DRAFT

regulateonline.org

World Dialogue on Regulation for Network Economies

WDR Dialogue Theme 2003

Discussion Paper WDR 0305

Telecom developments and investments in Ghana

February 2004

Godfred Frempong &Anders Henten

Work in Progress. Comments invited, please post them to: research@regulateonline.org or to the Online Discussion Forum at: www.regulateonline.org/dialogue/ under the topic **Case studies 2003**

IDRC CRDI infoDev ITU LIRNE.NET

regulateonline.org
World Dialogue on Regulation for Network Economies

The World Dialogue on Regulation for Network Economies (WDR)

The World Dialogue on Regulation for Network Economies (WDR) Project was initiated by *info*Dev which is providing foundation funding (IBRD, World Bank Grant Agreement # 546-011501). Additional foundation support is provided by the ITU Telecommunication Development Bureau (BDT), the International Development Research Centre (IDRC, Canada), and the LIRNE.NET universities: the Technical University of Denmark; the Delft University of Technology, the Netherlands; the London School of Economics, UK; and the University of Witwatersrand, South Africa.

The WDR Project is managed by the Learning Initiatives on Reforms for Network Economies (LIRNE.NET), a consortium of university-based research and training centres, administered at the Center for Information and Communication Technologies (CICT), Technical University of Denmark.

The World Dialogue on Regulation for Network Economies (WDR) facilitates an international dialogue to generate and disseminate new knowledge on frontier issues in regulation and governance to support the development of network economies.

Contact:

WDR Project, LIRNE.NET
Center for Information and Communication Technologies
Technical University of Denmark, Building 371
DK 2800 Lyngby, DENMARK

Phone: +45 4525 5178
Fax: +45 4596 3171
Email: info@regulateonline.org

WDR Project Coordinator Merete Aagaard Henriksen: henriksen@lirne.net.
WDR <www.regulateonline.org>
LIRNE.NET <www.lirne.net>

DRAFT

Godfred Frempong and Anders Henten
Center for Tele-Information, Technical University of Denmark

Telecom developments and investments in Ghana

1. Introduction

Since 1994, the number of fixed line telephone subscribers in Ghana has grown from app. 50,000 to 275,000 and, in the same period of time, mobile subscribers have gone up from a couple of thousands to more than 300,000. All in all, this looks like a success story. However, the goals set by government have only partly been met – especially with respect to the development in rural areas – and the quality of service is still low and has even deteriorated on some indicators. There is, therefore, a widespread dissatisfaction with the general telecom development in Ghana among users as well as policy decision makers and administrators.

This is, in very brief terms, the general description of the telecom development and present situation in Ghana, and the aim of this paper is to analyze this development and situation and to discuss the reasons behind the successes and failures experienced, in particular with respect to investments.

After independence from the British in 1957, there was a new dynamism in the telecom area. However, this positive development faded out and the telephone penetration rate lingered around 0.3% for many years - even with smaller decreases in periods. This was the situation until around 1994, where an actual expansion of the number of subscribers started. There had been development projects for the telecom system in Ghana before, referred to as the First and Second Telecom Projects (FTP and STP). Though these projects did not result in any major immediate growth in the number of users, they provided the bases for the relative improvements in the sector, especially the STP.

The aim of these development projects was to build and improve the telecom system in Ghana with respect to the infrastructure and the services delivered as well as the organizational aspects and administrative procedures. As the telecom system in Ghana until the beginning of the 1990s was a state monopoly, and as sufficient funds for the expansion of the system were not generated internally in Ghana, the FTP and STP were based on external funding from multi- or bilateral development assistance sources. However, with the liberalization of the telecom sector from the mid 1990s, the strategy for funding an expansion and improvement of the telecom system put more emphasis on attracting foreign investment capital, both for new operators (liberalization) and for the incumbent operator by way of privatization. Mobile operators got permissions to operate (Mobitel, Celltel (now Kasapa), Spacefon and later the incumbent affiliate One Touch); a second national operator (Westel) and a rural operator (Capital Telecom) were licensed; and the incumbent Ghana Telecom was partly privatized with the sale of 30% to G-Com Limited, a consortium led by Telekom Malaysia.

This has resulted in the positive developments witnessed with respect to the number of subscribers. But there are still many problems, as demand for services far outstrips supply and as quality of services is low. According to the government, Ghana Telecom needs about USD 500 million to achieve the objective of 400,000 telephone lines by 2005 as well as improving the quality of the services to an appreciable level[1]. This is the situation today, where the cooperation in Ghana Telecom with the Malaysians in G-Com Limited has been brought to a halt in terms of their management role, and the Norwegian telecom operator Telenor has taken over the top management functions in the company.

2. Foreign capital in the monopoly era

Over the years, Ghana has been seeking to attract foreign capital from bilateral and multilateral sources (grants or loans) to develop and expand its telecom services. The government embarked on two major rehabilitation projects in the 1970s and 1980s - referred to as the First Telecom Protect (FTP) and the Second Telecom Project (STP).

[1] The figure USD 800 million has also been mentioned by the Minister of Communication in May 2003.

FTP was to resuscitate the telecom sector in the country. It formed the first part of Ghana's telecom development programs for the sector with the objectives, among others, to:

- Improve the quality of local, long distance and international telecom services
- Extend the local and long distance services
- Extend international telecom service

The funding of the FTP came from multi- and bilateral sources with the World Bank being the largest contributor with USD 23 million and EDC (Canada), the African Development bank, OECF (Japan) and ECGD (UK) as other contributors.

The project was originally scheduled to be completed in 1980 but had to be extended to 1987 to enable physical targets to be realized. Poor civil works, shortage of building materials, delays in raising counterpart funding and complicated procurement procedures caused the delay of the project. Consequently, the FTP had to be incorporated in the Second Telecom Project.

STP was launched in 1987 with the following objectives:

- To support the program of institutional and management improvement for the telecom sector
- Improve the quality of services through the replacement of obsolete equipment
- Improve financial performance of Ghana Telecom

Table 1: Sources of Funding for STP, in millions USD

Source	Foreign	Local	Total
Government of Ghana	1.5	9.8	11.3
France (CCCE)	21.7	-	21.7
Netherlands (NKF)	18.8	-	18.8
Japanese grant (JICA)	9.2	-	9.2
Japan (EXIM)	7.0	-	7.0
Japan (OECF)	69.5	6.7	76.2
Ireland	1.7	-	1.7
IDA	18.3	0.7	19.0
Ghana P&T	2.3	5.5	7.8
Total	150.0	22.7	172.7

Source: P&T Corporation, 1993

As can be seen from table 1, the vast majority of funds for STP were foreign - USD 150 million out of USD 172.7 million. The two projects (FTP and STP) served as the prelude to the reform in the sector. The completion of the STP provided much input for the reform in the sector as it expanded the capacity of Ghana Telecom to provide the much needed backbone support for growth in the number of subscribers and expansion in the kinds of services that were to spring up after the reform.

3. Sector reform

Sector reform came creeping at first with Mobitel (Millicom) starting to offer mobile cellular services already in 1991 in addition to the limited number of fixed network services offered by the incumbent (telephony, fax, telegraph and telex). The decisive move towards sector reform came in 1994 with the Accelerated Development Plan (ADP) which was aimed at improving and expanding the system by way, among others, of attracting foreign investment capital. Ghana was, furthermore, one of the few African countries which signed the final WTO agreement on basic telecommunications in 1997 (with different exemptions).

The reason behind this policy of liberalization was partly that there was an external pressure from international organizations and donors, first and foremost the World Bank, to implement a sector reform. Equally important was the obvious fact that the telecom sector was in such a bad shape and that something urgently had to be done to revamp it.

The pressure from the World Bank to reform the sector came as the result of Ghana's adoption of the Economic Recovery Programme (ERP) / Structural Adjustment Programme (SAP) in 1983. The ERP and the SAP were general economic policies enunciated by the World Bank and its affiliates in the 1980s for developing countries whose economies were ailing and needed financial support. Developing countries were to adopt these policies as a pre-condition for the financial support from the Bank. And the policies enjoined the recipient governments to divest themselves from direct participation in the economic activities in their respective countries especially

the operations of the state owned enterprises (SOEs). Consequently, governments were to divest their interests in the SOEs through the sale of their shares to the private sector. In the case of Ghana, the Ghana Posts and Telecommunication Corporation was part of the SOEs that were to be divested to enable Ghana to access the financial packages which it urgently needed to resuscitate the economy which was in seriously crisis. Specifically, the World Bank agreed to partly finance the Second Telecoms Project because of the commitment given by the Ghana government to reform the sector. However, the Bank's influence on the model Ghana adopted – partial liberalization as against other models of reform - was minimal if any, as the government adopted the partial liberalization model based on a review of the experiences of countries that had taken the lead in the reform.

The measures to be taken to realize these objectives were:

- Privatization of Ghana Telecom through sale of a strategic stake to an international operating company
- Creating a competitive duopoly by licensing a second national network operator with similar rights and obligations as Ghana Telecom
- Liberalization of value added services, mobile cellular telephone services, data transmission, paging and pay phones
- Establishment of a regulatory agency for the sector
- Allowing large corporate users to develop their own private networks

Ghana thus embarked on a strategy encompassing liberalization, privatization and the establishment of a regulatory framework and agency. However, it was not a full-blown liberalization strategy. In the fixed network area, the development of a duopoly and a supplementary rural operator in the southern part of the country - and not full competition - was the preferred development mode. The idea was to give the licensees an advantage by way of exclusivity, as has been done in many other countries on the supposition that this is the only way to attract foreign investments and that public requirements for network extension are more easily made in this situation.

Furthermore, a regulatory authority – the National Communications Authority (NCA) was established as an integral part f the strategies to regulate and ensure the

development of a competitive environment in the sector. The regulatory regime, however, was rather shaky and has not been able to address the problems of interconnection between the incumbent operator and the others on the sector.

In 2002, the 5-year period of exclusivity for Ghana Telecom and Westel ran out, and with the decision by Parliament 2003 through a Legislative Instrument (LI 1719), the exclusivity period has also formally ended. The extent to which this will result in new operators of basic services is uncertain. One Dial Communications Limited has announced that they intend to investment over USD 400 million, but intensions still have to materialize. An important issue here will be the need for a robust regulatory regime and the regulatory agency to effectively regulate the sector to give confidence to the would-be investors.

4. Investments in the competition era

Investments in the competition era are intended to rely more on foreign direct investments by market stakeholders. However, bilateral or multilateral sources have continued to contribute to the funding of systems expansions - see table 2 which provides a list of some of the loans that Ghana Telecom has contracted and the type projects involved.

Table 2: Selected Investment Projects, 1995-1998

Source	Year	Amount	Project
Marubeni Phase I	1995	¥1,712.0m,	Accra telecom network expansion project
AT&T	1995	US$8.5	Installation and commissioning of international, local and toll exchanges at Cantonments, Accra
Caisse Française de Development		Fr Francs116.0m	Modernization and expansion of telecom services in Tema
CIDA	1996	CD$3.7m	Supply of telecom equipment
Telecom Consultants India Limited	1996	11.7m	
NKF	1997	DG 28.2	Services for the Installation telecom networks in Sekondi

			Takoradi, Koforidua, Ho, Tamale and Sunyani
Marubeni Phase II	1997	¥1,232.0m	Ghana Telecom expansion project
Marubeni Corporation	1998	¥1,229.3m	Digital Microwave System Project

Source: Ghana Telecom Annual Reports 1996 and 2000

Just like the two rehabilitation programs, the financial support has come from varying sources but the major support has come from the World Bank, Japan, France and the Netherlands.

In the statistics provided by ITU, there are great fluctuations in the level of investment over the years. However, the average investment percentage (investments divided by total income) is on the same level as telecom investments in, for instance, Europe (see WDR report on investments in Denmark). Figures are provided from 1984, however with big 'holes' especially in the first part of the 1990s (see table 3).

Table 3: Annual telecommunication investment in Ghana, 1990-2001, in million USD

	Investments	Total income	Investments/total income
1984	0.79	7.23	10.9%
1986	38.59	10.74	27.8%
1987	10.15	11.92	85.2%
1988	3.23	30.55	10.6%
1989	3.55	29.82	11.9%
1990	6.18	39.09	15.8%
1991	8.59	49.66	17.3%
1996	7.32	99.91	7.3%
1997	41.29	132.93	31.1%
1998	23.96	138.26	17.3%
1999	86.78	169.54	51.2%
2001	37.55	127.20	29.5%

Source: ITU World Telecommunication Indicators, 2003

The table shows that there were sizeable investments in the first part of the mid 1980s and, furthermore, that there were considerable increases in investments after the sale of a 30% share of Ghana Telecom to G-Com Limited and the licensing of Westel. Both companies were granted exclusivity rights in 1997 for a period of 5 years, which expired in 2002.

The table also shows that investments as a percentage of total income fluctuate very much – from 7.3% in 1996 to 85.2% in 1987 and 51.2% in 1999. These fluctuations illustrate that investments come in 'lumps', but also that investments (especially earlier on) have been partly based on foreign development assistance and not primarily the income on the operational side.

Among political decision makers, there is not much confidence in the ability of the sector to secure a stable level of investments. Pronouncements of ministers of state give the indication that Ghana Telecom has not attracted enough foreign capital to enable the company to improve its services. The inability of Ghana Telecom to attract adequate resources for the expansion program has made the government to include telecom (ICT in general) as part of the priority areas for foreign investments. Consequently, the government has guaranteed a loan of USD 150 million from the Chinese government for Ghana Telecom.

The second national operator, Westel, has also invested in the telecom sector. Since its inception in 1997 the company has invested about USD 26 million in its network development. The network, however, is limited to Accra and Tema Metropolitan Areas. It was supposed to have invested between USD 40 – 75 million for the first five years of operation but has not been able attract more investments.
And, Ghana's experience, in general, has been that the two national network operators have failed to attract adequate foreign investment to propel a sufficiently high growth of the sector after it has been reformed.

5. Developments of the sector

From the mid-1990s, the number of fixed telephone subscribers started to increase considerably compared with the previous decades. However, the goals set by government in the licenses issued to Ghana Telecom and Westel were not entirely met by Ghana Telecom and not at all by Westel. Ghana Telecom was to roll out 255,000 new lines and Westel 50,000 new lines during the 5-year exclusivity period (1997-2002). In table 4, the actual number of subscribers is listed.

Table 4: Fixed line telephone penetration, Ghana Telecom, 1990-2002, in thousands

	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002
DELs	44.2	46.6	47.8	48.7	50.0	63.1	77.9	105.5	133.4	157.0	204.7	242.1	272.5
Payphones	-	-	-	0.025	0.026	0.027	0.453	0.483	1.815	3.044	3.163	3.140	4.998
Teledensity	0.3	0.3	0.3	0.3	0.3	0.4	0.4	0.6	0.7	0.9	1.2	1.3	1.4

Source: Ghana Telecom (draft PhD thesis by Frempong)

The table shows that Ghana Telecom in the prescribed period only attained some 65% of the target figure. With respect to Westel, the picture is bleaker. Westel has only been able to obtain less than 3,000 subscribers (2,621 in March 2002) and Capital Telecom (the rural provider) 1,200 subscribers (March 2002) – which in the case of Westel is 5-6% of the set goal.

Furthermore, the distribution of subscribers is skewed towards the capital Accra. In table 5, the distribution of the subscribers of Ghana Telecom is depicted.

Table 5: Regional distribution of Ghana Telecom subscribers, December 2002

	Subscribers	Teledensity	% of country's population
Greater Accra	184,526	6.0	15.4
Ashanti	27,947	0.7	19.1
Western	17,009	0.8	10.2
Eastern	10,057	0.5	11.1
Central	8,621	0.5	8.4
Northern	5,438	0.3	9.6
Brong Ahafo	6,808	0.4	9.6
Volta	6,311	0.4	8.6
Upper West	1,728	0.3	3.0
Upper East	4,084	0.4	4.0

Source: Ghana Telecom (draft PhD thesis by Frempong)

With respect to payphones, there has been a positive development. While in 1995, there were only 27 payphones – all in Accra – the number of payphones increased sharply from 1996 and onwards. At present, there are around five thousand payphones, which is important for the general access (universal service) to telephone services. And they are, moreover, somewhat better distributed than private fixed lines.

43.9% are in the Greater Accra region, 18.9% in the Ashanti region (with Kumasi), 9.8 in Western, and the remaining quarter in the rest of the regions.

Another way of getting access to telecom services is via telecenters[2]. The exact number of telecenters is not known. However, a rough estimate would be that there are a couple of thousand centers in Ghana with more mushrooming every day – the majority of the centers being located in the larger urban areas.

One interesting phenomenon about the development of telecenters in Ghana is that it is strictly a private sector-led venture. However, the government has recognized and adopted as part of the Accelerated Development for the telecom sector the concept of telecenters as one of the mechanisms to achieve universal access in Ghana.

Most of the entrepreneurs who have established the centers have financed the business from their own resources while others were through support from relatives/friends and to a lesser extent support from the established financial institutions in the country. A survey by Morten Falch and Amos Anyimadu confirmed the funding trends in the establishment of the telecenters. The survey revealed that 67.6 percent of the owners of the telecenters interviewed indicated that they established the business through their own funds, 15.5 percent from friends/relatives, 4.2 percent from the banks and 12.7 percent from other sources[3].

In the establishment of telecenters, Ghanaians domiciled in the foreign countries or those who have returned from such countries provide sources of investment. These Ghanaians see the telecenters as one of the areas where they can invest some of their savings from their stay abroad. Surveys conducted have not delved into this issue but cursory observations emphasize this point.

[2] The telecenters as they exist in Ghana are basically commercial ventures which are reselling telephone services from a few number of telephone lines obtained largely from Ghana Telecom. The telecenters do not include internet cafés, however, some of the operators have made some arrangements with some of the Internet service provides, notably Africa Online to provide points where people can send and receive emails.

[3] Morten Falch and Amos Anyimadu: Tele-centres as a way of achieving universal service – the case of Ghana, Telecommunications Policy 27, 2003, page 31.

Mobile telephony has lately overtaken fixed line telephony in terms of subscribers. Similar developments are seen in many other developing countries, but also in economically advanced countries in Europe, for instance. In spite of mobile services being more expensive than fixed line services for the subscribers, there are many customers for mobile services, because of the flexibility of mobile services, of course, but also because mobile subscriptions are actually available in contrast to fixed line services where there are long waiting lists.

In 2002, the number of mobile subscribers reached 300,000 (see table 6). Especially, the GSM provider Spacefon has grown very fast, and lately the Ghana Telecom subsidiary One Touch has also gained considerable market shares based on GSM technology. This means that the penetration rate of mobile subscriptions presently is 1.5, and that the joint penetration (fixed and mobile) is almost 3, which is more than was expected a decade ago, where the ITU goal was a penetration rate of 1[4]. However, a large share of the mobile subscribers also has a fixed line, which obviously lowers the overall rate of access[5].

Table 6: Number of cellular mobile subscribers, 1993-2002, in thousands

	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002
Mobitel	1.7	3.3	3.6	10.0	16.9	22.3	33.0	40.0	50.9	53.0
Kasapa	-	-	0.8	1.9	2.6	2.8	2.2	0.9	0.9	8.7
Spacefon	-	-	-	0.4	7.0	13.0	38.0	90.0	140.0	160.0
One Touch	-	-	-	-	-	-	-	-	30.0	78.2
Total	1.7	3.3	4.4	12.3	26.5	38.1	73.2	130.9	221.8	299.9

Source: Data collected from operators (draft PhD thesis by Frempong)

With respect to Internet access, it is estimated that there are about 15,000 subscribers of Internet, but that over half a million have access through shared Internet connections – homes, offices, cyber cafes and friends. It has been estimated that there are about 150 Internet cafes in the country with approximately 90% of these cafes located in Accra, and the rest in the other large cities such as Kumasi and Takoradi.

[4] The goal in the Accelerated Development Plan from 1994 was a penetration rate of 1.5-2.5.
[5] This is shown in a survey conducted by Frempong (see draft thesis by Frempong). Half the respondents had both fixed and mobile subscriptions.

Finally regarding quality of service, there have been smaller improvements on some indicators. However, on other indicators the situation has deteriorated (see table 7). Fault clearance has improved, while call completion has developed negatively – and call completion, especially, is very important for customer satisfaction. As noted in the beginning of this paper, there is a widespread dissatisfaction with the performance of the telecom system in Ghana among customers.

Table 7: Quality of service indications for Ghana telecom, 1998-2002, in percentages

	NCA target	1998	1999	2000	2001	2002
Fault incidence rate *	4.8	5.2	6.1	5.0	3.9	4.0
Fault clearance rate in 48hrs	56.6	62.0	56.9	58.5	59.9	65.7
Local call completion rate	81.0	81.1	78.8	77.6	78.5	77.6
Long distance call completion rate	71.1	63.4	54.7	47.0	59.8	55.2
International call completion rate	62.0	60.3	69.0	73.0	70.4	63.5

* The permissible number of faults within one month for 100 lines

Source: Ghana Telecom (draft PhD thesis by Frempong)

6. Analysis of accomplishments

As has been shown in the paper, there has been a considerable increase in the number of fixed telephone subscribers since the part-privatization of Ghana Telecom and the process of liberalization started in Ghana. However, the subscriber goals set for the incumbent Ghana Telecom and the second operator Westel have not been met – in particular Westel has not come anything near the target. Furthermore, the geographical distribution is heavily skewed, as more than two thirds of all fixed line subscribers are located in the capital area of Greater Accra. With respect to mobile telephony, this has overtaken fixed line telephony as in so many other countries.

In comparison with other African countries, Ghana has been doing relatively well in fixed line telephony, but there are countries that have done better, i.e. Cote d'Ivoire and Senegal (see table 8). Both of these countries were already in 1992 at a higher level with regard to fixed lines than Ghana and have kept the lead. However, Ghana has come from a very backward stage and has passed-by countries like Kenya and Cameroon. With respect to mobile telephony (see table 9), Ghana's performance is not nearly as positive. Mobile telephony in Ghana started early within an African context. However, the subsequent development has not been as fast as in many other

African countries. Once again Senegal and Cote d'Ivoire outperforms Ghana, but this also applies to other countries (in table 9) like Cameroon, Kenya, Tanzania and Uganda.

Table 8: Fixed line penetration in African countries, 1992-2002

	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002
Uganda	0.17	0.12	0.16	0.20	0.24	0.26	0.27	0.26	0.27	0.24	0.22
Tanzania	0.31	0.32	0.32	0.32	0.32	0.35	0.39	0.47	0.53	0.44	-
Nigeria	0.32	0.34	0.36	0.39	0.40	0.38	0.38	0.41	0.44	0.46	0.58
Burkina Faso	0.21	0.23	0.27	0.30	0.33	0.34	0.38	0.43	0.47	0.49	-
Cameroon	0.49	0.46	0.45	0.49	0.52	0.54	0.66	0.64	0.63	0.66	-
Kenya	0.89	0.89	0.92	1.00	1.02	1.00	2.03	1.06	1.04	1.04	1.03
Ghana	0.30	0.30	0.30	0.37	0.44	0.57	0.70	0.81	1.17	1.16	-
Cote d'Ivoire	0.66	0.68	0.77	0.86	0.95	1.03	1.19	1.51	1.78	1.80	2.04
Senegal	0.75	0.81	0.89	0.98	1.11	1.32	1.55	1.79	2.16	2.45	2.29

Source: ITU World Telecommunication Indicators, 2003

Table 9: Mobile penetration in African countries, 1992-2002

	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002
Nigeria	0	0.01	0.01	0.01	0.01	0.01	0.02	0.02	0.03	0.34	1.36
Burkina Faso	0	0	0	0	0.01	0.01	0.03	0.05	0.22	0.64	0
Ghana	0.003	0.01	0.02	0.04	0.07	0.12	0.22	0.36	0.64	0.93	0
Uganda	0	0	0	0.01	0.02	0.02	0.14	0.25	0.82	1.16	1.59
Tanzania	0	0	0.001	0.01	0.03	0.07	0.12	0.16	0.55	1.27	0
Kenya	0.005	0.005	0.01	0.01	0.01	0.03	0.04	0.08	0.42	1.91	4.15
Cameroon	0	0	0.01	0.02	0.03	0,03	0.03	0.04	0.98	2.01	3.57
Senegal	0	0	0.001	0.001	0.02	0.08	0.30	0.95	2.62	3.12	5.65
Cote d'Ivoire	0	0	0	0	0.10	0.26	0.64	1.77	3.20	4.46	6.23

Source: ITU World Telecommunication Indicators

There are probably no simple explanations for this situation – with Ghana doing relatively well in fixed telephony and not as well in the mobile area – but an obvious explanation for the relatively good performance in the fixed area is the part-privatization of Ghana Telecom and the accompanying requirements on extensions on the number of subscribers. With regard to the less positive performance in mobile communications, one explanation could be the unclear regulatory situation in Ghana, especially in the area of interconnection. All the mobile operators and the second

fixed network operator Westel (and the rural operator Capital Telecom) have had great problems with Ghana Telecom over interconnection. And, there has not been sufficient help from regulation and the regulator. A regulator was created in connection with the overall change in the telecom environment in Ghana in 1997. However, it has never had any real strength to intervene in the market in order to create a more level playing field among the operators.

Another explanation could be that prices for mobile communications have been stable – at a high level – from 1993 to 2000. There was no real price competition between the mobile operators. Only lately has price competition begun.

Quality of service has been a recurring theme in the discussions on telecom developments in Ghana. As shown in table 7, the call completion rate has deteriorated in recent years. The likely explanation for this development is the increase in the number of subscribers, while core network facilities have not been expanded sufficiently. Not only has there been an increase in the number of fixed line subscribers, but a great percentage of traffic from mobile terminals will also pass over the joint core network facilities. Ghana Telecom could in the late 1990s with its new management (G-Com Limited led by Telekom Malaysia) present high growth figures for fixed line customers. They could partly base this extension on the improvements of the core network facilities that had been made in connection with the First and Second Telecom Projects. However, they failed to expand the central parts of the network at a sufficiently high speed to service the increasing number of subscribers.

The massive investments required to propel the rapid growth in the sector were not derived after the liberalization of the sector, though considerable improvements were registered over the pre-liberalization era. This has affected the ability of the two national network operators to deliver on their statutory license obligations. The worst offender was Westel which for the five-year period deployed less than 3,000 main telephones lines. This figure, as already stated was far below the expected target of 50,000 main lines for the period.

One of the underlying factors of Westel's failure to meet its obligations is the company's inability to attract the necessary foreign capital. Westel blames the weak

regulatory environment as contributing to its investment woes. Westel experienced a lot of interconnection problems with Ghana Telecom in the early stages of its operation and this delayed the commencement of its business for sometime. According to Westel, the initial interconnection problems encountered with Ghana Telecom and the inability of the NCA to resolve the impasse negatively affected the sector in the capital market. The initial interconnection problems between Westel and Ghana Telecom were not strictly limited or related to the number of E1s that Ghana Telecom was prepared to release to Westel or the interconnection rates, but to a system which Westel had wanted to introduce into the country. Westel had wanted to operate a pre-paid system which would have allowed users to access its network as well as that of Ghana Telecom. Ghana Telecom objected to this and argued that Westel was to develop its own network as a second national network operator as contained in the license issued by NCA and then interconnect with Ghana Telecom on that basis. This dragged the interconnection negotiations until Westel backed down.

In the case of Ghana Telecom, the problem between the Ghana government and Telecom Malaysia has affected the attractiveness of the company to attract foreign investment. During the partial privatization of Ghana Telecom, the Rawlings' government gave Telekom Malaysia (the minority shareholder) more seats on the management board than its ownership-share required and also signed a five-year management contract with the company.

When the Kufour's government assumed office in 2001, they complained about the unfairness of the composition of the management board and also the performance of Telekom Malaysia as the managers of the company. Their complaint was based on the poor performance of Ghana Telecom in terms of poor quality of service and inability to meet its obligation on roll-out targets on fixed telephone lines. The government negotiated for a new composition of the management board to reflect on the level of share holding and also refused to renew the management contract when it expired in 2002. As the result of these developments, Telekom Malaysia declared its disinterest

to continue to hold shares in the company and has called on the government to buy back the 30 percent shares. [6]

The regulatory authority has been accused of being weak because it has been unable to provide a level playing field for all telecom operators in the country to generate competitiveness. The seeming weakness of the regulatory authority is not wholly due to the inadequacy of the establishing law, but political interference and omissions have contributed to the weakening of the authority in Ghana.

The NCA Act from 1996, Act 524, granted the authority wide ranging powers to regulate and manage the sector. Section 41(1) of the Act granted the NCA the authority to make regulations in relation to rules and guidelines on tariffs, international accounting system, terms and conditions for interconnectivity, technical standards in the provision of telecom services, and general regulations for the sector, among others.

However, developments in the sector have handicapped the NCA in fully utilizing these powers conferred on it by the establishing act. Political interference has played a prominent role in sapping the energies of the Authority. The NCA Act made provision for the establishment of a Board but in the absence of the Board the Minister was to act. This was done in good faith to ensure that no power vacuum occurs. However, the experience in Ghana is that government exploited this provision to take direct control of the ICT sector, thereby weakening the position of the NCA as an independent regulator.

The Board was only established in 2001 after almost four years of the NCA Act in operation. As a result, all matters that should have been dealt with by the Board were taken over by the Minister of Communications. The Minister handled all issues concerning license authorization and even negotiations on tariffs and interconnection. The position of the Minister in the operations of the NCA was so powerful that there was no settlement of disputes without ministerial interventions. There is the likelihood

[6] The Telekom Malaysia offered to sell back its 30 percent shares it bought at US$38 million in 1996 to the Ghana government at US$100 million. The Ghana government has disagreed on the share value and the case is now before international arbitration for settlement.

that the delay in the appointment of the NCA Board was to serve the interest of Government/politicians since the absence of the Board gave some leverage to the political system to interfere in the work of the NCA.

Relatedly, the NCA operated for five years without a set of rules and regulations to manage and regulate the sector. These rules and regulations were to come out in the form of Legislative Instrument (L.I). Therefore, it was difficult for the NCA to sanction operators for non-performance, anti-competitive behaviors and non-compliance of directives among others. With the absence of the L.I., the NCA could not sanction the operators who disregarded its directives and that of consumers' interests. It was only in March 2003 that Parliament passed the Legislative Instrument (L.I 1719) to help the NCA to manage the sector.

Given this state of affairs, the NCA lacked the real power to implement fully the provisions of the establishing Act. It has most often taken the Authority a long time before it has resolved problems in the sector and most of these problems have been resolved through ministerial interventions. This general weakness has not provided a good signal for foreign investments.

However, recent developments provide some positive signals about the re-assertiveness of NCA to its legal powers. The government has reconstituted the NCA Board[7], made its chairman the Managing Director of a private multinational bank and, for the first time, the NCA was able to negotiate with the operators a new tariff regime without ministerial intervention.

7. Perspectives

Before the liberalization and privatization, foreign capital (which was also essential in the earlier period) came by way of development assistance (loans and grants). A major reason for liberalizing and privatizing the telecom sector in Ghana has been to attract foreign investments and competences and experiences in the field by joining up with a strategic partner.

[7] The first NCA Board established by the Kufour's government, however, had the Minister of Communications as its chairman.

As illustrated in table 3, this strategy has partly worked, as investments in general have been higher since liberalization and privatization – but not enough. And, since the end of the exclusivity period for Ghana Telecom (and Westel), it has been clear that cooperation with the Malaysians would not continue.

Presently, a management contract with the Norwegian incumbent operator Telenor has been established, which means that the Norwegians will perform top management function in Ghana Telecom – but they do not own any shares in the company[8]. It is a pure management contract. Whether this new policy will succeed has yet to be shown. It is a difficult period, at present, in the telecom area, as international investments do not flow as easily as in the boom period in the late 1990s. With the new set up, Ghana Telecom will, to a large extent, have to rely on foreign loans as in the pre-liberalization phase. The government of Ghana has, as mentioned, secured a loan of USD 150 million from China, but the investment requirements are very high, if the telecom system is to expand and improve in quality. Figures mentioned lately by representatives of the Ghana government are USD 500 and 800 million for the immediate goal of 400,000 fixed telephone lines in 2005 and for securing an infrastructure for the development of ICT-based businesses in Ghana.

8. References

Addy-Nayo, C. (2001) *3G mobile policy: The case of Ghana*. Geneva: ITU.

Ahiabenu II. K. (2003) *Ghana – Rapid growth in Internet use despite cost constraints*. Balancing Act News Update, no. 54. http://www.balancingact-africa.com.

Allotey, F.K.A. & Akorli, F.K. (1993) *Telecommunications in Ghana*. http://111.vii.org/papers/ghana.htm.

Falch, M. & Anyimadu, A. (2003) Tele-centres as a way of achieving universal service – the case of Ghana. *Telecommunications Policy* 27, pp.21-39.

[8] G-Com Limited still retains their 30%. However, the government of Ghana is negotiating a buy out, but there is no agreement, at present, on the price.

Frempong, G. & Henten, A. (2001) *Universal telecommunication service in Ghana: Pieces to the puzzle*. Lyngby, Technical University of Denmark.

Frempong, G. (2003) *Restructuring of the telecom sector: Ghana's experience and policy implications*. (Draft PhD thesis). Accra, University of Ghana.

Haggarty, L., Shirley, M.M.& Wallsen, S. (2002) *Telecommunication reform in Ghana*. Working Papers, Washington DC, World Bank.

Michelsen, G.G. (2003) *Institutional legacies at work in African telecommunications*. Report no. 80. Bergen, Institutt for Administrasjon og Organisasjonsvitenskap

Zibi, G.E. (2002) *Ghana: Government to overhaul a failed liberalization process*. Cambridge USA, Pyramid Research.