

China's Telecommunications Boom in Africa: Causes and Consequences

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ALFRED WONG, SEP 21 2015

Africa is currently experiencing a mobile revolution. Mobile phone subscriptions quintupled from 90 million in 2007 to 475 million in 2013, and is forecast to rise further to 930 million by 2019.^[1] Chinese telecommunication companies, specifically Huawei and ZTE, play a significant role in this due to their rapid expansion in the continent. This made Huawei the largest telecoms equipment provider in Africa in 2012, and ZTE the fifth-largest.^[2] This essay will explore the business and political causes of China's telecommunications boom in Africa, as well as the economic, developmental and political consequences.

Telecommunications refers to the industry that provides mobile and fixed-line telephony, television, and Internet access and includes network operators and equipment providers. Huawei and ZTE are equipment providers, supplying switches, transmission lines, terminals, and other products to network operators as well as individual companies and consumers. Today, both companies self-classify as "solutions providers," meaning they provide services as well as products. Huawei Technologies (???) was founded in 1988 by Ren Zhengfei, and is today the largest telecommunications company in the world. Huawei entered Africa in 1998 with its first office in Pretoria, South Africa, and currently is involved in projects in 40 African countries.^[3] Huawei is also one of the few non-state-owned Chinese companies to become first-in-class internationally.^[4] ZTE Corporation (???) was founded in 1985 and is the second-largest telecommunications company in China, as well as Huawei's biggest Chinese rival in Africa. ZTE is a majority state-owned enterprise, with offices in 26 African countries.^[5]

The Business Model

Huawei and ZTE have several crucial advantages over its competitors in Africa that enable them to win and keep government and network operator contracts.

Pricing

Both companies consistently price lower than their rivals in Africa like Ericsson, formerly the largest telecoms equipment supplier, and Nokia. Huawei was the first Chinese telecoms firm to enter Africa, and thus enjoys a first-mover advantage that allows it to price 5-15% lower than its Western counterparts. ZTE arrived later than Huawei, and thus needed to price 30-40% lower. According to Caixin Century Weekly, "price remains Chinese companies' biggest core competitive advantage."^[6] Despite this, Huawei is still able to generate profit margins up to 10 times greater than in China. Exceptionally lower prices may also have detrimental effects on corporate reputation, as ZTE's pricing model has caused its products to be viewed as being of lower quality.^[7]

Partnerships

Both companies pursue partnerships with local African network operators to better understand the African market. These partnerships result in wider and cheaper infrastructure networks, including joint base stations in rural areas, which are also more reliable because of Huawei's and ZTE's long-term maintenance services for their clients. Local partners also accelerate innovation at Huawei and ZTE, as the Chinese companies are thus able to adapt products

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to the local environment. This is exemplified by Huawei establishing R&D centres in Nigeria and South Africa to “pioneer local, customised solutions.”^[8]

Customer Service and Willingness to Take Risks

Both companies are highly responsive to clients' and consumers' concerns. According to Wilson Yang, former head of Huawei's operations in West Africa, responsiveness to customers was “24 hours a day, seven days a week.” This gained Huawei a reputation for reliability as well as close relationships with decision-makers, enabling its rapid expansion in Africa.^[9] Both are also willing to undertake low-profit and risky operations shunned by Western companies, to grab market share early for future competitive advantage as well as to build corporate reputations. This is enabled by the abundance of Chinese skilled labour willing to work hard at low salaries.^[10] The ultra-competitive market in Chinese telecoms subcontractors also means that Huawei and ZTE can outsource the most difficult parts of their operations to other cheap, reliable Chinese companies.^[11]

The Role of the Chinese Government

Underpinning Huawei's and ZTE's competitive advantages is the strong support from the Chinese government for their rapid expansion into Africa. This support is based on the government's 'go out' strategy beginning in 1999, to encourage Chinese enterprises to invest, export and compete outside China. The resulting benefits to Chinese companies include the easier competition abroad, the new markets for growth, and the adoption of foreign management practices.^[12] Telecoms is a “core investment sector” in the 'go out' strategy.^[13]

Credit

The primary source of government aid to Huawei and ZTE is via export credit facilities from the Export-Import Bank (China ExIm) and the China Development Bank (CDB). These facilities are loans provided by CDB or China ExIm to a Chinese exporter's foreign customers for the purpose of purchasing the Chinese firm's products, which is repaid either directly to CDB/China ExIm (export buyer credit) or indirectly via the Chinese exporter (export seller credit).^[14] In 2009, CDB provided ZTE and Huawei with \$15 billion and \$30 billion respectively in export credit, while China ExIm provided \$10 billion for ZTE.^[15] In 2012, ZTE's loan facility from CDB was increased \$20 billion.^[16] The largest single loan of this type was \$1.5 billion in 2006 from CDB and China ExIm to Ethiopia's state monopolist network operator Ethio Telecom, which then awarded a large telecom contract to ZTE.^[17] However, according to Li Ruogu, President of China ExIm, these credit facilities charge below-market rates: often 200-300 basis points over LIBOR, compared to typical market rates of 1500 basis points over LIBOR.^[18] In response, Huawei points out that only a small fraction of these are actually used: in 2005-12, Huawei's customers used only \$2.9 billion of the export credit available from CDB and ExIm.^[19] While export credit is provided by most countries, China provides it on an unparalleled scale, with available credit exceeding the annual revenues of ZTE and Huawei. Government credit thus constitutes a clear advantage for Huawei and ZTE in winning contracts.

Diplomatic Aid

China's Africa policy helps support Chinese telecoms companies' expansion into Africa. When Chinese leaders visit African countries, their delegations often include Huawei and ZTE executives, who are then able to build high-level relationships with African governments.^[20] This provides an advantage in winning contracts by both the government as well as private network operators, as the buy-in of political elites in a business plan increases support from other local actors.^[21] Another important source of diplomatic aid is inter-governmental tied loans between China and African countries. These are loans provided by Chinese financial institutions like CDB and ExIm to African governments, but which must be used only to buy equipment from Chinese companies.^[22] This essentially leads to guaranteed business for China's telecoms companies. However, these loans are sometimes originally provided by the Chinese company, rather than a government subsidy, and are worth up to \$5 billion a year.^[23]

Economic, Developmental, Political and Strategic Consequences

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The Economic and Developmental Impacts

The African mobile revolution has brought about significant economic and developmental benefits. Telecoms is a core infrastructure sector which has strong multiplier effects on the rest of the economy. Accounting for these effects, the African mobile industry directly and indirectly contributed 5.4% to the continent's GDP in 2013. Several examples illustrate the breadth of these benefits. First, mobile telephony enables delivery of basic healthcare to underserved populations, reducing infant and maternal mortality by disseminating essential prenatal information. Second, smallholder farmers are connected by mobile services to markets, prices, and new agricultural techniques. Third, mobile banking has brought financial services to previously unbanked populations, with 52% of live mobile money services in Sub-Saharan Africa.^[24] The developmental benefits of mobile telephony is aptly summarised by Aker and Mbiti, 2010 as "(bringing) new possibilities to the continent. Across urban-rural and rich-poor divides, mobile phones connect individuals to individuals, information, markets, and services."^[25]

The mobile revolution in Africa was enabled by China's telecommunications boom in Africa, which increased mobile penetration and network coverage. The advent of Huawei and ZTE in Africa have made possible the widespread provision of low-cost and relatively reliable telecoms equipment, even in remote, rural areas without prior coverage. The availability of cheap credit to build telecoms infrastructure also helps alleviate the shortage of domestic capital in many African countries. For example, Ethiopia's Ethio Telecom received \$3.5 billion in Chinese loans in 2006 and 2011, which enabled ZTE to help it increase mobile network penetration from 900,000 users in 2006 to 17 million in 2012.^[26] The International Telecommunication Union predicts that mobile-broadband penetration will reach 20% by the end of 2014, from 2% in 2010. Mobile-cellular penetration will reach 69% in 2014.^[27] While Huawei and ZTE were far from the sole architects of this success, they played integral roles in bringing it about.

However, Huawei and ZTE have also been criticised over the quality of its products and services. ZTE's networks in Ethiopia and the Democratic Republic of the Congo (DRC) are reputedly less extensive and less reliable than competitors, despite being cheaper.^[28] This is likely because ZTE was contracted for reasons other than competitiveness, such as diplomatic ties, cheap PRC financing, and lack of domestic competition. In the case of DRC, ZTE entered the market via its local subsidiary Congo Chine Télécoms due to then-President Kabila's desire to increase Chinese investment, as well as a concessional loan of \$12.5 million from China ExIm.^[29] The low-cost product strategy which helped spread basic mobile telephony across Africa also hinders maturation in the African telecoms and mobile market. For example, many of the cheap Chinese phones in Africa are so-called 'shanzhai devices' (山寨手机), which are unable to access the Internet due to the built-in lack of International Mobile Equipment Identity (IMEI). This slows mobile Internet penetration in Africa as consumers would need to invest in new phones to access it.^[30]

Political

Huawei and ZTE adhere to China's overall 'no strings attached' policy of economic relations, which along with Beijing's diplomatic aid and cheap credit ease their expansion in Africa. However, this also exacerbates issues of corruption and state surveillance in certain African countries. An example of the former is ZTE's 2006 contract with Ethiopia's Ethio Telecom. It has been criticised by the World Bank for the lack of competitive tender, lack of adequate measures of quality and competitive pricing, and for "awarding such a large contract to one supplier."^[31] The anticompetitive factors which allowed ZTE to obtain the contract exacerbated these problems. These include the influence of personal relationships, or 'guanxi' (关系), between Chinese and Ethiopian decision-makers, and the Chinese government's provision of cheap credit.^[32] The usage of Chinese telecoms equipment to facilitate African governments' repression of civil society and opposition is another alleged political impact of China's African telecoms boom. Human Rights Watch has accused various telecoms equipment companies, including Huawei and ZTE, of providing the Ethiopian government with network-control technology used to silence dissent.^[33] Freedom House and the Norwegian Peacebuilding Resource Centre have also documented examples of Chinese telecoms equipment being used by the Zimbabwean and Zambian governments^[34] for censorship, Internet surveillance, and jamming shortwave radio.

Strategic

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China's telecoms expansion in Africa fits into Beijing's Africa policy by increasing Chinese political and economic influence in key African states. A 2009 report by Executive Research Associates argues that significant factors in the CCP's selection of African states in which to promote Chinese telecoms firms include whether the state is a "coastal country...strategically straddl[ing] main shipping routes and strategic choke-points." and whether it provides access to markets, energy or natural resources.^[35] Major projects by Huawei or ZTE in an African state enable local politicians to claim that their governments brings economic and developmental benefits, which in turn ingratiates those politicians to China. Examples of these strategically important states with Chinese-dominated telecoms sectors are Nigeria and Angola.^[36] There have also been allegations that the Chinese government have intelligence and cyberwarfare motives in supporting Huawei and ZTE, most notably by US intelligence officials and think-tanks.^[37] They point to the close ties between the Chinese government and its 'national champions' Huawei and ZTE, the military background of Huawei's founder Ren Zhengfei, and Huawei's contracts with the People's Liberation Army in the 1990s.^[38] However, there has been little direct evidence that either Huawei or ZTE act on behalf of Chinese military and intelligence.

Conclusion and Policy Recommendations

China's telecoms boom in Africa was driven firstly by Huawei's and ZTE's innate competitive advantages in pricing, partnerships and customer services, and secondly by financial and diplomatic support from the Chinese government. The rapid rise of Huawei and ZTE in Africa has yielded considerable benefits for African consumers, businesses and economies, and plays a key part in enabling the "mobile revolution."

While the rise of Chinese telecoms in Africa constitutes part of China's Africa policy, this does not necessarily mean that the entry of Huawei and ZTE into African states pose a military or cybersecurity threat. The greater concern for African states should be the criticisms of both companies for the quality of their products, and for their negative impact on local politics *vis-à-vis* corruption and state repression. Therefore, African policymakers with jurisdiction over or interest in their country's telecoms market should:

- 1. Actively push for a telecoms deal between national network operators and Chinese telecoms companies, with as generous a loan as can be obtained from Chinese policy banks.**

The magnitude of the possible economic and developmental benefits from participating in the Chinese telecoms boom is undeniable. Africa is the most underdeveloped mobile market in the world. This means that there is huge potential for high returns on investment in telecom infrastructure. Huawei and ZTE have a record of low cost and generally reliable telecoms products and services, which can greatly benefit Africa. China's willingness to finance this investment on affordable terms should also be taken advantage of.

- 2. Appoint an independent telecommunications industry ombudsman charged with firstly, preventing, investigating and reporting corruption in the telecoms industry, and secondly, protecting consumer interests in telecoms products and services.**

At the same time, other countries should learn from the mistakes and problems plaguing the earlier projects undertaken by Huawei and ZTE in Africa. An independent telecoms ombudsman with the mandate and the power to fight corruption and uphold consumer interests would create an institutional disincentive for telecoms companies to undermine the quality and growth potential of national telecoms sectors for corporate profit, or for politicians to do so for popular support. The ombudsman should have every power of oversight over telecoms projects, and then publicly report on problems discovered.

- 3. Legislate and enforce strict procurement processes that ensure competitiveness and *post hoc* oversight of quality and pricing.**

There is also a need to formally legislate strict standards for public procurement to ensure transparency and improve ease of compliance for telecoms companies. The root cause of the flaws and criticisms in Huawei's and ZTE's projects in Africa thus far have been in insufficiently competitive and politically influenced tenders. Legislating and

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enforcing procurement standards would prevent diplomatic or personal influence from unduly advantaging any company in the tender process. Laws to this regard are also needed because corruption should be prosecuted in the judicial system, which in turn needs a legal basis to convict.

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