policies/202105/P020210527785800103339.pdf.

Chalk, W. 2019. *China's Digital Imperialism: Shaping the Global Internet*. China Project. https://thechinaproject.com/2019/07/02/chinas-digital-imperialism-shaping-the-global-internet/.

Chen, B.-M. 2021. *Digital Leninism: The Complex, Dangerous Relationship Between Tech Giants and the Chinese Communist Party*. Center for International Private Enterprise. https://www.cipe.org/resources/digital-leninism-the-complex-dangerous-relationship-between-tech-giants-and-the-chinese-communist-party/.

Cheney, C. 2019. "China's Digital Aid: The Risks and Rewards." https://www.cfr.org/china-digital-silk-road.

Connecting Africa and Reading, L. 2018. "Huawei Helps Telecom Egypt Secure a $200M Loan to Fund 4G Rollout, Connecting Africa." http://www.connectingafrica.com/author.asp?section_id=530&doc_id=743459.

Department of State. 2021. "The Clean Network, United States Department of State." https://2017-2021.state.gov/the-clean-network/.

Ecofin Agency. 2019. "Algeria: Huawei Launched Its Oued Smart Phone Assembly Plant on January 22, 2019, Ecofin Agency." https://www.ecofinagency.com/telecom/2801-39573-algeria-huawei-launched-its-oued-smar-phone-assembly-plant-on-january-22-2019.

El Kadi, T. H. 2022. "How Huawei's Localization in North Africa Delivered Mixed Returns." https://policycommons.net/artifacts/2325101/how-huaweis-localization-in-north-africa-delivered-mixed-returns/3085620/.

El Kadi, T. H. 2023. "The Digital Silk Road and Emerging African Data Governance Frameworks: Evidence From Egypt." In *Shaping the Future of Africa-China Engagement*, edited by F. Soulé. CORA Report. https://erepository.uonbi.ac.ke/bitstream/handle/11295/163836/Shaping%20the%20future%20of%20Africa.pdf?sequence=1.

El Kadi, T. H. 2024. "Learning Along the Digital Silk Road? Technology Transfer, Power, and Chinese ICT Corporations in North Africa." *Information Society* 40, no. 2: 136–153. https://doi.org/10.1080/01972243.2024.2317060.

Erie, M. S., and T. Streinz. 2021. "The Beijing Effect: China's Digital Silk Road as Transnational Data Governance." *New York University Journal of International Law and Politics* 54, no. 1: 1–92.

Gagliardone, I. 2019. *China, Africa, and the Future of the Internet: New Media, New Politics*. 1st ed. Zed Books.

Gao, H. S. 2021. "Data Regulation With Chinese Characteristics." In *Big Data and Global Trade Law*, edited by M. Burri, 245–267. Cambridge University Press. https://doi.org/10.1017/9781108919234.017.

GizChina. 2020. "Huawei Opens Its Sixth Research Institute in France—Focuses on Mathematics and Computing—Gizchina.com." https://www.gizchina.com/2020/10/11/huawei-opens-its-sixth-research-institute-in-france-focuses-on-mathematics-and-computing/.

Gonzalez-Vicente, R. 2012. "Mapping Chinese Mining Investment in Latin America: Politics or Market?" *China Quarterly* 209: 35–58. https://doi.org/10.1017/S0305741011001470.

He, Y. 2024. "Chinese Digital Platform Companies' Expansion in the Belt and Road Countries." *Information Society* 40, no. 2: 96–119. https://doi.org/10.1080/01972243.2024.2317058.

Heeks, R., A. V. Ospina, C. Foster, et al. 2024. "China's Digital Expansion in the Global South: Systematic Literature Review and Future Research Agenda." *Information Society* 40, no. 2: 69–95. https://doi.org/10.1080/01972243.2024.2315875.

Hillman, J. E. 2021. *The Digital Silk Road: China's Quest to Wire the World and Win the Future*. Harper Business.

Ho, C.-Y., T. P. Narins, and W. Sung. 2023. "Developing Information and Communication Technology with the Belt and Road Initiative and the Digital Silk Road." *Telecommunications Policy* 47, no. 10: 102672. https://doi.org/10.1016/j.telpol.2023.102672.

Huawei. 2017. "Huawei Announces New OpenLab in Cairo to Build ICT Ecosystem in Northern Africa—Huawei Press Center, Huawei." https://www.huawei.com/en/news/2017/12/Huawei-New-OpenLab-Cairo.

ILO. 2024. "Global Employment Trends for Youth 2024 Middle East and North Africa." https://www.ilo.org/media/583631/download.

Jeune Afrique. 2020. "Condor et Ses Consœurs de L'industrie Dans la Ligne de Mire d'Alger—Jeune Afrique." https://www.jeuneafrique.com/mag/906732/economie/condor-et-ses-consoeurs-de-lindustrie-dans-la-ligne-de-mire-dalger/.

Kurlantzick, J. 2020. "China's Digital Silk Road Initiative: A Boon for Developing Countries or a Danger to Freedom." https://thediplomat.com/2020/12/chinas-digital-silk-road-initiative-a-boon-for-developing-countries-or-a-danger-to-freedom/.

Laouisset, D. E. 2021. "Algeria Import Substitution Policy: The Case of the Pharmaceutical Industry." *Les Cahiers du Cread* 37, no. 1: 5–39.

Le Maistre, R. 2018. "Huawei Helps Telecom Egypt Secure a $200M Loan to Fund 4G Rollout, Connecting Africa." http://www.connectingafrica.com/author.asp?section_id=530&doc_id=743459.

Lee, C. K. 2018. *The Specter of Global China: Politics, Labor, and Foreign Investment in Africa*. University of Chicago Press.

L'ExpressDZ. 2019. *Huawei Lance Son Usine D'assemblage de Smartphones en Algérie*. L'express DZ. https://www.express-dz.com/2019/01/22/huawei-lance-son-usine-dassemblage-de-smartphones-en-algerie/.

Li, R., and K.-C. Cheong. 2017. "Huawei and ZTE in Malaysia: The Localisation of Chinese Transnational Enterprises." *Journal of Contemporary Asia* 47, no. 5: 752–773. https://doi.org/10.1080/00472336.2017.1346697.

Liu, W., and M. Dunford. 2016. "Inclusive Globalization: Unpacking China's Belt and Road Initiative." *Area Development and Policy* 1, no. 3: 323–340. https://doi.org/10.1080/23792949.2016.1232598.

Lou, X. 2019. "Building China-Latin America Digital Silk Road: Challenges and Roadmap." *China International Studies* 77: 48.

Mackinnon, A. 2019. "For Africa, Chinese-Built Internet Is Better than No Internet at All. Foreign Policy." https://foreignpolicy.com/2019/03/19/for-africa-chinese-built-internet-is-better-than-no-internet-at-all/.

Maghreb Émergent. 2021. "TIC: Huawei Algérie Investit Dans Les Universités Algériennes, Maghreb Émergent, 5 January." https://maghrebemergent.net/tic-huawei-algerie-investit-dans-les-universites-algeriennes/.

Maghreb Emergent. 2024. *Réalisation D'un Data Center: Le Contrat Avec Huawei se Négociera Directement Avec le Haut-Commissariat à la Numérisation*. Maghreb Émergent. https://maghrebemergent.net/realisation-dun-data-center-le-contrat-avec-huawei-se-negociera-directement-avec-le-haut-commissariat-a-la-numerisation/.

Makundi, H., H. Huyse, and P. Develtere. 2017. "Negotiating the Technological Capacity in Chinese Engagements: Is the Tanzanian Government in the Driving Seat?" *South African Journal of International Affairs* 24, no. 3: 331–353. https://doi.org/10.1080/10220461.2017.1391116.

McGregor, G. 2022. "China Emerges as Lead Funder for Egypt's New Administrative City—AI-Monitor: Independent, Trusted Coverage of the Middle East." https://www.al-monitor.com/originals/2022/12/china-emerges-lead-funder-egypts-new-administrative-city.

MCIT. 2016. "Egypt's ICT 2030 Strategy—Egyptian Ministry of Communications and Information (MCI)." https://mcit.gov.eg/en/ICT_Strategy.

Oreglia, E., H. Ren, and C.-C. Liao. 2021. "The Puzzle of the Digital Silk Road." In *Digital Silk Road in Central Asia: Present and Future*. Davis Centre for Russian and Eurasian Studies, Harvard University.

Oya, C., and F. Schaefer. 2019. "Chinese Firms and Employment Dynamics in Africa: A Comparative Analysis."

Polyakova, A., and C. Meserole. 2019. "Exporting Digital Authoritarianism: The Russian and Chinese Models, Policy Brief, Democracy and Disorder Series."

Reuters. 2018. "Algeria Bans Imports of Cell Phones, Veg and Other Goods to Curb Trade Deficit, Reuters." https://www.reuters.com/article/ozabs-uk-algeria-economy-idAFKBN1EY1ED-OZABS.

Shen, H. 2017. "Across the Great (Fire) Wall: China and the Global Internet, University of Illinois at Urbana-Champaign, PhD Disseration, p. 299."

Statcounter. 2021. "Mobile Vendor Market Share Algeria, StatCounter Global Stats." https://gs.statcounter.com/vendor-market-share/mobile/algeria/2020.

Tugendhat, H. 2020. *How Huawei Succeeds in Africa: Training and Knowledge Transfers in Kenya and Nigeria. China Africa Research Initiative*. Vol. 31. SAIS Hopkins.

Tugendhat, H. 2021. "Connection Issues: A Study on the Limitations of Knowledge Transfer in Huawei's African Training Centres." *Journal of Chinese Economics and Business Studies* 2021: 1–27. https://doi.org/10.1080/14765284.2021.1943194.

Tugendhat, H., and J. Voo. 2021. "China's Digital Silk Road in Africa and the Future of Internet Governance. Working Paper 2021/50. Working Paper." https://www.econstor.eu/handle/10419/248178.

Wang, Y. 2016. *Yidaiyilu: Chongsu Jingji Quanqiuhua Huayuquan [the Belt and Road Initiative: Restructuring the Economic Globalization]*. Red Flag Manuscript.

Waterbury, J. 1985. "The 'Soft State' and the Open Door: Egypt's Experience With Economic Liberalization, 1974-1984." *Comparative Politics* 18, no. 1: 65–83. https://doi.org/10.2307/421658.

Wold Bank. 2024. "Algeria Country Report." https://www.worldbank.org/en/country/algeria.

World Bank. 2023a. "Individuals Using the Internet (% of Population)." https://data.worldbank.org/indicator/IT.NET.USER.ZS?locations=DZ.

World Bank. 2023b. "Mobile Penetration Per Country." https://data.worldbank.org/indicator/IT.CEL.SETS.P.