

POLICY POINTS

**Knowledge & Technology**

**Transfers** - both countries' current administrations should continue to prioritize projects like Konza Technopolis and other SEZs.

**Leverage Market Access -**

African countries seeking to move up the value chain should leverage market access against foreign companies collaborating with local African firms.

**Local Investment -** Kenyan

and Nigerian governments should adopt a tax regime similar to South Africa where foreign technology firms are forced to reinvest a proportion of profits locally.

## How Huawei Succeeds in Africa

Henry Tugendhat

HUAWEI OPERATES EIGHT TRAINING CENTERS ACROSS AFRICA. These are primarily focused on training customers, contractors and channel partners. The centers are also used for Corporate Social Responsibility (CSR) activities that raise Huawei's public profile and cultivate potentially significant relationships with local government and future customers. Huawei's training activities have also facilitated knowledge transfers and spillovers to the local telecommunications sector; particularly through subcontractors hired for 'managed services' contracts. This research sought to understand the role of Huawei training centers in Kenya and Nigeria. Existing academic literature often focuses on their CSR programs because information on these is much more readily available online. However, the vast majority of people who attend these training centers in Kenya, Nigeria, and elsewhere, are there as customers or employees.

The following policy brief explains the function of Huawei training centers with respect to customers and clients. It then touches on third party training institutions and the aims of its CSR programs. Unintended knowledge spillovers are then discussed in the final section. I argue that Huawei, like its competitors, treads a fine balance between training local engineers and keeping control of its intellectual property. Nevertheless, knowledge transfers have occurred and there are new business opportunities that stand as both a complement and a threat to Huawei's future profits.

Fieldwork included 41 interviews with staff and experts from Huawei, ZTE, Ericsson, Nokia Alcatel, Cisco, Independent Channel Partners, Kenyan and Nigerian University lecturers and students, IT managers from institutions that had purchased Huawei Technologies, World Bank project managers, and ICT (Information and Communications Technology) policy makers in the Kenyan and Nigerian governments.<sup>1</sup>

### HUAWEI TRAINING CENTERS

HUAWEI'S TRAINING CENTERS ARE PRIMARILY AIMED AT the following three groups:

- 1. Customers:** Training is aimed at employees from the companies (e.g. carrier staff) that will be in charge of overseeing the technologies they are buying from Huawei. However, training is usually limited to no more than a week or two and there are plenty of equipment sales in which Huawei does not include training.
- 2. Subcontractors:** Huawei holds managed services contracts with several operators, a growing area of business for all OEMs in Kenya and Nigeria. Huawei often subcontracts the bulk of this work to smaller local firms. For this, subcontractors

need training on how to install and troubleshoot the equipment as well as health and safety principles.

3. **Channel Partners:** Channel partners are third party groups or individuals that market and sell products, services, or technologies for a manufacturer or service provider via a partnering relationship. In the case of telecommunications in Africa, this involves local independent teams of engineers and technicians who traditionally sold on behalf of Cisco but are now increasingly working with Huawei as well. Whereas many had to pay for their own training in Cisco qualifications, Huawei invests in retraining them in Huawei’s technologies and provides regular support to help them win contracts.

Although Huawei Kenya representatives said they did not keep any digital records of who they trained at their Nairobi training center, they estimated training roughly 1,000 people in 2017. There are four lecturers at the Nairobi center, all of whom are Kenyans. While some interviewees in Kenya complained

clients in other parts of East Africa either travel to Nairobi or to Huawei’s Malaysia or Shenzhen campuses.

### THIRD PARTY TRAINING AND CSR

ASIDE FROM THEIR OWN TRAINING CENTERS, Huawei also has three forms of partnerships with outside institutions:

1. **HANA:** (Huawei Authorized Network Academy) these are located in local university campuses and run by the Carrier arm of Huawei.
2. **HAINA:** (Huawei Authorized Information and Network Academy) these are located in local university campuses and run by the Enterprise arm of Huawei.
3. **HALP:** (Huawei Authorized Learning Partner) is the status given to an independent training institution that is authorized to teach for Huawei certification, such as the African Advanced Level Telecommunications Institute (AFRALTI) in Nairobi.

The HANA and HAINA Labs are funded by Huawei and aimed at incentivizing universities to promote certifications in Huawei technologies. As a Huawei spokesperson explained, “We train university students in the hope that they might become future customers, much like Cisco. We currently offer these training programs for free to universities, although the students may still pay a fee to their university as part of their tuition. We intend for these qualifications to be equivalent to an employer backed certification that they might do as an elective or as part of their coursework, for example.”

These enjoyed mixed success. The only HANA center in Kenya, at the University of Strathmore, was built in 2013 but operated for less than a year. The HAINA center, built in 2016 at the University of Nairobi, seemed to still be functioning in the Summer of 2018. Meanwhile, the independent teaching institution, AFRALTI, was very successfully teaching Huawei systems to third party individuals and institutions. It also competes for contracts to teach those third-party groups (e.g. local police) on how to use Huawei technologies (e.g. radios), but a senior representative at AFRALTI said Huawei’s Kenya office rarely competed with them for these training contracts. He asserted that “training is not really Huawei’s calling,” as Huawei is primarily focused on the sales of the equipment.

Huawei also runs a number of CSR programs through its training centers that have been well documented (cf. SAIS-CARI Policy Brief by Ben Tsui). CSR training is often primarily about networking for the participants and raising one’s public profile for the company.<sup>11</sup> A Kenyan engineer for Ericsson

**Table 1:** Huawei’s Training Centers in Africa

City	Country	Year Established
Abuja	Nigeria	2004 <sup>2</sup>
Cairo	Egypt	2005 <sup>3</sup>
Tunis	Tunisia	2006 <sup>4</sup>
Nairobi	Kenya	2008 <sup>5</sup> and 2017 <sup>6</sup>
Johannesburg	South Africa	2008 <sup>7</sup>
Luanda	Angola	2008 <sup>8</sup>
Kinshasa	DRC	2012 <sup>9</sup>
Rabat	Morocco	2012 <sup>10</sup>

about language barriers during Huawei training courses taken back in 2007 and 2008, it is likely that language barriers are no longer a problem. Kenyan lecturers are periodically sent to China for up to two months at a time to learn about new software and hardware technologies at Huawei’s Shenzhen campus. As Nairobi is the training center for all of Huawei’s East African operations,

argued that Huawei's CSR programs appear to have achieved this very objective, insofar as Huawei has some of the strongest government relations in the industry. In particular he pointed to the relationship that Huawei has successfully developed with Safaricom over the years.

Similarly, in Nigeria, Huawei's CSR programs have involved even more direct relationships with local government officials. In 2019, Huawei launched the ICT for Change program which trained 2,000 university students and 1,000 civil servants in their Abuja Training Centre. Local news articles published at the conclusion of the ICT for Change program highlighted praise by the Nigerian government for the training Huawei had provided to civil servants from over 100 Nigerian ministries, departments, and agencies.<sup>12</sup>

### KNOWLEDGE SPILLOVERS TO SUBCONTRACTORS

I DEFINE 'SPILLOVERS' AS THOSE MOMENTS where employees take skills learned from working with international firms and later set up their own profitable enterprises independently; sometimes cutting the international firm out of the business in the process. Because spillovers are not among international firms' intended goals, I consider spillovers to be qualitatively different from 'knowledge transfers' and 'training'.

One of the most promising areas for spillovers to occur in Kenya and Nigeria's telecommunications sector is among subcontractors. In both countries, OEM staff spoke of the recent swell in small local firms selling them services as part of managed services contracts. Huawei Kenya estimated that in 2018 it was contracting out to roughly 2,200 such personnel, and in 2016 paid US\$ 40 million to local sub-contractors. In Nigeria, older construction firms like Interkel moved into the telecommunications sector as managed services contracts increased and new firms such as Hatfield emerged almost overnight in response to the new opportunities.

The concern among the OEMs is that once subcontractors have been trained, they will side-step the OEMs to work directly for the carriers. A spokesperson for Huawei Kenya said that on one occasion Safaricom had tried to hire subcontractors directly, cutting Huawei out, but after a fatality in 2017 Safaricom had been more cautious. Nevertheless, a mid-level Nigerian engineer at Huawei's Lagos office predicted that it could be just three to five years before subcontractors began to contract directly with the carriers in larger numbers, cutting Huawei out in the process.

### STAFF TRAINING AND SPILLOVERS

HUAWEI AND OTHER FIRMS have also trained full-time staff members who have then gone on to set up their own firms. For instance, Kilimall is an e-commerce company started by former Huawei Kenya employees from China. Kilimall began operations at a time when Amazon and Alibaba had not yet entered African markets and Jumia was only just beginning in Nigeria. The company remains headquartered in Kenya, but now also operates in Nigeria and Uganda, employing dozens of local technicians and sales representatives in each location.

Huawei's Kenya office also had one local engineer, John Tanui, who joined as a junior staff member and rose to become Huawei Kenya's deputy CEO. Tanui left Huawei in 2015 and went on to lead the Kenyan Government's flagship innovation development project, Konza Technopolis. It is hard to say whether Tanui is the exception that proves the rule or whether company culture has shifted since Huawei first arrived on the continent, but certainly it is possible for local staff to occupy senior positions that can then have positive spillover effects.

Lastly, the high salaries paid by international OEMs was cited as another barrier to spillovers. An engineering professor at the University of Nairobi claimed that because their salaries would always be higher than local firms' salaries, their best graduates would ultimately rotate around companies like Cisco, Ericsson, Huawei, and Nokia, without ever going to work for the smaller, local operations where they might be able to help build local capacity. Certainly, most local engineers I interviewed had moved back and forth between the four main international OEMs as their careers progressed – in one case, starting at Nokia, leaving the firm for Huawei, then returning to Nokia at a higher level.

### CONCLUSION

THE TELECOMMUNICATIONS SECTOR is bound to keep growing in Africa. Not just in the continent's biggest economies like Kenya and Nigeria who are already experimenting with 5G, but especially in poorer areas that are yet to build 2G and 3G networks.

### POLICY RECOMMENDATIONS

#### 1. KNOWLEDGE & TECHNOLOGY TRANSFERS

*Both countries' current administrations should continue to prioritize projects like Konza Technopolis and other SEZs. Kenya's Konza Technopolis is projected to function as both a special economic*

zone (SEZ) and a technology research hub. Despite setbacks, Konza is a promising opportunity to facilitate domestic knowledge transfers and innovation. Nigeria is also experimenting with SEZs but with a less explicit focus on technological development.

**2. LEVERAGING MARKET ACCESS**

*African countries seeking to move up the value chain should leverage market access against foreign companies collaborating with local African firms.* Chinese tech firms have proven that using this mechanism can facilitate knowledge and technology transfers.

**3. LOCAL INVESTMENT VS. REPATRIATION OF PROFITS**

*During interviews, Kenyan and Nigerian government officials suggested that their governments should adopt a tax regime similar to South Africa's where foreign technology firms are forced to reinvest a proportion of profits locally.* ★

**ENDNOTES**

1. All interviews were confidential; the names of interviewees are withheld by mutual agreement.
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