Price Power: China’s role in the telecommunications sector of the Democratic Republic of Congo

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I Mobile Telephony Trends in the Democratic Republic of Congo

Mobile phones have gone in a generation from being the exclusive preserve of the rich to a tool used by billions across the globe. By the end of 2007, 3.3bn people, half the world’s human population, were using mobile phones, according to the International Telecommunications Union (ITU).[1] Mobile telephony has proven to be particularly liberating in Africa, where fixed line coverage is still weak to non-existent. In most of the continent, mobile phones have arrived not as competitors to fixed lines but as a long-awaited solution to the frustration of communications isolation. The ITU reported that Africa had shown the strongest growth in mobile phone usage over the previous two years, with an impressive 39% annual subscription growth between 2005-2007, with the result that 90% of all African telephone subscribers today use mobile phones rather than landlines.[2]

Chinese investment in African telecommunications, and information and communication technology (ICT) generally, is growing. The World Bank has estimated that Chinese investment in African ICT totalled around US$3bn from 2001-07, constituting 17.4% of China's estimated African investment total.[3] China's involvement in Africa's ICT sector has, according to the Bank, mainly taken the form thus far of equipment sales to national incumbents, either through commercial contracts or through inter-governmental financing arrangements which are tied to the purchase of Chinese equipment by African telecommunications parastatals. The biggest deal to date was signed in 2006, and is a four-year, US$1.5bn ICT project in Ethiopia, to be undertaken by China's ZTE, Huawei, and Chinese International Telecommunication Construction Corporation (CITCC). ZTE began construction for the project in 2007.[4]

ZTE is state-owned, while Huawei and CITCC have a mix of private and public ownership. All three, however, have access to funds from China's state-owned banks. In some cases, according to the World Bank, these Chinese banks have directly provided the money for Chinese telecommunications equipment to be supplied to African governments. In other cases, Chinese telecommunications companies have been able to finance deals through their own lines of credit. ZTE has a US$500m line of credit with China's Ex-Im Bank, issued in 2004, while Huawei has a US$600m credit from the same bank, issued in 2006, and a massive US$10bn credit line from the China Development Bank, issued in 2004. This money is not simply, or even primarily for Africa though, but is intended to finance these companies' global operations.[5]

The Democratic Republic of Congo (DRC) has an estimated population of 62.6m.[6] This makes the DRC the fourth most populous country in Africa after Nigeria, Egypt, and Ethiopia. South Africa, which comes fifth on the list, has roughly 20m fewer citizens then the DRC.[7] Though blessed with phenomenal natural resources, the DRC has endured governments since independence that have neglected to invest in infrastructure and services, to the detriment of telecommunications and every other economic sector. There were estimated in 2008 to be just 8,000 functional fixed landlines in the whole country (down from 36,000 in 1995), suggesting current fixed line teledensity of 0.01%.[8] The DRC's large population, immense economic potential, and tiny fixed line teledensity have made it an obvious target for international mobile phone operators. Indeed, the country was the first on the African continent to have mobile phones, back in 1986.[9]

Since the late 1980s, however, the DRC has been afflicted by a succession of debilitating political crises. The crises have included: two rival governments, one led by the president and the other the prime minister during the early 1990s, coupled with two massive looting sprees from the armed forces (sanctioned by the president); the arrival of 2m Rwandan refugees plus the then-Rwandan army in the east following the genocide there in 1994; the toppling of the dictatorship of president Mobutu Sese Seko in 1996 by an armed militia backed by neighbouring states; a civil war dragging in nine other African countries during the late 1990s, and the de facto partition of the country during this period into three; the assassination of president Laurent Kabila in 2001; and, more recently, the flight into exile in April 2007 of Jean-Pierre Bemba, the runner-up in presidential elections after a deadly gun battle in the capital between his and the president's troops.

The political turmoil undoubtedly slowed mobile phone telephony penetration – in 2002, it was estimated at just 150,000 people. But the assassination of Kabila the previous year was a political and economic turning point. Joseph Kabila, said to be the dead president's son, was swiftly installed in Kabila's place and immediately both courted Western donors and displayed an invigorating new commitment to the faltering peace process. After much diplomatic work, especially by South African president Thabo Mbeki, in 2002, Kabila signed a landmark peace agreement with his rebel opponents that reunited the country and brought peace to most of it.[10] There followed an uneasy four-year transition period with Kabila as president and his armed foes as vice-presidents, largely financed by the International Monetary Fund (IMF) and World Bank, culminating in multiparty elections which Kabila and his supporters won at the end of 2006.

Despite the political certainties, there was sufficient peace and signs of prosperity for mobile phone operators to risk expanding their businesses, and today there are said to be over 6.3m mobile phone subscribers, giving a mobile telephony penetration rate of about 11%.[11] It is probably more accurate to say, however, that there are over 6.3m sim cards in active use then there are this many users, since many mobile phone users in the DRC have more than one phone. Each phone belonging to a user is typically assigned to a different mobile phone network, enabling the user to talk to people on these networks at intra-network rates, which are cheaper than trans-network rates. Another reason is that phones are coveted as both status symbols and fashion items, and displays by Congolese users of two or more smart-looking handsets in public spaces such as bars and restaurants are commonplace.

Mobile phone operators in the DRC are targeting a penetration rate of 50%, implying five-fold growth to over 30m users.[12] For this to be achieved, mobile phone reception will need to expand further, and the barriers to entry will have to come down further too, to make mobile telephony affordable to more people. Happily for the industry, both of these requirements are indeed happening, and a 50% penetration rate looks distinctly possible within the next decade.

The first requirement for the target to be reached is being delivered in the main by Vodacom Congo and Celtel DRC, the two market leaders in the DRC, which are expanding their already extensive network coverage. At the same time, barriers to entry are coming down because mobile handsets, and particularly those manufactured in China, are becoming cheaper. The least expensive mobile phones in the DRC retailed in Kinshasa at just US$20 in mid-2008, compared to around US$60 in 2006.[13] In addition, as will be explored later, the DRC's mobile phone tariff rates are rising lower than inflation, largely because of the challenge posed to its competitors by the exceptionally low tariff rates offered by Congo Chine Telecom (CCT).

Average revenue per user (ARPU) in the DRC in mid-2008 was reckoned by mobile phone operators to be US$10-15/month. By way of comparison, the ARPU in Nigeria is reckoned also to be around US$15/month[14], and US$20/month in more affluent South Africa.[15] The DRC's mobile phone operators say they reckon most, if not all, affluent Congolese already have mobile phones, and that new growth in mobile phone penetration will therefore have to come from the poor. Since the poor cannot afford to chat on mobile phones as long as can the rich, this implies that average spend will decline as penetration grows. Should penetration indeed grow to 50%, some industry operatives have speculated that ARPU could decline to around US$5 per person per month.[16] Yet even if this happens, overall spend in the DRC on mobile telephony would still be significantly higher then it is today.

A major constraint to future growth in the mobile telephone business, and even more so for the increasingly related activity of internet service provision, is the absence of a national fibre optic backbone in the country, or a connection on the DRC's Atlantic coast to the South Atlantic-3/West Africa Submarine Cable (SAT-3/WASC). The SAT-3/WASC is a submarine communications cable running from Portugal and Spain to India and South East Asia, with connections to several African countries en route.[17] The lack of a fibre optic network forces telecommunications and internet companies to rely exclusively on satellites, which carry less data and cost more than fibre optics.

In 2002, Sweden's Ericsson signed an agreement with the government for the construction of a link to the SAT-3/WASC and a national backbone. Yet, according to a report on telecommunications by the Congolese Senate, the agreement stalled when the DRC government failed to come up with the US$35m necessary to complete the first phase. The total cost of the project was estimated at US$450m.[18] Subsequently, China's Huawei also pitched a proposal to the government to provide a link to the SAT-3/WASC and a national backbone. After much deliberation and delay, not just in the DRC but from other regional governments too, in March 2008 France's Alcatel-Lucent, (which has a 50% stake in China-based Alcatel Shanghai Bell), won a contract to construct a connection between the SAT-3/WASC and the DRC Atlantic port of Muanda. The DRC government is reported to have agreed a second phase of construction by China's CITCC and Alcatel to connect Muanda to Kinshasa, and then for Huawei to install an inter-connection switch in Kinshasa to enable all the private telecommunications and internet service providers to connect.[19] It is not clear, however, whether these agreements have reached the point where actual contracts have been signed. There is also, apparently, a somewhat vaguer commitment from the government to pick Ericson to install a fibre optic cable network across the rest of the country.[20] Despite these new agreements, private sector telecommunications operators have remained sceptical about when progress will be made on the ground, saying the basic problem remains the weaknesses in the structure and functioning of the state's regulatory authorities, which they say will take a long time to resolve.[21] (The regulatory framework for telecommunications in the DRC and its functioning in practice is discussed in more detail in section three).

II The Mobile Phone Operators

In mid-2008 there were five mobile phone operators in the DRC, with talk of two more players preparing to enter the market. The market leader was **Vodacom Congo**, with roughly half the total number of subscribers. Vodacom Congo is a joint venture formed in 2001 between South Africa’s Vodacom International and Congolese Wireless Networks (CWN), which is a subsidiary of the United States-based African Wireless Inc. Vodacom International has a 51% stake, and CWN 49%. CWN had been awarded the DRC’s original national GSM 900 licence in 1999 and had 20,000 subscribers by the time of the merger. Vodacom Congo invested heavily in infrastructure and marketing before launching its new service in 2002, contracting France-based Alcatel-Lucent to install 88 base stations in the capital Kinshasa, Lubumbashi and Mbuji-Mayi, and bombarding the whole country with advertising. The strategy paid off, and the company had over 1m subscribers and a very prominent profile by early 2005. The company has continued to spend heavily on both new investments and marketing, with US$391m reportedly outlaid between 2002 and 2007. By mid-2008, Vodacom DRC had a reported 3.2m subscribers, and had extended coverage to around 240 urban areas in all eleven provinces, with over 470 base stations installed by Alcatel-Lucent and more than 100 satellite links. Since 2006, Vodacom DRC has been rolling out infrastructure in the country’s big cities intended to enable mobile data services at up to 384kb/s.[22]

Table One: Mobile phone operators in the DRC

Operator	System	Launch	Subscribers[23]	Annual change
Vodacom Congo	GSM 900	1999	3,178,000	57%
Celtel DRC	GSM 900	2000	2,134,00	25%
CCT	GSM 900/1800	2001	609,000	52%
Millicom (Tigo)	GSM 1800	2001	395,000	863%
Supercell	GSM 900/1800	2002	47,000	-35%
Total			**6,363,000**	**50%**

Source: Buddecom (2007), page 8.

Number two in the pecking order was **Celtel DRC,** with 2.1m subscribers in 2007[24], and an estimated 2.4m in 2008.[25] The parent company is the Netherlands-based Celtel, which was bought by Kuwait-based MTC for US$3.4bn in 2005.[26] Celtel DRC has used Sweden-based Ericsson to install its base stations, which provide mobile coverage in every province. Today, Celtel's national coverage is extensive, though somewhat less so than Vodacom's. In mid-2007, Celtel borrowed US$320m from the World Bank's International Finance Corporation (IFC) to expand its presence in five African countries, and nearly half the money was earmarked for the DRC. Later in the year, Celtel launched a new service throughout Africa that immediately proved popular, doing away with roaming charges between countries, thereby enabling subscribers to call other African countries at local rates.

The third biggest company in DRC is **CCT**, with around 640,000 subscribers in early 2008, which will be looked at in detail in part Four.

Close on CCT's heels was **Tigo**, once called Oasis, which was bought by Luxembourg-based Millicom in 2005 for US$35m. Tigo was dying when Millicom took it over, with only 50,000 subscribers, but the company has since received a considerable capital injection and has fought hard for market share, with the result that by early 2007, subscriptions had risen to 395,000.[27] By April 2008, the company claimed this had risen to 570,000.[28] In mid-2006 Tigo signed with Huawei as its equipment provider, tasking Huawei with providing more than 500 new base stations covering 85% of the population. The move was an integral part of Tigo's push for greater market share, to which it added in 2007 the introduction of per-second billing, which the company says is less expensive than the per minute billing of its competitors. Another of Tigo's innovative features introduced in 2008 was its offer of downloads of popular Congolese songs onto its users' phones. Musicians have an enormous national following in the DRC, and this has been successfully exploited by a number of other business sectors, and most notably the beverage industry, but never before by the telecommunications industry.

Bringing up the rear is **Supercell**, which operates only in the eastern provinces of North and South Kivu, and is affiliated with MTN-Rwandacell. MTN-Rwandacell is a joint venture between South Africa's MTN and Rwandan investors that enjoys a lucrative – and expensive – mobile phone monopoly in Rwanda. Supercell had only 47,000 subscribers in 2007, and was scheduled during 2008 to be taken over by MTN, a move which was expected to be followed by substantial new investment by the South African mobile phone giant, with the aim of providing competition nationally to the DRC's established market players.

III The Mobile Phone Industry and the Congolese State

A long-awaited Telecommunications Law passed in 2002[29], replaced the previous Telecommunications Act, which had been in force since 1940. The main innovation of the new law was to create a new institution, the Post and Telecommunications Regulatory Authority (ARPTC), which took over the responsibility to regulate the telecommunications sector from the Congolese Office of Post and Telecommunications (OCPT), a parastatal under the authority of the Ministry of Post and Telecommunications. The ARPTC, by contrast, falls under the authority of the Office of the President.[30]

The reform was in keeping with an international trend over the past two decades, which has seen semi-autonomous regulatory bodies in the services sector springing up all over the world. To be effective, these new regulatory bodies require sufficient political clout to tell government departments what to do, if necessary, so there was some wisdom in the Congolese context of housing the ARPTC in the office of the country's most powerful institution, increasing its chances of holding its own in a tussle with the OCPT.

That was the theory, but in practice a host of problems have arisen. A major difficulty, by common consensus, is that the 2002 Telecommunications Law is poorly drafted and even contradictory in places, resulting in ambiguities of interpretation, particularly regarding the key question of the division of powers and competencies between the ARPTC, the OCPT and the ministry of communications.[31] The ambiguities have created opportunities for veteran, wily bureaucrats in the OCPT to stymie the bureaucratically inexperienced ARPTC's efforts to carve out its rightful regulatory territory. Adding to the difficulties, during the transitional government period until 2006, the minister of communications was from a different political camp to the regulator. The result, according to insiders, has been a long-running, debilitating turf struggle between the ARPTC and OCPT, sapping much of the energy they needed to do their actual work.[32]

Christian Katende, the regulator, is personable and well-informed, but his organisation's capacity shows little sign of being sufficient to regulate such a complex sector, in such a complex country. In mid-2008, when the ARPTC was three years old and with 60 staff, it still lacked a website of its own, and struggled to provide information about even straightforward matters such as how many subscribers each mobile telephone company has.[33]

While acknowledging that capacity needs to be built at the ARPTC, private sector mobile telephone operators have argued that one of the main reasons the ARPTC is so weak is because the legislation that created it is fundamentally flawed to the point that it requires re-drafting.[34] The government for several years resisted this conclusion, in large part because it finds the whole process of drafting legislation highly challenging, even for annual, core items like the national budget. The drafting problem is in part one of limited capacity within ministerial bureaucracies, which often lack the relevant legal skills to write sufficiently watertight legislation. Another factor is the nature of politics in the DRC itself, in which government ministers are famed for devoting their efforts and energies more to intrigue than governance.

This tendency was particularly marked during the 2002-2006 'transitional phase' referred to in Section One, when the government was composed of rival factions who had until recently been at war with each other, all jockeying for position and resources in the build up to general elections in which the winner would take all. Following Kabila's 2006 election victory, the new government that followed was also a coalition, but at least composed of partners in a professed alliance, who are less mutually hostile then were the constituents of the previous transitional government. Voters and donors had hoped this would result in improved governance, but the new 60-member cabinet, presided over by Antoine Gizenga, the octogenarian prime minister appointed by Kabila, has proved too large for its own good.[35] Ministers have struggled to agree and implement anything much of substance, to the growing derision of Congolese political opinion, and not much legislation has made it to the National Assembly for consideration.

Finally, in late 2007 the government accepted the need for new telecommunications legislation, and in March 2008 brought in a Southern African Development Community (SADC) telecommunications expert to assist in the process. Private sector operators have expressed hope that new draft legislation can be in place by the end of 2008, and a new law in place by 2009.

Mobile phone operators are probably right that there is little chance of resolution of the main regulatory and capacity challenges facing their industry until a new law is in place. But even good laws must be implemented to be effective, and unless or until the state's capacity to govern in general can be bolstered, it may be that even if the legislative framework improves, the regulatory regime will remain *laissez faire* in practice.

This is troubling, since several challenges to the sector clearly require the intervention of the regulator. One such challenge, admitted by the ARPTC, is that the 900Mhz frequency bandwidth, which all the DRC's mobile phone services use, is overcrowded. This will be difficult to sort out, as all these phone services can be expected to push hard to retain their existing rights.

Another challenge requiring state intervention concerns Third Generation (3G). 3G mobile phones bring broadband data speeds and services to mobile phones, and enable far greater synergies between mobile telephony and the internet then are currently available. All existing DRC mobile phone services are Second Generation (2G). Some of the providers are ready to move to 3G, but so far there is no sign of an auction for licences from the state. Katende has spoken of a 3G licence auction by the end of 2008, but private operators have reacted sceptically, predicting that this too will wait until new legislation is in place.

Then there is the issue of fibre optics, which was considered at the end of Section One. While there appears to be sufficient private sector interest and capital to construct a fibre optics backbone in the DRC, and – finally – the government has taken some key decisions about which private sector operators to give the work too, it still remains to be seen whether DRC government payments to these operators will materialise as promised.

Yet, for all its drawbacks, the *de facto* liberalism of the DRC's regulatory environment in telecoms has had its advantages, particularly for consumers. The main advantages have been that foreign investment and competition have been welcome from the start. Foreign investors have been required to bring in local equity partners, but have been allowed to retain control of management, and to repatriate profits. This has reassured foreign operators in what is after all an unusually difficult political environment, and encouraged them to invest the hundreds of millions of dollars they already have in the country.

With five operators, and talk of two more at the wings, the mobile business environment in the DRC is highly competitive, and this has kept prices for consumers lower than they would probably otherwise have been. Table Two shows that the cost of intra-network, pre-paid calls on the main networks in the DRC, Nigeria and

Rwanda are broadly the same, with South Africa's being substantially higher. But in the DRC, as in South Africa, competition between service providers means local phone users have the option of a significantly cheaper network. In neighbouring Rwanda by contrast, MTN Rwandacell has an effective monopoly, leaving consumers with no choice but to accept its tariffs.

Table Two: Selected African intra-network, pre-paid mobile tariff rates, June 2008 (US cents/second)

Network	Peak	Off-peak
CCT	0.30	0.20
Celtel DRC	0.42	0.30
Tigo	0.35	0.31
Vodacom Congo	0.43	0.30
MTN Rwandacell	0.40	0.35
Vodacom South Africa	0.62	0.33
Cell C South Africa	0.32	0.16
MTN Nigeria	0.53	0.43

Sources: CCT, Tigo and Celtel promotional literature, official websites of MTN Rwandacell, Vodacom SA, Cell C, Vodacom Congo and MTN Nigeria

Private sector operators have reported their frustration with the legislative and regulatory framework under which they operate, but relations between the authorities and the sector as a whole were said by both sides to be relatively amicable. One risk identified by mobile phone operators, however, is of the cash-hungry government over-estimating their profitability, and using this to justify a bid to hike its tax take from them. The operators were referring to an accusation made against them by the deputy minister of communications in April 2008, that they were evading tax, based on a report written by a commission of the national Senate and published in May 2008. The report proclaimed itself 'scandalised' that mobile phone operators were apparently paying so little tax, and stated its view that this was due to fraud.[36] The report had particularly harsh words for Tigo, which it accused of having an illegal company ownership structure.[37] Alarmed, the directors of Vodacom Congo, Celtel DRC and Tigo, but not CCT, hit back at the report and the deputy minister, holding a joint press conference in April 2008 to advertise what they said were their actual tax contributions. According to the directors' press statement, between them they paid US$40.9m in tax during the first quarter of 2008, which they indicated that they considered ample. There has been no move since then by the authorities to adjust the companies' tax rates, but they say they are remaining vigilant nonetheless.

Another important aspect in the government's relations with the mobile telecommunications sector is that the state has a direct shareholding in one of the companies operating within it. The OCPTC holds a 49% stake in CCT, with the 51% balance held by Chinese telecommunications giant ZTE. As will also be explored further in the following section, opinion is divided on the impact this relationship on the state's dealings with the sector as a whole. CCT officials were unsurprisingly adamant that the OCPTC's holding a stake in their company afforded it no unfair competitive advantage. Indeed, one CCT official privately argued that it left the company at a disadvantage, because instead of injecting equity, the Congolese state was “always asking for money”.[38] Two of CCT's main competitors said that because of the extreme weakness of the state, they did not regard the OCPTC's stake in CCT as offering it a significant advantage, with one agreeing with the view that it was probably more of a disadvantage then an advantage. Another significant competitor disagreed, however, alleging that CCT's relationship with the Congolese state had enabled it to negotiate significant, hidden, and probably illegal tax breaks. According to this informant, it is these secret tax breaks that explain why CCT declined to join its peers at the April 2008 press conference about their tax contributions.[39] CCT has denied the charges.

IV Chinese Involvement in the DRC's Telecommunications Sector

The companies, their economic and political objectives

As we have seen, there are two Chinese companies involved in a significant way in the the DRC telecommunications sector: ZTE and Huawei. In addition, several of the other international companies operating in the sector have major Chinese subsidiaries, such as France-based Alcatel-Lucent, which is a 50% shareholder in China-based Alcatel Shanghai Bell.[40] ZTE, which was founded in 1985, is a majority state-owned telecommunications equipment manufacturer and installer, though its management is said, to a degree, to have been privatised.[41] The company, which employs over 30,000 people worldwide, has a global presence, operating in Asia, Europe, the Middle East, South America, North America, Australia and Africa. ZTE is growing fast; it was reported in mid-2008 that the company's optical networking sales grew 120% in the final quarter of 2007, compared to the same period of 2006, and that its products were being deployed by over 250 network operators in more than 90 countries.[42] Huawei also manufactures and installs telecommunications equipment, but is reported to belong more clearly than does ZTE to the Chinese private sector, enjoying a higher degree of managerial independence in consequence.[43] The company was founded by Ren Zhengfei in 1988 and began life providing telecommunications for the Chinese army. Huawei took a while to expand into overseas markets, but by 2004, its overseas sales were higher than those in the domestic Chinese market. In 2006, Huawei's global contract sales reached US$11bn, 34% higher than in 2005, 65% of which were earned in overseas markets. Huawei works with 35 of the world's top 50 telecommunications operators, including British Telecom, Vodafone, Motorola, and France Telecom. [44] Huawei was alleged by US's Central Intelligence Agency (CIA) to have supplied the Iraqi government will “illicit” communications in 2000, and has been accused by US-based Cisco of stealing designs for routers. The company has denied both charges. [45]

The economic objective of both ZTE and Huawei's investments in the DRC is to create and grow a market for their products, primarily through the establishment and servicing of new base stations. Circumstances have, however, dictated that the two companies have had to pursue this objective in the country by very different means.

ZTE arrived first in the country, in 2000, during the presidency of Laurent Desiré Kabila. Kabila had been a nominally Marxist guerilla during the 1960s and 1970s[46], fighting the Western-backed dictatorship of Mobutu Sese Seko, and as president had retained a deep mistrust for Belgium, the former colonial power, the United States and France. Kabila made it clear from the outset of his presidency that he wanted good relations with China[47] and China's political leadership, no doubt with an eye on the country's fabulous natural resources, responded positively. ZTE appears to have been encouraged by the Chinese political authorities in this context to form a joint venture with the Congolese government, which it duly did in late 2000.

According to the agreement, ZTE would hold 51% of a new mobile phone operating company called CCT, and the OCPTC the remaining 49%. The 'asset' delivered by the OCPTC in return for its shareholding was an operating licence for CCT. At the same time, China's Export Import (Exim) Bank, in which the Chinese state also plays an influential role, provided a 'concessional' loan of 80m yuan Renminbi to CCT to enable it to establish itself as a business[48], which has principally consisted in purchasing all its equipment from ZTE. ZTE also supplies the bulk of CCT's management, to the chagrin of local trade unions (see Four: 5, below).

ZTE also has an operating licence in Niger, as well as in Kazakhstan and Tajikistan, but elsewhere in Africa supplies equipment *without* operating a mobile phone network of its own.[49] Commenting on the situation, ZTE vice-president Dengming Feng has been quoted as saying:

> 'Our target is not operating companies. We are manufacturers. But it depends, because there are some opportunities to get a licence which are linked to manufacturing and supplying equipment.'[50]

Succinctly stated, it would seem that ZTE's aim in the DRC, as elsewhere in the continent, has been to supply and install equipment, but in order to achieve this, and to fulfil Chinese political promises to Kabila, it was obliged to enter into a joint venture with the OCPTC.

Life in the DRC, by contrast, has been much more straightforward for Huawei. Huawei arrived in the DRC four years after ZTE, in 2004, much freer then ZTE, though still probably not entirely free from politically-motivated obligations to either the Congolese or Chinese government to take on commitments that did not align with its commercial objectives. Huawei won the contract to be Tigo's equipment supplier in 2006, carrying out its first installation for the company in March that year. It is a substantial contract; by mid-2008 Huawei had apparently installed 450 sites, with 80 more coming in this, the first phase of development, which is supposed to be followed by a second phase in which Huawei will install a further 400 sites.[51]

Not content with the Tigo contract alone, Huawei is also bidding aggressively to win the lucrative Vodacom equipment contract from Alcatel. Huawei gave a presentation to Vodacom in early 2008[52], but as of mid-2008 no firm decision had been made by Vodacom, and Alcatel was adamant it still had the Vodacom contract.[53]
In addition, as indicated above Huawei is reported to have secured from the government an agreement that it should install an inter-connection switch in Kinshasa once the capital city is connected to the SAT-3/WASC submarine cable.

CCT and its competitors compared

As Table Two indicates, in mid-April 2008 CCT was the cheapest Congolese mobile phone network for intra-network calls. CCT was also at that time the cheapest for inter-network calls by a considerable margin, as Table Three shows.

Table Three: Pre-paid inter-network call costs, April 2008 (US cents/second)

Network	Peak tariff	Off-peak tariff
Vodacom Congo	0.47	0.47
Celtel DRC	0.50	0.50
Tigo	0.45	0.40
CCT	**0.35**	**0.32**

Sources: Tigo, CCT, Celtel promotional literature, Vodacom Congo website.

CCT's peak tariff in April 2008 of USc 0.35/second implied a tariff of US$0.21/minute. Networks in the DRC earn US$0.15/minute for calls made to their subscribers from other networks. This means that after paying its dues to other networks, just US$0.06/minute was left for CCT from calls made by its subscribers to other networks. In addition, the state collects 18% of the cost of calls from operators in tax, equalling US$0.037/minute. So the final amount left over for CCT after paying other operators and the state during this period was a mere US$$0.023/minute for pre-paid inter-network calls. As Table Four shows, CCT's net profit on inter-network calls during this period was far lower than all its competitors. Indeed, average net profit per minute for CCT's main rivals was US$0.096, more than *four times* CCT's profit. This huge difference has prompted the concern among at least one of CCT's competitors that CCT can only manage this tiny margin because of tax evasion. The operator in question also alleged CCT had secured what it said were illegal tax concessions on its imports of a wide range of goods, including vehicles, and said it had laid a formal complaint about the matter to the authorities. No action has been taken, which the operator claims is due to corruption.[54] CCT and the Chinese embassy have rejected the charges, saying the company pays its taxes in full, but has a different business model to its competitors.[55]

Table Four: Net profit to operator for peak-rate inter-network calls, April 2008 (US$/minute)

Network	Net profit from inter-network calls
Vodacom Congo	0.093
Celtel DRC	0.113
Tigo	0.083
CCT	**0.023**

Sources: Tigo, CCT, and Celtel promotional literature, Vodacom Congo website.

CCT in April 2008 had around 640,000 subscribers, about 10% of the total, making it the DRC's third largest mobile phone service provider. CCT has said its aim is to grow its share of the market to 20% by 2010.[56] The company's strategy to achieve this target is to maintain extreme price competitiveness, improve its marketing and at the same time expand its geographical presence in the country.

CCT began back in 2001 as a Kinshasa-only service, which limited its appeal to many potential subscribers, and has expanded only gradually since. By mid-2008 the CCT network was present in most of the country's big cities, but only patchily in the hinterlands of these cities, and was still not available in every province. In addition, while CCT offers an international call service, many who have tried it have complained that it is of indifferent quality, that compares poorly with the service offered by CCT's competitors.[57]

Despite its professed intention to grow its share of the market, CCT by its own admission is spending less on marketing then its rivals [58], and appears to be investing less in expansion too, and on current growth trends Tigo appears set to replace CCT soon as the third largest provider in the country. That said, CCT appeared well and widely known during the period of research, not just in Kinshasa but also Goma and Bukavu in the east (where CCT is a very new arrival) that CCT was cheaper than everyone else. This is surely good news for a company that itself stresses that price is its main selling point, and may mean that high profile, expensive marketing ploys are unnecessary. As mobile telephony penetrates deeper into the ranks of the Congolese poor, the price sensitivity of the market will surely rise, and CCT will be well placed to benefit. As Table One shows, there was a 52% rise in CCT's subscriptions between 2006 and 2007, and if the company can sustain that sort of growth, 20% market share within two to three years may well be feasible, despite such stiff competition from rival networks.

While it has not thus far been possible to gain access to CCT's financial statements, officials in the company maintained in interview that the company was profitable, with one commenting that “ZTE demands that”. Another added, however, that once loan repayments to the Exim Bank were stripped out, CCT was “not so profitable”, while insisting that the company had created considerable added value nonetheless.[59] ZTE's apparent reluctance to invest heavily in CCT has led to speculation in the DRC that ZTE might be looking to sell. A senior CCT official interviewed for this study denied this was the case, but did say that people had already come with “good offers”, and that if CCT was sold, ZTE would have made a profit on its investment.[60]

Huawei and its competitors compared

Huawei won the contract to supply base stations to Tigo in 2006, its biggest in Africa to date. Tigo officials have indicated the contract was won mainly on price, with Huawei's quote significantly lower than the competition. As well as being price competitive, Huawei appears to have good implementation capacity too, since by mid-2008 Huawei was said to have installed 450 base stations - fast work by anyone's yardstick.

Unlike with CCT, from whom the signals are mixed, Huawei appears unequivocally committed to expanding its presence in the DRC, bidding hard in early 2008 for the lucrative Vodacom contract. At the time of writing, Alcatel still had the Vodacom contract, and a senior official interviewed from the company denied any concern Alcatel might lose it. The official conceded that Huawei was very competitive on price, but cited quality and service as two areas where Alcatel considered itself to have the edge. [61] One senior Tigo official conceded privately that Alcatel might have a point, but there appears little doubt that the company will stick with Tigo.

Vodacom's decision is harder to predict, but at the very least it seems likely that Huawei's pitch will put pressure on Alcatel to bring down its prices.

The Chinese state's role

ZTE's entry into the mobile telephone market in the DRC in 2000 was, as we have seen, strongly motivated by political as well as economic considerations. Eight years on however, things appear to have changed. Interviewed in 2008, the economic councillor of the DRC's Chinese embassy was firmly of the view that Chinese companies should be and were free to make decisions about operations in the DRC on purely commercial grounds. Supporting this contention, it does indeed seem unlikely that the Chinese state would engineer the entry of *two* Chinese companies offering similar products and services into one relatively small market. Were the Chinese state still to be intervening directly, it would surely have been more likely to ask Huawei to stay away, in order to make life easier for ZTE. Moreover, the Chinese state would have been even more likely to intervene in neighbouring Congo Brazzaville, where ZTE and Huawei are in direct competition.[62] Yet in fact there has been no such intervention. For CCT officials, this was the way it should be. As one put it: “We do not need the embassy. We do things ourselves.”[63]

The *laissez-faire* approach of the Chinese government regarding CCT and Huawei stands in apparent contrast to the important role it is playing in the negotiation of a complex and controversial minerals-for-infrastructure deal between the Congolese government and mining parastatal Gécamines on the one hand, and China's Exim Bank, Sinohydro Corporation and China Railway Group Limited on the other. This deal, which was cautiously approved by the DRC's National Assembly in May 2008, gives a new Chinese-controlled joint venture company called Sicomines the rights to copper and cobalt deposits estimated to be worth up to US$90bn, in return for a loan estimated at US$9bn to finance spending on infrastructural work, including new roads, railways, hospitals and universities. All the work will be carried out by Chinese companies.[64] At an economic level, the deal delivers mineral resources for which the Chinese economy has a huge appetite, a new African market for Chinese construction and other companies, plus an interesting project for the liquidity-rich Ex-Im Bank. Politically, if the deal succeeds it will be hailed as proving there is a viable Chinese alternative to typical Western and Bretton Woods institution loans, which have never managed to deliver much infrastructure to the DRC. The implications of this would be enormous, though first the deal must deliver to both parties satisfaction, and it remains to be seen whether this happens. Either way though, there are good economic and political reasons for the Chinese government to try to push the agreement forward, perhaps explaining why, in contrast to its approach to ZTE and Huawei in the DRC, the government has taken a more interventionist stance.

Chinese telecommunications companies and workers' rights, social responsibility, and community outreach

CCT employs roughly 300 people, though the company claims to provide indirect employment to around 10,000 air time and mobile phone vendors. CCT's Congolese employees are unionised, with most belonging to the Confédération des travailleurs progressif (CTP) or the Organisation des travailleurs Congolais (OTUC). Relations between these trade unions and CCT's management have been unhappy, and the unions went on strike over pay and working conditions in September 2007. The CCT has claimed CCT's initial response to the strike was to sack the striking workers, but that their jobs were protected by the minister of labour. There followed protracted negotiations between the unions and CCT management, resulting in a convention on labour conditions, signed by both parties, in early 2008. Union leaders said they regarded this as progress, but complained that since then the convention had not been respected by CCT's management. Further talks are under way, but the union leaders complained:

> “The talks are in the language of the deaf. It is partly that there is a language problem. But the deeper issue is that even when you get an agreement with the Chinese, they don't do what they said they would do.” [65]

As well as their grievances regarding pay and conditions, union leaders have also expressed bitterness that the theoretical near-equal split in the CCT joint venture between Chinese and Congolese interests is allegedly not respected in practice. The unions leaders alleged that “all the strategic decisions are taken by the Chinese” and that “Congolese directors are not respected”. CCT's managing director is Chinese, and its number two is a Congolese. The union leaders alleged that if the managing director is absent then the number three, who is also Chinese, takes over day-to-day control of the company instead of his Congolese superior. The leaders also concurred with the allegations of one of CCT's commercial competitors referred to above that CCT is evading taxes with the connivance of the authorities.

CCT's management has conceded that there have been problems with its labour unions, but have claimed that with the signing of a convention on pay and conditions, these problems had been mostly resolved. The company has also expressed the view that Congolese workers might be disappointed by the salary scales they operate under because they had wrongly anticipated European-type salary scales, which are much higher. This view was echoed by the Economic Bureau of the DRC's Chinese embassy, which denied that salaries at CCT were too low, and added that workers were free to accept or decline employment at the company.[66]

There has been no industrial action to date among the Huawei workforce in the DRC, though Huawei workers interviewed for this study all complained about their salaries, which they claimed were far lower than if they worked for European companies. They also claimed that salaries were lower then they legally should have been but that Huawei management had “arranged things with the authorities” and could thus get away with it. One worker claimed the only way for a Congolese at Huawei to get a decent salary was to speak Chinese. The workers interviewed conceded, however, that they received good training at Huawei.[67]

As well as high profile sponsorship of sports and the arts, Vodacom Congo and Celtel DRC have since the start of their operations spent heavily on community outreach and social programmes, and particularly assistance to hospitals and schools. This is partly good marketing, as this assistance provides further opportunities to build the company brands, but is also the companies' attempt to show their customers they are not just there to take their money, but also to give back to the community.[68] CCT also has sponsorship and community outreach programmes, but on a much lower level than Vodacom and Celtel.[69] The programmes seem to occupy a less important position, however, in CCT's business model, and to lack a clear strategy. As one senior CCT official put it:

> 'We give money to schools to buy flour. We give to old people's homes. We have given money to orphans.'

CCT officials have defended their approach, saying the company's main focus is not profile but providing mobile telephone services the poor can afford, and because CCT's prices are so low, it cannot afford the lavish sponsorship and social spending of its bigger rivals. There is much in this argument, since keeping the cost of phone calls as low as possible probably has as great an impact, if not greater, than if CCT had charged more and spent more on community outreach. Yet the strategy is a risky one for CCT, as although the company is associated in the public mind with low prices, it is not perceived as assisting much in the struggle to improve social conditions in the country. Coupled with the company's unfortunate reputation for paying low wages to Congolese, and keeping them from positions of real power, this could leave CCT vulnerable to public opinion turning hostile.

V Conclusion

Asked to comment on rumours that Vodacom Congo might switch its equipment contract from Alcatel to Huawei, one Vodacom official said: “Alcatel, Huawei, whatever. All the equipment comes from China.”[70]

The Vodacom official is pretty much right. Regardless of where any given telecommunications service provider comes from, the chances are that its equipment, from hand-sets to base stations, was made in whole or in part in China. The quality of this equipment is rising all the time, while what remains a constant is its phenomenal, irresistible price competitiveness.

Because of this price competitiveness, this *price power*, it is the equipment that China manufactures which is the country's main contribution to the telecommunications sector in the DRC, and perhaps in the continent as a whole. In particular, the low price of Chinese telecommunications equipment makes hand-sets affordable to more people, and particularly the poor, and also means telephone service companies get more equipment for their money, which translates into wider coverage for all consumers.

China's price power in telecommunications equipment appears as an unambiguous good for the DRC in particular and Africa as a whole, mercifully not mitigated by any adverse impact on domestic manufacturing, since Africa does not manufacture telecommunications equipment. This is in contrast to many other sectors, and particularly the textile industry, where the benefits to African consumers of cheap Chinese clothing are mitigated by the disastrous impacts on African textile manufacturing, which can have significant implications for employment levels. [71]

Looking at the issue of CCT's direct contribution to telecommunications in the DRC, once again the major impact has to be price power. CCT's network is inferior in territorial breadth and depth to those of Vodacom Congo and Celtel DRC, and is likely to remain so. CCT cannot therefore be said to have made any great impact on network coverage in the country. By the same token, CCT's international service is not particularly impressive, and its internet provision even less so. Yet none of that matters. CCT's unique selling point is not coverage or broadband, but rather that it offers the least expensive mobile telephone service in the country. As we have seen, the profit margins CCT derived from its mid-2008 tariff levels do appear unusually low. But that is a job for CCT's competitors to fret about and respond to, and for the regulator to investigate. For Congolese consumers, the more pertinent point is that thanks to CCT they can spend less then they would otherwise have had to communicating with each other and the world. In a poor country, reeling like everywhere else from high food and fuel prices, this is no small achievement.

As we have seen, Huawei won the substantial Tigo contract in 2006 on price power. This will be how, if it does win it, Huawei will win the Vodacom Congo and the Kinshasa inter-connection contracts too. And even if Huawei does not secure these contracts, the challenge it will still pose to Alcatel and Ericsson, the other two equipment providers in the country, is massive. Again, Alcatel and Ericsson may worry, perhaps justly, about whether competition from Huawei in markets like the DRC, is 'fair'. But again, this is not the problem of Congolese mobile phone subscribers. For Tigo users and anyone who wants to phone them, Huawei's price power has meant the Tigo network being able to expand faster and further then would otherwise have been possible. And for users of other networks, the price challenge posed by Huawei will keep Alcatel and Ericsson's prices lower then they might otherwise have been, again to the consumers' benefit.

All of this is positive. Yet there is another Chinese impact on the DRC's telecommunications sector that Chinese policy makers will find more troubling. Justified or not, CCT and Huawei have both acquired reputations in the DRC for paying poorer salaries and offering worse working conditions then their European counterparts. The effect, by way of contrast, is to improve the reputation within DRC of these European companies as employers.

Trade union leaders active in CCT interviewed for this study, for example, were adamant that European companies were 'better' employers than were Chinese companies, who were said not to understand that Congolese professionals could not subsist on the pittance they were alleged to receive in wages.[72] It seems one of the ironies of history that it has taken a Chinese company to encourage Congolese trade unionists to sing the praises of Belgian business, which had for decades been emblematic in the DRC of the exploitative colonial regime.

Thus while Congolese politicians, like many of their counterparts across the continent, wax lyrical about the multiple advantages of China's “new model”, the reaction of the local workforce it employs seems to be to hanker for the old one. Yet the workers are in a minority. There are only 300 CCT employees, but around 640,000 CCT subscribers, all of whom are benefiting, as we have seen, from its low tariffs. If ZTE is committed to staying on and investing in the DRC, the number of CCT subscribers is set to climb, as more and more phone users succumb to the company's apparently unbeatable price power. If ZTE does pull out, there will still be Huawei, which is guaranteed to extend its footprint in the DRC over the next few years via Tigo, and may also end up doing so via Vodacom. Either way, China is certain to continue to play a major role in the DRC's telecommunications sector, primarily by keeping prices low enough for the poor to afford them. When China's price power manifests as the enforcement of low wages and poor working conditions by its companies in Africa, it has an oppressive effect, stunting the potential of workers. Offering low prices to consumers, by contrast, is the same phenomenon at its most liberating, and a major Chinese achievement in Africa.

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