

TELECOMMUNICATIONS REFORM IN UGANDA

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I. Introduction

Telecommunications reform is an accepted reality throughout the world, and especially in the developing world where it has become a pre-condition for new investment. While the planned outcome is the same in all cases, limited global experience means that there is no well tried reform path that can give assurance of success in any given set of circumstances. It is therefore important to document and study the various methodologies that have been tried in different countries with the purpose of identifying best practices as well as common success factors that can guide those countries that are just starting on the reform process. This is the major motivation for this case study that addresses Uganda.

The case study is part of a larger research program analyzing the effects of regulatory, legal, political and bureaucratic institutions on telecommunications reforms in Africa. The outcomes of privatization in regulated sectors such as telecommunications depends heavily on regulatory institutions (Noll 2000, for a survey of the empirical literature on privatization see Shirley and Walsh 2000). While technological change has increased the potential for competition in telecommunications in the sector, and hence the need for regulation, the extent to which competition operates effectively will itself depend on regulatory and political institutions.

An important goal of this research program is to measure the net returns from competition under the highly imperfect market and institutional circumstances that prevail in most African economies.

The research program addresses this goal through detailed analysis of six cases: besides this study of Uganda, we also analyze Ghana, Cote d'Ivoire, Senegal, Malawi, and Tanzania. Uganda's bold approach to telecommunications reform provides a good

opportunity to test the basic premises of our research project. Uganda, like Ghana, allowed competition in basic services by selling a second network license during late 1997/1998. It also has competition in cellular and value-added services. Uganda sold the majority shares of its incumbent operator, Uganda Telecommunications Ltd (UTL), in June 2000 after three unsuccessful attempts.

The first hypothesis of our work is that competition in telecommunications will improve performance more than monopoly provision. Among the improvements that we expect are lower prices, better service, wider access, and faster expansion of capacity. Competition has costs, including the loss of any scale economies and the inability to use cross subsidies to bring service to selected groups or locations (apart from the implicit subsidy in obligations to roll out services to areas that are not viable in the short run). We expect that these costs will be offset by the more efficient operation of firms subject to market discipline, and that scale economies will continue to be eroded by technological progress. Some analyses suggest that competition will also result in lower proceeds to the government from the sale of the incumbent operator or from operating licenses, and lower investment. The argument is that governments in developing countries have low credibility and must offer protection against competition to attract capital for the purchase of the firm and investment in sunk assets.

The second hypothesis is that buyers will pay more for a monopoly but will invest less than under competition, and the benefits from investment will outweigh the costs from lower sales revenues (including the distortionary costs from higher taxes). This follows not only from the well known argument that monopolies have less incentive to invest than firms facing competition, but also because monopolies, especially those

owned by foreigners, face a higher political risk from pressures to control monopoly rents. Of course there may be intermediate solutions, whereby government extends a temporary exclusive license and the research will attempt to establish the effects of exclusivity agreements with different duration. This analysis must necessarily include a judgment about whether the regulator will do a better job of (a) enforcing competition or (b) forcing a monopoly provider to offer as good a service at as low a price as would prevail under competition. Frail political systems and weak regulatory capacity could allow opposing interests to capture the institutions and organizations needed to support a competitive market, reducing the benefits from competition. Whether competition will be preferable to monopoly under such circumstances is an empirical question, since the same institutional weaknesses could also prevent the regulator from controlling a monopoly provider, and the threat of entry with even nominal competition may have a salutary effect on the dominant provider. Countries with unstable governments or weak protection for private property rights may also be unable to establish competition because they do not have enough credibility to attract private investors to a competitive market.

Third, we hypothesize that how well competition is sustained or monopoly controlled -- in other words, how much performance is improved -- will depend on regulatory characteristics and their goodness of fit with a country's institutions. Based on Noll 2000, our hypotheses are that performance will be better when:

- regulatory discretion is limited;
- regulatory personnel are not subject to short term political pressures;
- the regulator can require detailed information from the operators;
- the regulatory process is open to public scrutiny and

- regulatory decisions are subject to appeal to a credible body that has less of a stake in the outcomes than the participants, such as an independent court.

Our project also explores the political economy of competition in African telecommunications. We expect that competition is more likely to be introduced if the levels of penetration and service achieved by the incumbent are below average for countries of similar size and development, and if those opposing competition (workers who might lose their jobs, bureaucrats who might lose power, buyers who might lose the potential rents) are not well organized, not able to credibly threaten to withhold support from key government actors, or not important to the government's support base. The introduction of competition will also be more likely the more credible the government with potential investors, since that will enable it to attract multiple bidders.

This case study begins with an analysis of Uganda's telecommunications sector prior to reform in Section II and describes how these circumstances made privatization with competition more likely. It then documents in Section III the political circumstances leading to reform, and considers whether competition will be sustained. Section IV discusses the objectives and implementation of the reform, while Section V discusses the regulatory framework. In Section VI, the nature of the reform and the outcomes so far are assessed, and Section VII concludes with an assessment of the implications of our findings for policy and for our larger research project.

II Circumstances in the Sector Leading to Reform

As explained in Section I, we expect that countries are more likely to choose competition in telecommunications sectors where service has been poor, access is below

average for the region, and profitability, low.² The reasons for this are threefold. First, a history of poor service and failed reforms will dispose governments to try more radical changes, such as privatization with competition. Moreover, public opinion will be less likely to favor the staff of an incumbent with a poor record. Second, the lower the access, the smaller the incumbent, and hence the greater the likelihood that a rival can challenge its dominant position. Competition will be more feasible, making it possible to attract bidders for a second network license even where regulation might be weak. Third, government has less reason to give exclusive licenses to buyers of a small system with poor profitability: sales revenues are likely to be small, even with exclusivity, while expansion is likely to be more rapid in a competitive market.³ As we show below, all three conditions in the telecommunications sector in Uganda favored reform. The incumbent was small, service was poor, and profitability, low.

(i) *Service Before Reform.* Uganda is a small country which had approximately 18 million inhabitants in 1994 (now greater than 20 million), and a largely rural population (88 percent of the population). It is also poor; the per capita GDP was US\$190 at the time of reform in 1994. Telecommunication services in Uganda were much worse than the regional average before implementation of reforms started in 1994. Service was provided by a state owned monopoly, Uganda Posts and Telecommunications Corporation (UPTC). At the time of the reform UPTC had 115 exchanges with capacity to handle about 62,000 lines, but had only 30,449 lines in service (Laidlaw and Parkinson 1995 and UTL data). As a result, for the period 1985 to 1994, there were only 1.6 main

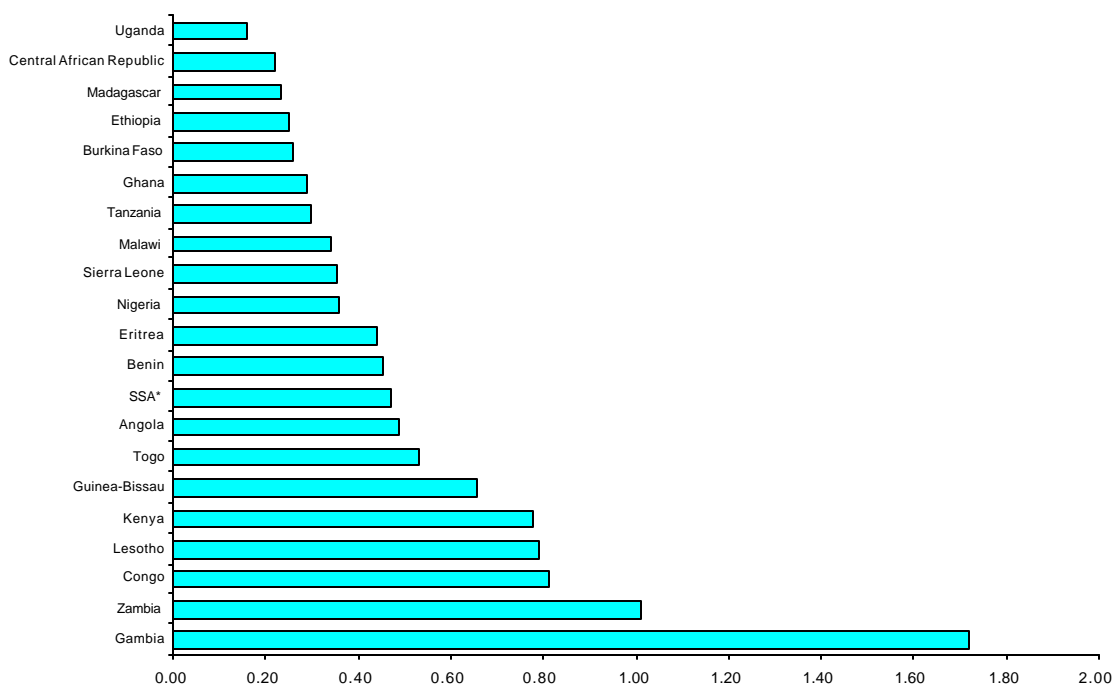
² This is explored in more detail in the conceptual framework paper for the research: Noll and Shirley, 1999.

³ Of course, low profitability may discourage entry unless the new entrants believe that they can make a reasonable return. This was the case in Uganda, for reasons we discuss later.

lines for every 1,000 inhabitants in Uganda. This penetration rate was low even in comparison to that of countries with similar levels of per capita income (see Figure 1).

Figure 1: Teledensities of Selected African Countries (1994)

(Main Lines per 100 Population)



Source: ITU

There was virtually no expansion in access during the early 1990's. Instead, a dramatic reduction occurred in 1993 when UPTC cut service to all subscribers who failed to answer a letter asking if they were interested in having a telephone. The goal was to drop "ghost subscribers" from the network, but many subscribers complained that they never received the letter. All existing (and prospective) subscribers had to reapply (or apply) for service.

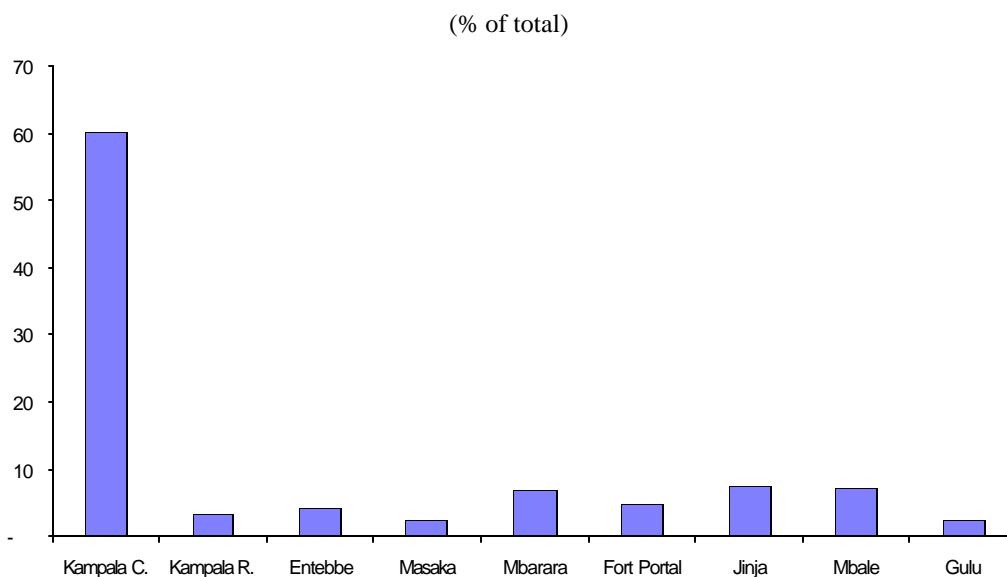
Estimates of demand for the mid-1990's are now recognized as having been very low, but suggest that while the potential telecommunications market was not large, UPTC did not cover half or even one third of the estimated market. ITU numbers suggest a waiting list in 1994 equivalent to only about 8 percent of installed lines, but estimates of

demand in 1993 were much higher: 71,000 to 80,000 lines forecast to grow to 155,000 to 194,000 by 2005 (Laidlaw).⁴ These demand numbers were underestimates. Four years later an in-depth ITU study estimated demand for fixed line service at 184,000 lines in 1997 -- more than three times the lines in service that year (51,829) -- and projected that demand would grow by 8.5 percent a year, reaching 380,000 by 2006 (IFC, 1997). Even this later projection is now recognized as having been low. New operators in Uganda report that demand has greatly exceeded their initial forecasts and they have experienced problems providing enough capacity.

One problem in estimating demand in Uganda is the concentration of the system in the capital, which meant that many potential subscribers outside of Kampala would not see any reason to put their names on a waiting list. As Figure 2 shows subscriber lines were heavily concentrated in the capital in 1997, and the story is similar for public phones and installed capacity. Even though Kampala had less than 10 percent of the population, it had 70 percent of all subscriber lines in 1997, while the Eastern and Western regions of the country, home to more than 50 percent of the population, had only 20 percent. Many rural residents had to travel to the capital in person to conduct business because phones were not available where they lived. Kampala had 62 percent of installed capacity in 1993, although only about a third of this was used (nation-wide only 34 percent of capacity was used). Finally, potential demand estimates at that time did not recognize or reflect the preference and potential for mobile as opposed to fixed services for businesses whose activities are themselves mobile or decentralized.

⁴ Based on current GDP per capita, Laidlaw and Parkinson 1995 estimated 1994 demand at 100,000 (page 21).

Figure 2. Uganda: Regional Distribution of Main Lines in 1993



Source: Report on Liberalization and Privatization of the Telecommunications Sector, The Committee on Investment in Telecommunications, Uganda, Kampala, November 1993

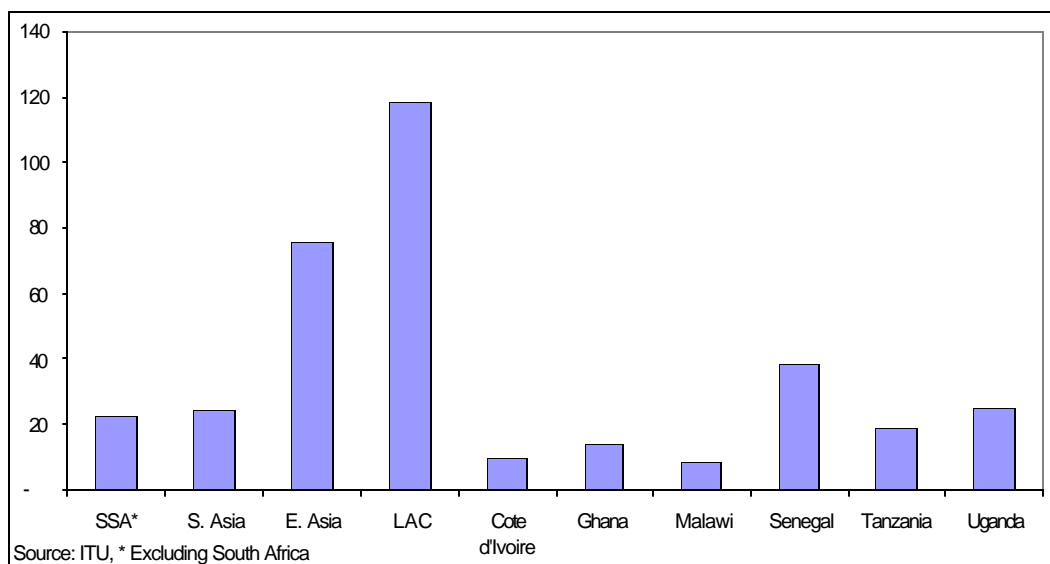
Only about a third of capacity was being utilized in 1994, but much of this “book” capacity was not actually available for use. A number of switching systems were not operating, especially the electro-mechanical switches outside of Kampala (where the digital exchanges were concentrated). Not only was equipment outmoded, poorly maintained and inoperative due to a lack of spare parts; some of the technology installed with donor funding was incompatible. A 1989 rehabilitation project supported by the World Bank and various aid agencies improved the external cable networks for Kampala, Jinja and Entebbe and allowed the purchase of necessary materials and equipment for better maintenance, doubling the size of the usable network. The rest of the country, however, was largely beyond the reach of this project.

Although the rehabilitation project expanded the system’s reach, quality of service remained far below the project’s original targets. Only 25 percent of local calls (the target in the rehabilitation project was 60 percent) and 40 percent of international calls were completed on average in 1993. Only about 30 percent of faults were cleared

within 24 hours (the target in the rehabilitation project was 60 percent), 53 percent within a week and 62 percent within a month. Poor customer service in general, and incorrect billing due to fraudulent diversion of lines in particular, were causes of much bitterness against UPTC.

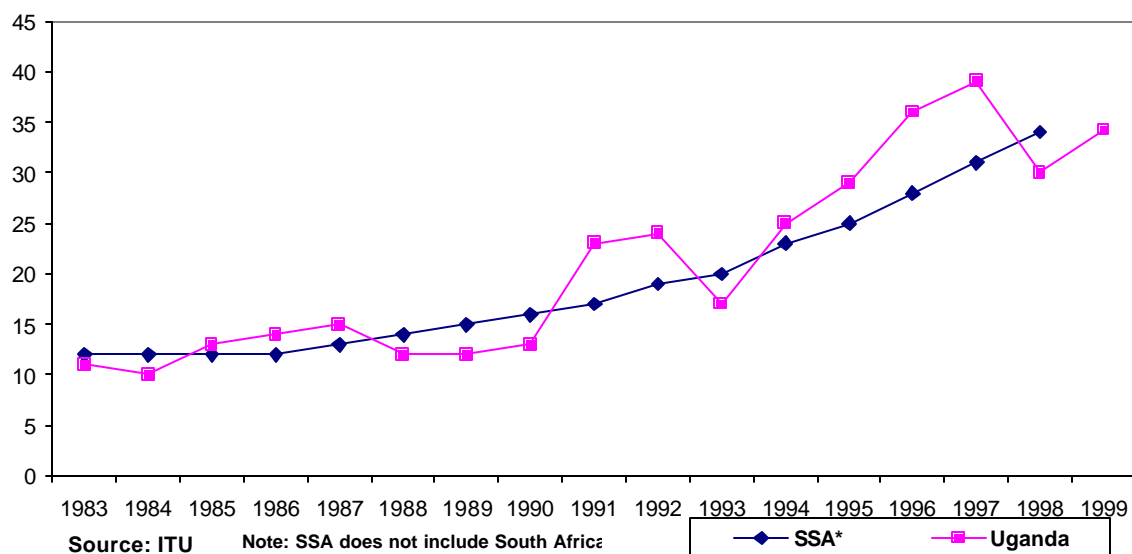
On the plus side UPTC does not seem to have been as overstuffed as some State Owned Enterprises (SOEs) in the region. Labor productivity in UPTC in 1994 was on a par with the regional average of 25 mainlines per worker, and better than much of our sample (Figure 3).⁵ Furthermore, it had improved greatly since the lows of the late 1980's (Figure 4). However, the Africa average is poor compared to other regions; the average for 1994 in Latin America, for example, was 119 main lines per employee (ITU).

Figure 3. Main Lines Per Employee, 1994



⁵ Labor productivity may be overstated because of the problem, described above, of non-operating switching systems.

Figure 4. Number of Main Lines Per Employee in Uganda and Sub-Saharan Africa

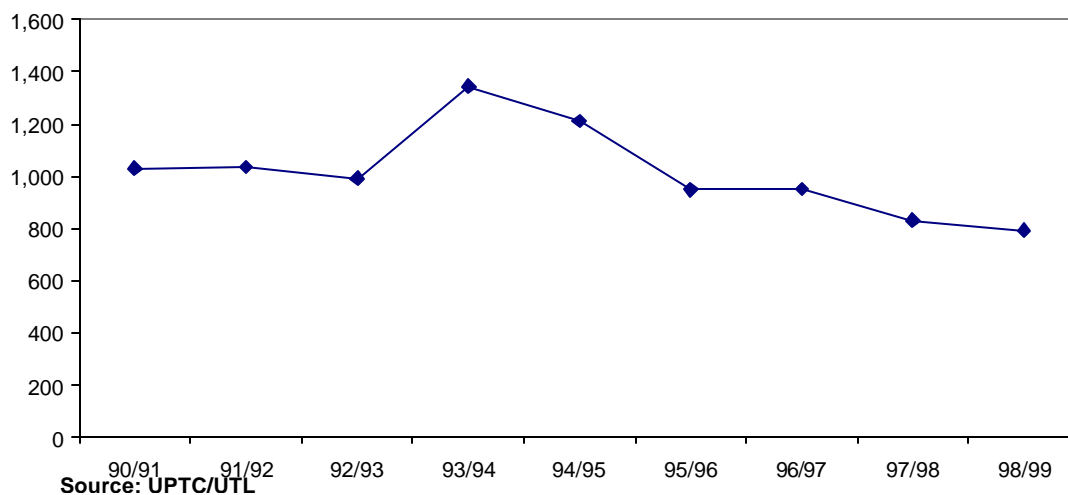


These numbers suggest that there was little reason for public opinion to support the status quo in UPTC. Most people did not have access to a phone and had little prospect of connection in the foreseeable future. Those who did have lines had frequent and lengthy problems with faults; those who could make phone calls were often unable to complete their calls; and all subscribers suffered from UPTC's poor customer management. Although labor productivity was the same as the sub-Saharan Africa regional average, that average is a poor one by world standards.

(ii) *Finances.* The financial situation in UPTC also favored a radical reform such as privatization with competition. In contrast to the situation in many other countries, telecommunications was not a major source of revenue for the government of Uganda, despite very high international and national long distance tariffs in the early 1990's. (In 1993, for example, calls to the U.K. or U.S. were US\$7.50 a minute, national long distance calls rose quickly from US\$0.08 to US\$0.59 per minute for distances over 700 kms, while local calls were only \$0.05 a minute.) Revenues per main line fluctuated

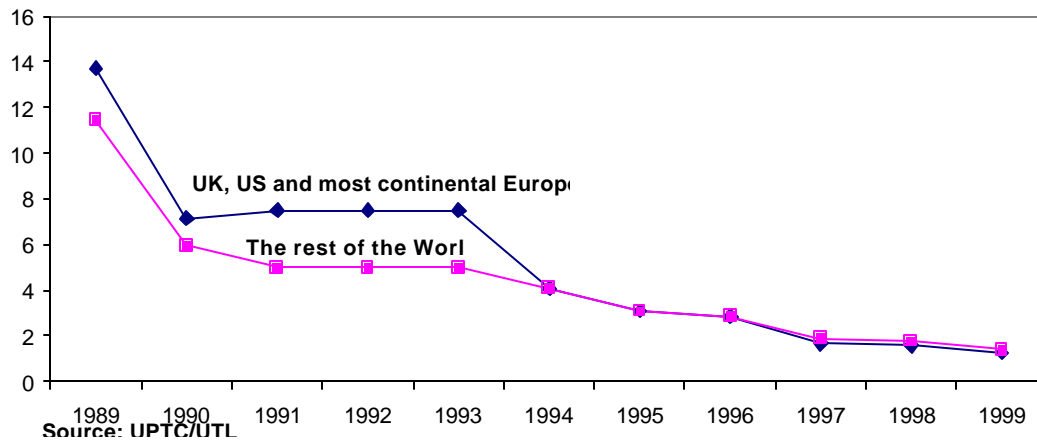
between US\$1,000 and US\$1,400 before reform, which is similar to the sub-Saharan regional average of US\$1,260 in 1993 (Figure 5).

Figure 5. UPTC/UTL Revenues per Main Line (In US\$)



During the pre-reform period in the first half of the 1990's UPTC's revenues were largely determined by earnings from international calls, which averaged 70 percent of all accounting revenues in 1993. This was the result of a deliberate policy to raise international rates from 1985 in order to reverse the international traffic flow. Because Uganda had more outgoing than incoming calls, UPTC had to pay other operators in scarce foreign exchange and the government hoped to discourage outgoing traffic (field interviews). Not only were international tariffs high, they were pegged to the US dollar from September 1991 to 1993. Pegging reduced UPTC's foreign exchange losses, but also further depressed demand, especially since the Ugandan Shilling was not convertible to hard currencies. When it became increasingly apparent that a high pegged tariff was not sustainable, tariffs were reduced (Figure 6).

Figure 6. UPTC/UTL Tariff for International Calls (US \$/ Min)

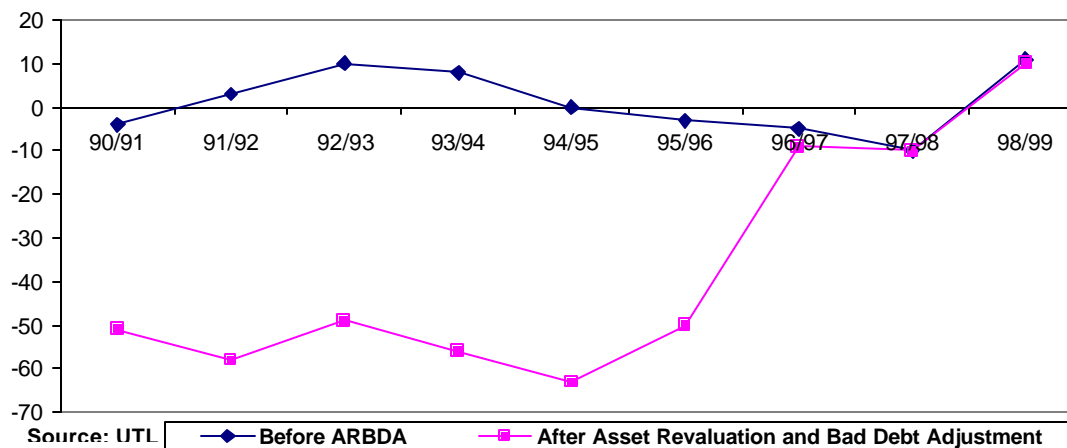


Although the volume of outgoing international calls increased after tariffs were reduced, it was not enough to offset falling tariffs and revenues decreased slightly. As a result, return on assets, which had gone up to a respectable 9 percent in 1993, fell sharply back to more historical levels (Figure 7).⁶

⁶ The UPTC/UTL accounts used for this report have been adjusted using the average rate for bad-debt provision, reporting losses from launch failures of Intelsat satellites the year they occurred; reporting administrative expenses, taxes and internal telephone usage revenues from prior years as prior year adjustments in 1996 rather than extraordinary items in 1996.

Figure 7. UPTC/UTL Return on Assets⁷

(Net Income as % Total Assets)

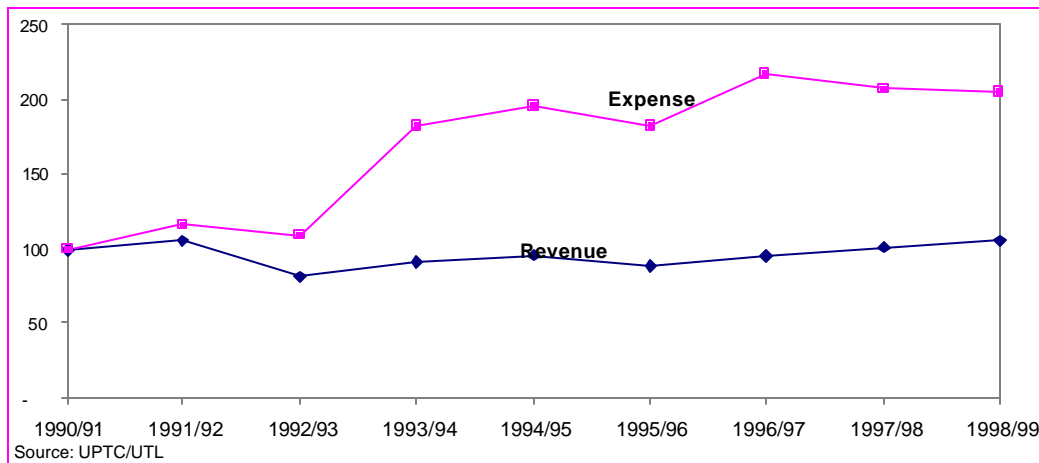


Meanwhile, expenditures continued to grow in the 1990's, driven by rising labor and administrative costs (Figure 8) and as a result the company's profits dwindled. Expenditure and revenue controls were weak and the company had persistent problems with inaccurate billing and weak collection (World Bank 1996). Provisions for bad debts were high (30 percent in 1993, for example), but not high enough; only about half of all accounting revenues were actually collected (Laidlaw and Parkinson, 1995). Collection problems were compounded by the government's delays in paying its bills combined with UPTC's inability to keep accurate accounts of government indebtedness (World Bank completion report, 1996). Informal practices of "netting off" debts between UPTC and other government agencies left balances that were usually owed to UPTC and seldom paid (Laidlaw and Parkinson, 1995).

⁷ The asset revaluation and bad debt adjustments involved the following: (a) Fixed Assets in operations, depreciation and inventories have been revalued using the CPI, and (b) Accounts receivables and provision for bad debts have been adjusted assuming a maximum of 180 days for collections. ARBDA refers to Asset Revaluation and Bad Debt Adjustment.

Figure 8. UTL Real Operating Revenues and Operating Expenses Index

(Base year = 1990/91)



Operating expenditures were equal to or exceeded operating revenues (including foreign exchange gains) during the latter part of the 1990's. However, since a large part of the operating revenues was not actually collected, UPTC's financial situation was much worse than these numbers suggest.

UPTC's balance sheet during the pre-reform period was dominated by foreign-currency debts owed to international and donor agencies and to other telecommunications agencies. Typically, UPTC would fail to pay the government for servicing the loans and in 1994 swapped some of its debt to the government for government receivables on its telephone bills.

In summary, UPTC was not a "cash cow" for the government; to the contrary it was a drain. Privatization would reduce government's exposure to UPTC's debts, and possibly improve tax revenues, although it would also presumably require government to begin to pay its telephone bills promptly. UPTC's weak finances were also a factor in

favor of competition. The government had less reason to want to maximize its sales revenues by giving an exclusivity period to UPTC's buyer, since it was not faced with the problem of replacing a revenue stream that would be lost when the company was privatized.

(iii) Regulation. UPTC was largely self-regulated. The Uganda National Frequency Registration Board (NFRB) was created to give "stakeholders", defined as ministries and agencies with an interest in the sector (Army, Police, Internal Affairs) a voice in policy, but most decisions were controlled directly by the company and its Board. The Minister of Works, Transport and Communication had the power to approve tariffs under the 1983 UPTC Act, but no clear process or criteria were detailed. In practice the Ministry would approve most of UPTC's tariff requests, albeit with long delays. According to the Act the Ministry also had the power to license other operators, but no provision was made for regulating interconnection.

UPTC's situation favored privatization with competition. In most countries telecommunications workers are the main opponents to privatization, and they are often strongly supported by bureaucrats who stand to lose power and perks if the firm becomes private. In Uganda there was no large government bureaucracy with a strong stake in the sector. The virtual absence of regulation also opened the way for a totally new regulatory body, with fewer ties to the incumbent operator than an existing bureaucracy might have had.

III. Political Factors Leading to Reform

Earlier we argued that circumstances in the telecommunications sector favored competition in Uganda. In this section we examine the political factors that precipitated the reform. This section first analyzes the changes that made telecommunications reform of any kind politically desirable. It then considers what led to competition.

(i) *Macroeconomic Crisis and The Impetus for Reform.* Shirley and Menard (2002) argue that reform in infrastructure is more likely when there are significant problems in the sector combined with a macro-economic crisis, usually hyper-inflation. We have already described the serious problems of the telecommunications sector in Uganda, but none of these problems was new and could not have precipitated the decision. What was new was the reform-minded government of President Museveni, and its response to the macroeconomic crisis and donor pressures.

Uganda has had a troubled history since its independence in 1962, suffering a series of bloody dictatorships and long civil wars. In 1986, the last civil war ended when Kampala fell to the National Resistance Movement (NRM) led by Yoweri Museveni. Initially the Museveni administration followed the previous government's policies of tight government control. Growth rebounded after the end of the civil war, but began to slow by 1988 (Figure 5). Support from international agencies and other donors had almost dried up, while inflation was high and rising (Figure 10) and there was a large and persistent budget deficit (Figure 11).

Figure 9. Uganda: Real GDP Growth Rate

(Average Annual Percentage Growth)

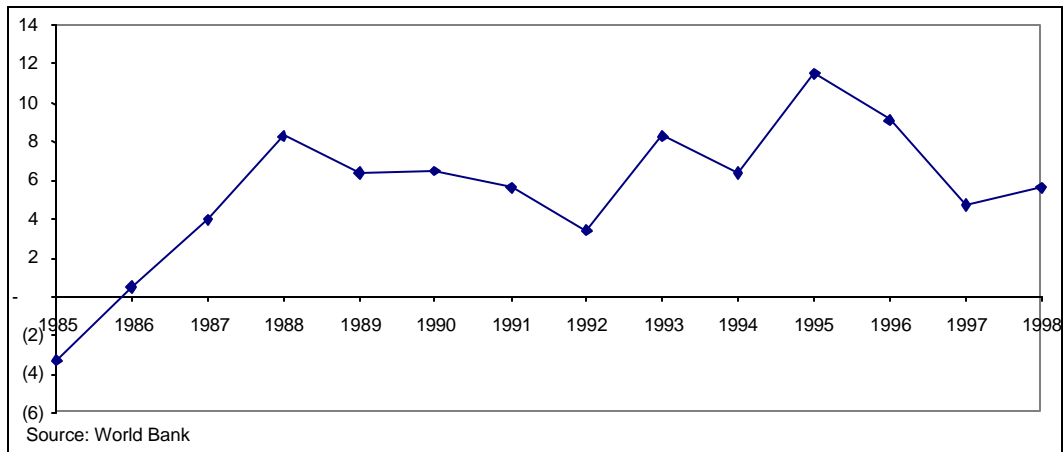


Figure 10. Uganda: Inflation

(% change in GDP deflator)

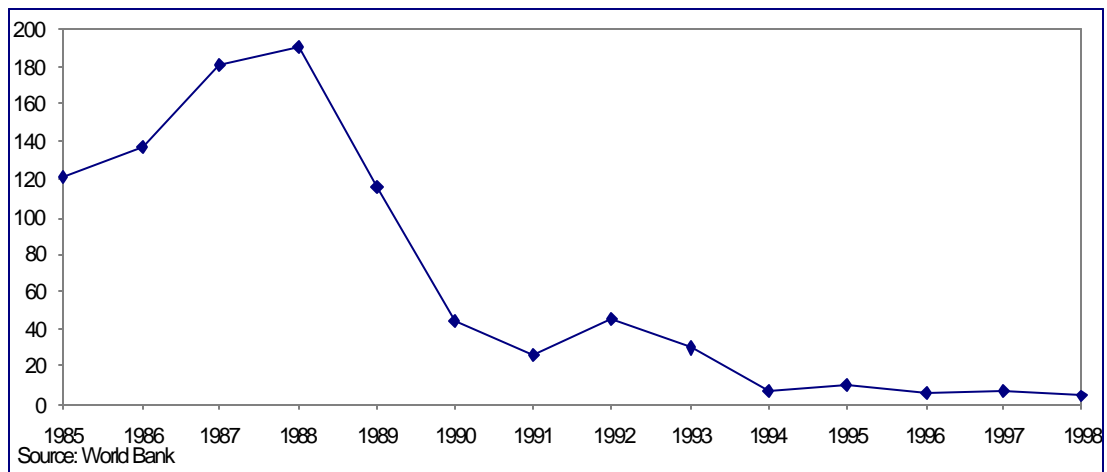
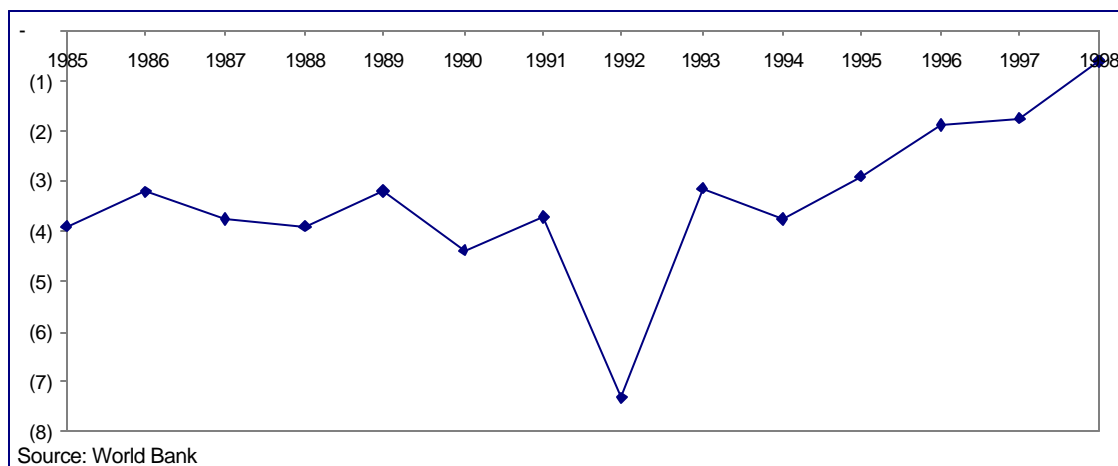


Figure 11. Uganda: Public Sector Deficit as a Percent of GDP



Persistent macroeconomic problems led the government to begin to liberalize the economy, and push for improvements in the operations of general government and the SOEs. While initially the government tried to improve SOEs, it became disillusioned with this approach, as we document in the next section.

(ii) Political Costs and Benefits of Privatization and Competition. Initially the NRM government favored state ownership and tried repeatedly to improve SOE performance. Indeed, various new enterprises were founded under ownership of the army under the umbrella of the National Enterprise Corporation. This policy was a practical one, aimed at improving efficiency and curbing corruption, rather than an effort to make political capital with SOE workers. To the contrary, the regime had no particular political stake in the survival of the SOEs. Museveni's initial support base was largely outside of Kampala and the government apparatus, with especially strong support in the resistance forces and southern farmers. After taking power in 1986, Museveni moved to develop a support base that incorporated many of the competing political, religious, regional and ethnic factions in Uganda, bringing their leaders into a no-party

government. The central bureaucracy was not part of his core constituency, as evidenced by his policies to reduce the size of government employment and decentralize power. The civil service was more than halved, and a number of measures were taken to decentralize power to the regions through the Resistance Councils (Mugaju 1999). When repeated efforts to reform SOEs failed, the regime abandoned the effort and turned to privatization.

Initially, Museveni's speeches suggested that he did not view telecommunications as a priority; rather, telecommunications was seen as a luxury, of limited importance to the new regime's supporters (field interviews). However, management paralysis, accusations of corrupt behavior and a subsequent inquiry convinced the government of the need to reform UPTC through privatization.

The circumstances that led to this decision began in November 1990 when UPTC's newly appointed Board of Directors decided to run the company on a day to day basis, resulting in frequent conflicts with some of the UPTC top managers (World Bank 1996). This resulted in long delays in procurement and other decisions, major holdups in the rehabilitation project, and unsubstantiated dismissals of key personnel, as well as accusations of irregularities in procurement. In response to these problems the Minister of Works, Transport and Communications appointed a Commission of Inquiry in September 1992. The Commission's report led to the replacement of most of the Board in November, 1993 and dismissal of members of management aligned with the Board in March 1994. The Commission's report cleared the board of corruption but exposed a

number of management weaknesses at UPTC, and contributed to the government's decision to privatize the company (field interviews).⁸

In addition to these problems, concerns were rising in the Museveni administration that bottlenecks in communication might threaten Uganda's rapid recovery of GDP. According to the Uganda Investment Authority, a poor telecommunication infrastructure was seen by potential investors as one of the obstacles to investing in Uganda. The government had decided to hold elections in 1996, and continued economic expansion would help cement its already strong position. Since multilateral and bilateral aid agencies were no longer willing to lend for investment in state-owned telecommunications companies, government would need a private buyer to supply new investment capital (field interviews).

The main opposition to privatization came from the UPTC workers, but they could not inflict serious political costs on the administration. The workers were not key to the regime's survival and had little public sympathy for reasons already discussed. (The opposition of UPTC management to privatization had no sway in the reform decision because of the 1993 Inquiry and 1994 layoffs of managers mentioned earlier.) UPTC's workers could not be entirely ignored, however, because of the regime's policy to be inclusive and rule abiding, so some concessions were made to win the union's support. The workers had pushed for voluntary retirements or termination of all employees, which the government rejected because of the expense of meeting UPTC's generous, unfunded pension obligations.⁹ Instead the government agreed to set up a

⁸ The government is reputed to have contacted IFC when the Commission's report was known and asked if the Corporation could sell UPTC in a month (field interviews).

⁹ UPTC had started as part of the East African Posts and Telecommunications Corporation which had agreed to very generous pensions.

pension fund that would be independent of the privatized firm, and agreed in principle to issue shares in the privatized company to the pension fund. The amount of shares to be issued is still under study: a figure between 5 - 10% has been suggested by the ministers responsible. Further negotiations/discussions will be held to firm this up. Government also agreed to worker participation in the management committees. Approximately 400 UPTC workers were laid off (based on age and health), with another 400 layoffs planned.

The political desirability of competition, as opposed to privatization, is harder to determine. One reported reason for the decision to offer a second network license is that the government was concerned about its ability to regulate a private monopoly (field interviews). Another factor seems to have been the lack of priority given to universal access. Unlike many state-owned telecommunications companies, UPTC did not have a universal service obligation.

The other political motivation factor is related to the earlier observation that UPTC was not a cash cow. The sector was therefore not viewed as a business opportunity from which more money could be made through reform. It was rather seen as a catalyst for investment, creating a strong motivation for independent regulation, liberalization, and open competition. The administration's lingering view that telecommunications were a luxury for most Ugandans added to their preference for competition and full cost recovery pricing over monopoly, even though the latter could use cross subsidies to expand access to poor communities. The government was also poorly disposed toward exclusivity due to its experience with Celtel (the first mobile operator). In 1994 Celtel was granted two years exclusivity in mobile cellular operations, which the government expected would ensure large and rapid investment. However one

year later Celtel was still having difficulty raising funds from investors, was creaming the market, and had not expanded rapidly, cooling enthusiasm for exclusivity in government circles (field interviews). The example of Ghana, which Ugandan officials had visited and studied, also influenced the Uganda government's decision to sell a second network license (field interviews). Finally, as we have seen, Uganda had less reason to expect that the proceeds from the sale of an inefficient and unprofitable UPTC would outweigh the costs of an exclusivity contract.

(iii) Political Feasibility. Political feasibility of telecommunications privatization and competition was never in doubt in Uganda. Museveni had ended a long and bloody civil war and enjoyed a long honeymoon. Most Ugandans wanted the restoration of normalcy and an end to conflict, and the President was seen as personally responsible for the present stability (field interviews). Furthermore, his liberalization program had been successful in reducing inflation, curbing the budget deficit and spurring growth, and was politically popular. Museveni's control over the pertinent decision making agencies was further strengthened by his decision to bring opposition leaders into his cabinet, building a consensus government. Under the circumstances no viable opposition to telecommunications reform emerged in parliament or the bureaucracy.

(iv) Credibility. Credibility that the new policy would be sustained was more doubtful, but several factors helped. First, the credibility hurdle has fallen in telecoms with the advent of new technologies that reduce investments in sunk assets compared to traditional wire line systems. Second, the government's reputation enhanced the credibility of its telecommunications policy. The layoffs in the civil service, privatization in other sectors (72 enterprises were sold for a total of US\$143 million), action against

corruption (in the Privatization Unit, for example), and peaceful and honest elections in 1996, all helped reassure investors that the government's reform promises were believable. Less credible were promises that the new regulatory framework would be enforced and a level playing field would be sustained in the future, through successor administrations. As we shall show later, this lack of credibility slowed, but did not halt the process.

IV. The Objectives and Implementation of the Reform

The rules that govern regulated industries are to some extent path dependent. It is important, therefore, to understand what were the government's objectives for reform telecommunications, and the specific transactions that took place.

(i) Objectives of the Reform. Initially competition was not a major goal of Uganda's telecommunications reform. The reform program was motivated by the 1993 report of the Committee on Investment in Telecommunications (CIT) described above, and was primarily meant to reduce government financial support to UPTC and remove a potential obstacle to the rest of the economic program. After reviewing the CIT report, the government issued a white paper in 1994 in which it proposed to divide UPTC into postal and telecommunications services, incorporate the telecoms services as Uganda Telecom Limited (UTL) and privatize 51 percent of UTL.

Only after considering various policy options did the government announce its decision to license two operators for basic services, UTL and a second network. At the same time the potential for competition was increased with the licensing of a private cellular operator, Celtel, in 1994; UPTC had no cellular service (see **Table 1**). The

prospects for competition were further enlarged that year with the license of Starcom, a privately operated company offering private voice and data services, public payphones and trunked radio service. In 1995 the government began the process of privatizing UPTC, now UTL, and selling the second license by hiring IFC as financial advisor.

The objectives of the reform, as detailed in the Uganda Communications Act (1997) focus on removing a bottleneck to business, reducing the scope of government activity, and encouraging competition. Paraphrasing, the objectives in the Act were the following:

1. Enhancing the coverage of communications services and products;
2. Modernizing and expanding postal and telecommunications services;
3. Reducing government's direct role as an operator in the sector;
4. Encouraging private sector participation;
5. "Introducing, encouraging and enabling competition in the sector through regulation and licensing competitive operators to achieve rapid network expansion, standardization as well as operation of competitively priced, quality services;" (Government of Uganda 1997)
6. Minimizing all direct and indirect government subsidies to the sector;
7. Establishing a fund for rural communications development.

As this list suggests, universal service, in the sense of telephone service for any one who wants to purchase it, was not the objective, but rather universal access, in the

Table 1. Timeline of Uganda Telecommunications Sector Reforms

Reforms	1993	1994	1995	1996	1997	1998	1999	2000
1. CIT submitted its recommendation for telecom reform (a)	Nov-93							
2. Workshop held to discuss the CIT's recommendation		Jan-94						
3. Government White Paper prepared (b)		Jun-94						
4. First private Cellular Operator and payphone service provider licensed (CelTel and Starcom)		Sep-94						
5. Draft policy options paper officially submitted to the GOU		Oct-94						
6. The GOU communicated its policy option decision (c)		Dec-94						
7. Paging Services Ltd. Started operation			Jan-95					
8. A number of minor licenses issued (mobile, VAS, etc.)			xxxxxx					
9. Starcom started operation			Mar-95					
10. CelTel started Operation			May-95					
11. The privatization process of UTL was started by hiring the IFC as Financial Advisor			July-95					
12. UTL slated for privatization for the first time			July-95					
13. The GOU announced upcoming opportunities in UTL to investors				Jan-96				
14. Seminar and Investor Forum held in Washington, D.C. and Kampala, respectively.					Apr-97			
15. Five Bidding Consortia pre-qualified for the SNO license					July-97			
16. Regulatory Consultants hired					Aug-97			
17. Communications Act passed by Parliament					Aug-97			
18. The GOU announced that two consortia had submitted bids for the SNO license					Dec-97			
19. The GOU announced that MTN won the SNO license						Jan-98		
20. UTL was incorporated						Feb-98		
21. Information Memorandum and bidder pre-qualification document for UTL issued						Feb-98		
22. Financial Restructuring of UTL approved						Feb-98		
23. Final negotiations with the SNO (MTN) completed						Mar-98		
24. MTN was awarded the operator license						Apr-98		
25. Pre-qualified bidder for UTL approved						Apr-98		
26. Parliament suspended the privatization program of UTL when only one bidder emerged						Aug-98		
27. The GOU accepted fresh bids from the Telecom Malaysia, WorldTel and Saskatel International (for the 2 nd time), but it did not materialize.						Oct-98		
28. The GOU put UTL for sale for the 3 rd time							May-99	
29. UTL successfully sold to a Telecel/Detecon consortium								Feb-00

(a) The recommendations of the Committee on Investment in Telecommunications (CIT) include the following:

1. Opening the Telecom Sector to private investment as soon as possible and privatizing the incumbent
2. Retention of monopoly on core services for at least 10 years and liberalization of the non-core ones
3. Splitting the Post and Telecom Divisions and establishment of a regulatory body
4. Immediate repeal of the existing law and setting up of a regulatory body to facilitate the liberalization process, and
5. Valuation of the assets and business of UPTC

(b) The White Paper was designed based on the CIT Report and the January 1994 Workshop. The paper was prepared for the Cabinet but remained unpublished.

(c) The GOU decided to license an SNO to compete head to head with UTL.

sense of providing conveniently accessible communication services. The Uganda Communications Act, 1997, provides for the creation of a fund to promote rural telephony, (which we discuss more later). Universal access called for a more equitable distribution of lines across regions as an objective, as reflected in the rollout obligations in the licenses for the second national operator (SNO) and UTL. The roll-out obligations by region for the first five years are given in **Table 2** for both UTL and MTN. The government's goals for growth outside of Kampala, as seen in Table 2, were modest. The location of some 70,000 out of the required 100,000 total lines was not specified. The government's pragmatic approach to access issues can be seen in its negotiations with the SNO. Initially the rollout requirements for the SNO were identical to those proposed for UTL (IFC 1997b). **Table 2** shows that the actual obligations negotiated in the license of the winning bidder (MTN) were for a lower number of new lines but with a larger proportion of new capacity outside of Kampala (45 percent compared to one third for UTL). MTN also agreed to connect a payphone to all 33 district capitals and every one of the 200 country headquarters that had electricity and road access to the site.

Table 2. Uganda: Network Roll-out Obligations for MTN and UTL

<i>Region</i>	<i>SNO subscriber lines</i>	<i>Of which, public payphones</i>	<i>UTL subscriber lines</i>	<i>Of which, public payphones</i>
Kampala Area	48,702	643	10,000	1,000
Central	13,885	437	5,000	500
Eastern	16,122	495	6,000	600
Northern	3,962	129	3,000	300
Western	6,934	296	6,000	600
Total Restricted Obligations	89,605	2,000	30,000	3,000
Unrestricted Obligations	0	0	70,000	0
TOTAL	89,605	2,000	100,000	3,000

Sources: SNO from MTN license, Annex 3. UTL from IFC. Information Memorandum. Sale of UTL. 1997.

Improvement in service quality was another objective. For example, both operators were required to increase local call completion rates from 50 percent the first year of the license to 85 percent by year five. The percentage of faults cleared within 24 hours was to rise from 50 percent in year one to 85 percent by year five. Digitalization was required to rise to 95 percent by year five in both networks, and the maximum time to connect a subscriber in an urban area was to go from four months in year one to two weeks by year five.

The realism reflected in the government's objectives bolsters the earlier observation that residential access to telecommunications outside of Kampala was not a matter of high political saliency in Uganda. Rather the Museveni administration was focusing on practical matters of how to remove a bottleneck to further investment and growth.

(ii) The Transactions. Government's initial plan was to sell the license for the SNO first, since there were some doubts about whether the second network would attract any bidders if UTL were sold first. Parliament, however, successfully argued that UTL would lose value if the SNO license were sold first, a position it reportedly adopted after lobbying by UTL union officials concerned that the SNO might quickly eclipse UPTC in size. Parliament inserted a clause in the 1997 Communications Act that required the simultaneous sale of the two licenses.

In the event, however, the time consuming process of incorporating UTL and sorting out its finances and worker relations delayed the UTL sales process to the point where the government requested and Parliament agreed to allow the SNO sale to proceed. Government also argued that it needed the proceeds from the sale of the SNO license to pay redundant UTL workers. This change in the Act supports our earlier argument that the

political clout of the UPTC workers was limited and that reform was feasible because Museveni could win support of the other decision making bodies.

Accordingly, the government proceeded to sell the SNO license in 1998. Five firms prequalified to bid, and two firms participated in the auction.¹⁰ The SNO license was sold through a unique bidding procedure designed to secure the government's dual goals of a good price and rapid rollout while discouraging bidders from inflating their promises of expansion beyond what they could deliver. Bids had two equally weighted parts, the first was simply the price for the second license and the second was the promised rollout of lines over the next five years. There was a minimum rollout of 50,000 lines, with a certain percentage to each region, set in the bidding documents. Mobile Telephone Networks of South Africa (MTN) won with a bid of US\$5.6 million for the license, US\$500,000 more than the second bid, and a promised rollout of 89,000 new lines. The SNO license was awarded to MTN in April 1998 (see Time Line).

The incorporation of UTL and the financial restructuring plan, were only finalized in February 1998, and pre-qualification of four bidders took place in April of that year.¹¹ However, three of the four bidders dropped out of the final bid, for various reasons. What is noteworthy is that none of those who dropped out cited competition from the SNO as one of their reasons.¹² The sole remaining bidder, Malaysia Telecom, offered a politically

¹⁰ The five consortia that prequalified were: MTN (Mobile Telephone Networks of South Africa); Portugal Telecommunications International (Utelnet); Uganda Communications (Mobile Systems International, Vodafone, Telenor, Teledev, Commonwealth Development Corporation, and Starlight Communications Uganda); Newtel (IPS, Nexus of France Telecom, and ATI Inc.); and Telkom South Africa. The auction participants were MTN and Utelnet.

¹¹ The four consortia that prequalified for UTL were: Telecom Malaysia Berhad, Telkom South Africa; consortium of Portugal Telecom, the Agha Khan Fund Economic Development, and Alta Telecom; and a consortium of WorldTel and Detecon.

¹² Portugal Telecom's consortium declined because it had committed to an opportunity in South Africa; Worldtel's consortium declined because the lead technical partner, Detecon, failed to commit the required 30 percent equity for five years; and Telekom South Africa declined because of country risks, the lack of a functioning regulator and concern over the financial status of UTL.

unacceptable price of \$11 million, and also asked for changes in the license that would have affected the structure of the market. The government suspended negotiations, and in August 1998 the Parliament, concerned with corrupt practices in other transactions, suspended all privatization activity. Eventually the UTL transaction was explicitly exempted from this ban and the Government, anxious for a sale, agreed to the use of a “fast-track” procedure for the second round (field interviews). Under this procedure the government attempted to drum up interest in UTL and from previous interested parties, and accepted fresh bids from three bidders in October 1998, but again none of the bids were acceptable.¹³

A third attempt at selling UTL was mounted late 1999 attracting 3 bidders and ended with the sale of 51% of the shares to a consortium of Detecon (Germany), Telecel Intl. (Swiss/Congo) and Orascom (Egypt) for US \$33.5 million. The sale was widely viewed as exemplary of an honest and very successful transaction. The sales price was higher than in any previous bid. Several factors may account for the higher price. One is that the regulator had now been operating for 20 months, and potential bidders could assess its personnel and view the degree of its independence from politics, and assess its track record with the private second operator. This was reinforced by the fact that government had demonstrated that it was going to stay out of regulatory issues unless its input was specifically sought by the regulator. There are instances where operators had earlier attempted to bypass the regulator in the hitherto traditional way by going directly to the Minister regarding regulatory issues. The Minister in all cases refused to intervene.

Another factor is that MTN and Celtel’s experience to date showed that there was much higher potential demand in Uganda than estimated earlier. As we discuss in more

¹³ Two of the three bidders (Portugal Telecom, Norstrad and Worldtel/Detecon) asked for delays, and eventually dropped out. The remaining bidder, Worldtel/Detecon, offered US\$23 million for 51% of UTL, however, it didn’t materialize at

detail below, in less than a year MTN put in place a cellular network that is two thirds the size of UTL, with 36,500 subscribers. Meanwhile, the existing cellular company, Celtel, has grown to 20,000 subscribers,¹⁴ and a number of value added, equipment and internet providers have emerged. The third factor is that for the first time in a very long time, UTL declared a profit during 1999, making it more valuable as a going concern.

Thus, contrary to conventional wisdom, the sale of UTL proved to be more valuable and viable into a competitive market than before competition was in place. And, also contrary to practice in many countries, delaying a sale until the regulatory body is up and running provides important comfort to bidders, that may make up for the cost of delay.

this time as the consortium fell apart when Worldtel failed to produce its share of the funds.

¹⁴ Some competitors claim that this overstates Celtel's actual subscriber base, but it is generally accepted that Celtel grew rapidly after MTN began operations. Celtel had 5,000 customers at the end of 1997.

V. The Regulatory Framework

According to Noll 1999, an effective regulatory system is one that is:

- (a) independent of day-to-day political pressures;
- (b) ruled by a clear legislative mandate to assure that service is provided through a competitive market to as many people as possible at prices that fairly reflect the cost of service;
- (c) operated by a regulatory authority that has the skills and budget to operate competently;
- (d) transparent in its decision making process, as well as in its rules and policies;
- (e) open to participation by all those who are significantly affected by a regulatory decision;
- (f) subject to a mechanism to advocate competition in the regulatory process, such as a competition agency; and,
- (g) subject to formal review by the judiciary and the statutory authority.

As we shall show, Uganda has met some of these criteria, but others are not well established. This section first considers how the regulatory framework looks on the statute books and then how it has operated in practice.

(i) The Regulatory Framework in the Statute. The regulatory framework on the books in Uganda seems in principle well designed to promote competition. The relevant laws and licenses create two bodies designed to have the power and mandate to assure fair competition. The first is the Uganda Communications Commission (UCC), created under the Uganda Communications Act, 1997, with the power to promote competition and to regulate interconnection (see Table 3 for a list of its functions). The UCC has independent

funding from licensing and spectrum fees. It also has a levy on the gross revenues of the operators (not to exceed 2.5 percent; currently 1%) which is set aside in full for rural communications development. It may also receive money from the government budget or borrow, but this has not been necessary to date. The Commission is designed to be professional; of its seven members, three are nominated by various professional groups, while the commissioners nominate their full-time executive director; all are appointed by the Minister.¹⁵

The law gives the UCC considerable authority to enforce its powers independently. All licensees must submit an annual report according to the UCC format, and the UCC can inspect their premises and logbooks, reports, data records, apparatus, and the like. The UCC can also modify any condition of a license; fine an operator up to 10 percent of its gross operating revenue, or suspend or revoke its licenses for breach of the license conditions, fraud, or similar violations. The UCC has the power to regulate tariffs and interconnection, and can impose default interconnection agreements if companies fail to reach agreement. The commission can investigate apparent cases of unfair competition and require the operators to pay a fine or declare any anti-competitive contract null and void.

¹⁵ Three of the members are recommended by the Institution of Professional Engineers, the Uganda Law Society, the Broadcasting Council respectively; the chair and two other “eminent persons” are decided on by the Minister; the UCC itself recommends the Executive Director to the Minister. The appointment of the members other than the Executive Director are subject to Cabinet approval.

Table 3. Principal Functions of the Uganda Communications Commission

(adapted from the Uganda Communications Act, 1997)

- | |
|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <ol style="list-style-type: none"> 1. To monitor, inspect, license and regulate communications services; to allocate and license the use of radio frequency spectrum; and to make recommendations to the Minister in relation to the issuance of major licenses ^a and to supervise and enforce the conditions of these licenses; 2. To establish a tariff system to protect consumers from excessive tariff increases and avoid unfair tariff competition; 3. To draw up, establish, amend and enforce a national numbering plan; 4. To conduct (or authorize any person to conduct) technical evaluations relating to communications services; 5. To set national communications standards and to ensure compliance with national and international standards; 6. To establish and run frequency and other monitoring stations; 7. To receive and investigate complaints relating to communications services and to take necessary action; 8. To promote the interests of consumers and operators as regards the quality of communications services and equipment; 9. To improve communications services generally and to ensure equitable distribution of services throughout the country; 10. To ensure that basic network operators provide leased lines for value added and other services as may be appropriate; 11. To safeguard the rights of operators and enforce the performance of their obligations; 12. To grant operators' rights to utilize public rights of way and to co-ordinate with relevant bodies to effect compulsory purchase or use of private property; 13. To promote competition, including the protection of operators from acts and practices of other operators that are damaging to competition and to facilitate the entry into markets of new and modern systems and services. 14. To regulate interconnection and access systems between operators and users. |
|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|

^a Major licenses include provision of local, long distance or international telephone services, trunk capacity resale, rural telecommunications, store and forwarding messaging, cellular or mobile services.

The second body safeguarding competition is the Uganda Communications Tribunal, which is designed to be a neutral oversight body that offers a process for dispute resolution. Aggrieved operators and others affected by the Communications Act can appeal the UCC or Minister's decisions to the Tribunal. It can thus protect the operators from abuse of

government power or favoritism to one operator, as well as from foul play by other operators. The Tribunal will consist of a judge, chairperson, and two other persons recommended by the Judicial Service Commission and appointed by the President, along with up to four technical advisors appointed by the Tribunal. The Tribunal has the powers of the High Court and follows the same procedures, and its decisions can be appealed to the Court of Appeal. It must be noted however that Uganda does not yet have any specific laws governing competition and clearly spelling out what would be anti-competitive practices in the general sense. As of September 2000, however, the Tribunal had not been constituted. In field interviews government officials stated that such a tribunal was expensive to maintain, and reported that there were suggestions that the Tribunal should be an ad hoc and not a standing body to minimize frivolous complaints.

Besides these pro-competition bodies, several clauses in the 1997 Act are specifically directed at the protection of competition. These include prohibitions against unfair practices, such as abuse of a dominant position to exclude or limit competition, or changes in the market structure that would stifle competition, for example anti-competitive mergers. The Act also prohibits UTL or its affiliates, shareholders or related companies from acquiring a direct or indirect ownership stake (more than 50 percent) in the SNO, and vice versa.

Before UTL was sold the regulator was in an ambiguous position, since the second operator could claim that the playing field was not really level as long as one of the parties was state owned. In addition, the other large private sector operator, Celtel, did not fall under the same regulatory regime. It also meant that the regulation had not really been tested, since UTL was not able to react to the incentives in the regulatory framework as a

privately owned incumbent would. Nevertheless some early weak and strong points can be identified. These will affect the sustainability of competition.

(ii) Regulation in Practice. Some early weaknesses in the regulatory framework are now apparent. In addition, several points of contention have arisen, not surprisingly in interconnection and technology. There are however also some strong points to note.

Weakness in the regulatory framework could also threaten competition. In many ways the UCC is a well designed regulator. It has wide ranging powers of information gathering, investigation, and action and a strong mandate to protect competition. The high caliber of its members and staff and an early reputation for being impartial and fair are also strengths. One potential weakness is its vulnerability to politically motivated interference. Although the UCC has considerable powers, it is not fully independent of the Ministry. Major licenses are approved by the Minister on the recommendation of UCC; the UCC budget must be approved by the Minister; and the law specifically allows the Minister to give the Commission “guidelines on sector policy.” This could open the door for political intervention in the Commission.

We must state here that establishing a tradition of regulatory independence is often as important as the statute. A critical aspect in creating a culture of regulatory independence is that government must avoid flouting the law, and using technicalities to interfere in the regulatory processes for political or personal interest. The practice so far in Uganda is that this tradition is being built up. There is no single instance to date where government has intervened in the regulatory process without the specific invitation of the commission; and this has been in regard to major licenses as required by the law, or relating to decisions prior to the establishment of the commission. The minister responsible has indeed had occasion

to protect the commission from interference from other ministers. This tradition will hopefully gain full hold.

Financial dependence on government is also a common channel for applying political pressure on regulators. To date, UCC has not had to get any money for its operations from the government budget. The only exception are inherited liabilities (resulting from the original split of UPTC) that the commission feels government should fund so that the Rural Communications Development Fund (obtained from the approved 1% levy) is not spent on settling inherited liabilities. The rural fund for telecommunications may provoke political intervention in UCC as well. The Communications Act is vague on how the fund will be administered and what criteria will be used to determine allocations. The general intent is to give the existing operators the right of first refusal and then auction access to the fund and to give priority to public payphones, but these are not yet spelled out in law. Since the amounts could be relatively large, the temptation to direct the fund to meet political ends is likely to be high.

Thus far, an important source of strength in Uganda's regulatory framework has been government's general concern to maintain its credibility with private investors. As long as this commitment is sustained, it will limit the extent of political intervention in the regulatory framework. However, experience elsewhere suggests that institutionalized independence is an important corollary to government's generalized concerns with reputation.

Interconnection is usually a major issue in competitive systems and Uganda is no exception. This issue first came to a head over the interconnection rates in Celtel's agreement with UTL (then still UPTC). UTL reportedly signed the 1993 agreement only

under pressure by the ministry because of management's view that interconnection rates for national calls favored Celtel because Celtel received higher interconnection prices than did UTL (field interviews).¹⁶ Under the 1993 agreement, when a national call originated in Celtel's network and terminated in UTL's, Celtel would pay UTL 17 percent of Celtel's tariff; whereas, when a national call originated in UTL's network and terminated in Celtel's, UTL would pay Celtel 90 percent of Celtel's tariff.¹⁷ The effect of this price imbalance on UTL grew over time as a traffic imbalance emerged. In the early years of Celtel's operations, the national traffic exchanged by Celtel and UTL was nearly balanced. But by the middle of 1996, the traffic began shifting so that by 1998, UTL customers were terminating two national calls in Celtel's network for every one call Celtel's customers were terminating in UTL's network.

Interconnection rates for international calls also moved in a direction that was perceived as adverse to UTL. In the 1993 agreement, Celtel had to pay UPTC 70 percent of its published tariffs for calls originating in Celtel's network (rates were between US\$0.83 and US\$3.10 in 1995 when Celtel began operating). UTL would pay Celtel US\$0.27 a minute for calls from outside Uganda that terminated in Celtel's network. However, these rates quickly became burdensome for UTL as its international tariffs declined (to US\$0.57 from US\$1.78 by 1998). International traffic flow accentuated the adverse effect of UTL's price change. From the time Celtel started operating in 1995 to 1998, an average of 68 percent of international traffic between the two networks has been from UTL to Celtel.

¹⁶ The default agreement provides for operators to pay for originating calls on each others' networks, but this feature is missing from agreements actually in effect.

¹⁷ In existing interconnection agreements in Uganda, interconnection is paid only for terminating calls, although the regulations include default interconnections agreements (imposed when parties fail to reach agreement) that also charge for interconnection of originating calls. The agreement in question between UPTC and Celtel calls upon UPTC to set a maximum tariff for callers from its network to Celtel of $(0.90 \times \text{Celtel tariff}) \times 1.39$.

From UTL's perspective, the net effect of the national and international interconnection prices and the traffic imbalance was to cause UTL to lose money from its interconnection with Celtel. UTL met extensively with Celtel to try to change the agreement and then suspended payment for two years until the Minister intervened and forced UTL to pay. Subsequently, UTL again suspended payment and demanded a new agreement. After MTN entered the market, both Celtel and UTL signed interconnection agreements with MTN on very different terms from the one they shared. As can be seen in **Table 4**, the other interconnection agreements show much greater reciprocity.

Table 4. Uganda: Interconnections Charges

(US Cents per minute)

Calls	1999			2000			April-01 ^j				% Inc (Dec) 00/99			
	UTL	Celtel	MTN	UTL	Celtel	MTN	UTL ^f	UTL ^m	Celtel	MTN ^f	MTN ^m	UTL	Celtel	MTN
Local														
Calls from UTL ^f		17.16 ^a	6.00 ^b		13.89	5.00		??	13.89	5.00	7.11		(19)	(17)
Calls from UTL ^m		17.16 ^a	6.00 ^b		13.89	5.00	??		Not yet	7.11	7.11		(19)	(17)
Calls from Celtel	3.24 ^c		23.46	11.11		8.89	11.11	Not yet		4.44	8.89	243		(62)
Calls from MTN ^f	4.00 ^d	23.46		3.33	8.89		5.00	7.11	8.89		??	(17)	(62)	
Calls from MTN ^m	4.00 ^d	23.46		3.33	8.89		7.11	7.11	8.89	??		(17)	(62)	
National														
Calls from UTL ^f		17.16 ^a	6.00 ^b		13.89	5.00		??	13.89	5.00	7.11		(19)	(17)
Calls from UTL ^m		17.16 ^a	6.00 ^b		13.89	5.00	??		Not yet	7.11	7.11		(19)	(17)
Calls from Celtel	3.24 ^c		23.46	11.11		8.89	11.11	Not yet		4.44	8.89	243		(62)
Calls from MTN ^f	4.00 ^d	23.46		3.33	8.89		5.00	7.11	8.89		??	(17)	(62)	
Calls from MTN ^m	4.00 ^d	23.46		3.33	8.89		7.11	7.11	8.89	??		(17)	(62)	
International (US & UK)														
Calls from UTL ^f		24.52	93.33 ^h		18.00			??	13.89	??	??		(27)	
Calls from UTL ^m							??			??	??			
Calls from Celtel	84.00 ^f		102.00 ⁱ	73.89			68.33			0.41	0.41	(12)		
Calls from MTN	93.33 ^h	N/A ^g					??	??	N/A					

Source: Celtel, MTN and UTL Interconnect Agreements

Note: Average exchange rates of Ush 1,500, Ush 1,800 and Ush 1,800 per US\$ have been used for 1999, 2000 and 2001, respectively.

: F = Fixed and M = Mobile

a. The interconnection charge is 90% of Celtel's tariff which is pegged to USD.

b. Ush 54 (US Cents 3.96) for economy and Ush 27 (US Cents 1.98) for super economy depending on time of the day.

c. The interconnection charge is 17% of Celtel's tariff which is pegged to USD.

d. Ush 36 (US Cents 2.64) for economy and Ush 18 (US Cents 1.32) for super economy depending on time of the day.

e. The interconnection charge is 70% of UTL's tariff.

f. Average rate. Rates range from Ush 1800 (US Cents 132.16) to Ush 1150 (US Cents 84.43) depending on the destination country.

g. Celtel doesn't route its incoming international traffic through MTN's international gateway.

h. The charge applies for international outgoing traffic. The interconnection charge for incoming traffic is 36% of International Accounting Rate.

i. The interconnection charge for Celtel - MTN fixed terminated local calls is US\$ Cents 4.44, and the charge for MTN - UTL fixed to fixed calls is US\$ Cents 5.00.

Table 5 : Comparison of Fixed Termination Interconnection Charges (1999)

(US Cents per minute)

Country	Operator	Local	DLD	Average
UK	BT	0.85	1.29	0.94
Netherlands	KPN	1.40	1.71	1.46
Australia	Telstra	1.30	2.23	1.49
Greece	P&T	1.57	2.24	1.70
Sweden	Telia	1.70	2.11	1.78
Chile	CTC	1.78	1.78	1.78
Denmark	TeleDenmark	1.95	2.30	2.02
Belgium	Belgacom	2.16	2.85	2.30
Bolivia	Entel	2.31	2.31	2.31
New Zealand	TCNZ	2.35	2.35	2.35
Japan	NTT	2.15	3.27	2.37
Italy	Telecom Italy	2.23	3.04	2.39
Mexico	Telmex	2.60	2.60	2.60
Argentina	Telefonica	3.35	3.50	3.37
Average		1.98	2.40	2.06
Uganda (1999)	UTL	3.99	3.99	3.99
Uganda as % of sample average (99)		202	166	194

Source: Briceno, Arturo; International Comparison Study about Interconnection Charges, OSIPTEL, Peru, 1999

Various Interconnect Agreements, Uganda

Note: DLD = Domestic Long Distance

Initially, the arrival of the UCC on the scene did not make an appreciable difference in the dispute between UTL and Celtel. The Commission was reluctant to impose the default interconnection agreement, which is seen as harsh, on the parties (field interviews). So far UCC, has not had to call upon the force of the law to get disputes settled. The established tradition now is that all stakeholders are given a chance to have their say before decisions are made. UCC has presided over many meetings to iron out disputes between service providers, especially the major ones.

As of November 1999 a new agreement was being finalized under which Celtel would pay Ush 200 per minute for national calls that terminate in UTL's network and UTL would pay Celtel 250 for calls terminating in Celtel's network. It would also change the international charges, particularly for calls from East Africa. This agreement was concluded, but it did not cover the issue of the proposed UTL mobile network, which both

parties agreed to handle in due course. The situation still obtains at the end of the current study period. The operators were given a ninety-day deadline that is almost expiring to resolve the interconnect agreement. The new UTL management want a comprehensive renegotiation because they feel that what was arrived at by previous management is not fair to UTL. Celtel is insisting on looking only at the UTL mobile interconnect. Every indication is that UCC will have to formally intervene.

The MTN:UTL interconnection agreement took six months to work out, but was resolved with charges that are likely to be sustainable since it was mutually agreed, reciprocal and low compared to past standards in Uganda (see Table 4). It will be noted from the current rates that calling from either network outside peak times is the same for inter and intra-network traffic. It should be observed that the current size of both networks makes it mutually beneficial to be reasonable about the interconnect agreement. Similarly, MTN and Celtel have concluded on the interconnect rates on a reciprocal basis, with the exception of international traffic which Celtel cannot route. An interesting regulatory issue has arisen with regard to international traffic. Celtel cannot handle it directly, which means they have to use either UTL or MTN. Since this does not guarantee either of them carriage of the traffic, UCC has argued that Celtel could as well switch its international traffic through another party. This decision is to be incorporated in the revised Celtel license. This way, Celtel can offer more competitive international rates.

UCC's approach to interconnection to date has been to try to allow the operators to resolve the issues, and give them 90 day deadlines for doing so with implicit rather than specific threats. As Noll 2000 found in Mexico, since interconnection inherently causes disputes between carriers, bilateral negotiation does not work well and the "presupposition

in favor of negotiation simply causes delay.”(p.20). The UTL-Celtel case demonstrates this. A second problem is that carriers may treat the interconnection prices as a floor on usage prices, and this reduces the effects of competition. Table 5 suggests that interconnection prices in Uganda are high by international standards, which means that usage prices will start from a high floor.

Other disputes have not been resolved. UTL was not required to comply with MTN’s request for more than one point of interconnection in Kampala, apparently because of physical constraints in its outmoded network, nor did it have to let MTN put in equipment to improve the interconnection.

Both Celtel and MTN have experienced capacity restrictions on their interconnections with UTL. Celtel’s constraints stem from the disagreement about rates, while MTN’s are due to its own mistakes in underestimating demand, as well as UTL’s limited connection capacity. These capacity constraints have made it difficult to complete calls between networks, which has created the impression in the minds of some customers that Celtel and MTN provide a service that is inferior to UTL’s service (field interviews).

Interconnection disputes are likely to increase and become even more acerbic after UTL is privatized. Experience elsewhere suggests that private operators have a stronger incentive to try to put rivals at a competitive disadvantage since they directly benefit from profitability. Moreover, UTL’s management was hampered in responding to competition by the Ministry; many decisions were outside their hands. As the newly private UTL adds capacity, new issues will arise with important implications for competition, such as whether new investment will reduce congestion that most affects other operators and whether

additional points of interconnection will be allowed. The sustainability of competition in Uganda telecommunications will depend on how the UCC resolves these issues.

Technology. Another area of potential problems for UCC is the legal treatment of new technologies. Rapid technological change has challenged many regulatory frameworks and Uganda is no exception. One manifestation of this is the ambiguity of treatment of MTN in the license and subsequent regulatory decisions. MTN's system is entirely cellular and according to its license cellular telephone rates are not regulated, but voice telephone rates are regulated, "whether by fixed or wireless technology." The government has decided that fixed wireless prices are regulated; fixed wireless includes business services for large buildings and residential cellular phones that are not mobile. In effect this could mean that all MTN rates are regulated, since the distinction between fixed wireless and mobile is vague and very difficult or costly for a regulator to verify. The UCC has already received a number of complaints about the statute's treatment of fixed cellular.

Another ambiguity has arisen over whether mobile phones count as subscriber lines for the purposes of MTN's rollout agreement. The Government (and hence the regulator) have not clearly defined what constitutes a "line" in the face of changing technology. This is very important to MTN, which had to put up a bond worth \$20 for each promised line (\$5 million in total) with the understanding that the money would be returned to them when they met the obligation. In 1999 they asked to be reimbursed for the lines they had connected to date but the government was unsure whether a cellular subscriber should be counted as a "line" and was delaying payment. The UCC has been trying to make the regulation "technology neutral" and has agreed with the operators that there will be an annual review

of definitions like subscriber lines to take into account changing technology. UCC is also considering a scheme to define differences in lines only in terms of the quality and grade of service. Under this definition, if, for example, the mobile cellular grade and quality of service is improved to some agreed levels, cellular subscribers, through suitable factors, could be counted as part of the obligatory roll out.

A third illustrative ambiguity relates to what are called "satellite" services in the licenses. While MTN was rolling out their cellular network towards North Western Uganda, targeting the prosperous community in the area bordering Congo and Sudan, Celtel established a VSAT link and launched their services in Arua ahead of MTN. MTN lodged a formal complaint that Celtel was not allowed to offer "satellite services". Several meetings could not resolve the issue of differing interpretations of "satellite services" and "links". The compromise was a formal suspension of Celtel's plans to reach other areas via VSAT, but permitting them to maintain their link to Arua. This issue must necessarily be revisited by UCC for formal resolution.

Neutral oversight mechanisms act as a buffer against abuse of power by the regulator or government and increase the credibility of the regulatory contract and the chance that it will be sustained. Although legal resolution of disputes is usually a last resort, the presence of a credible threat of legal redress acts as a check on all actors, including government actors. Uganda's Tribunal has not started operating yet and it is too early to know if it will be a source of strength or weakness. On the pro side, the specification of procedures for appeal beyond the Minister is a safeguard in and of itself. The way members are appointed (recommended by judicial commission, appointed by President) increases the likelihood that the Tribunal will be objective. Does a specialized body such as the Tribunal

improve oversight and dispute resolution? Uganda's High Court was reported in field interviews to be reasonably objective and independent of the government, but weak in enforcing its decisions; lower courts were reported to be vulnerable to corruption.

The Tribunal has no advantage over conventional courts in enforcing its decisions, but Tribunal members will have an emptier docket and will therefore be able to respond to complaints much faster than a regular commercial court. Since their only focus is telecommunications, they could become better informed about the industry than a general court, important where technology is changing rapidly. On the con side it could be unwieldy and expensive to convene this special court just for telecommunications disputes; (there is discussion underway about folding it into a multi-sector Tribunal to serve a proposed public utilities commission).

To date, the Uganda Communications Tribunal has not been established, and indications from government are still that it might not be established. It is argued that in the interim, the constitution permits all entities to appeal to the High Court on any issue.

Operations and Transparency of the Regulator.

Price Regulation: While there is provision for tariff regulation, there has been no intervention by UCC. The effect of competition to date has been a continuous decrease in tariffs in real terms (pegging to the dollar). UCC has decided that so long as market forces are doing the job, they will not intervene. This is also to UCC's advantage because it has not yet built up the capacity for tariff regulation. There are complaints on record of under pricing by MTN with Celtel as the complainant. UCC has had to rely on defense by the accused party to take a decision. UCC lacks the capacity, so far, to carry out its own

independent assessment. The same goes for regulatory accounting. The newly approved organizational structure combined with intensive training is going to develop expertise in this area.

Operators' Reports: UCC is just learning that operators do not necessarily comply with reporting requirements. For the first time, it has specifically raised the threat of penalties for failure to comply. It must also be stated that UCC has not yet fully grasped the *why* of reporting in terms of building up sector performance indicators. This means that there is no well-defined format in place for the reports. A well defined format can only be produced with clear knowledge of what information is required from reports. Without clear objectives, reporting becomes simply a data collection exercise.

Public Interaction and Transparency: UCC has initiated public consultative workshops on important issues, to hear from operators and consumers on major issues. One major issue has been the Rural Communications Development Fund (policy and strategies) where two public workshops have been held. Another is the national internet exchange point where stakeholders were convened by UCC so that they set up a joint non-exclusive venture to establish an IXP. A third important effort was a full day workshop aimed at simply hearing from service providers and the consumers, and also setting up a public forum for service providers to hear from consumers. UCC has also publicized its licensing procedures, including timing for public advertisement and comment or reaction to any application. UCC has however never held a formal public hearing, and indeed has not yet established procedures for such a hearing. It also has not, despite earlier enthusiasm and proposals by Commissioners, ever held a public Commission meeting.

License and spectrum fees: License fees and spectrum fees have not yet been rationalized, again due to limited internal capacity. The process to outsource this review is underway. The general view is that all charges should be kept to the minimum consistent with regulatory costs and acceptable build up of the rural communications fund. It is believed that excessive charges would only be passed on to users, slowing sector growth.

Organizational structure and employee benefits: UCC has been set up as a modern organization compatible with the telecommunications sector. While there are a few members of staff with telecommunications experience, emphasis is on identifying bright young people who will be properly and fully trained in the different aspects of regulation. It is inevitable that there will be limited capacity for the initial period, but this should be overcome within two to five years. All employment is on contract (two years apart from the Executive Director who has a statutory five years), renewable based on performance. Benefits are generally in line with the benefits of employees in the sector in Uganda. The organization has remained lean and flat.

In summary, it has to be recognized that the regulator still has a lot of organizational weaknesses, but has two major strong points: a growing track record of fairness and transparent methods of work; and a growing tradition of non-interference from government.

Privatization of UTL. The privatization of UTL has increased competitive pressures in the Uganda market. This was clearly evidenced by the launch of UTL's mobile network. Two weeks prior to the launch, MTN launched a major publicity and promotional campaign, offering a package of a SIM card, service fee for one month, some air time, and a handset for shs 140,000 (1\$=shs 1,800). UTL launched their network with a similar

package at shs 120,000 and no service fee for 5 months (compared to MTN's shs 18,000 and CelTel's shs 17,500 per month). CelTel offered the package at shs 160,000, and now debits the monthly service fee to customer's credit on a per day basis rather than as a lump sum. More recently, UTL advertised a new package: a dual band set for shs 120,000, inclusive of shs 8,000 air time and a SIM card. MTN then advertised exactly the same set at shs 115,000, inclusive of 10,000 shs airtime and shs 18,000 service fee and a SIM card. (UTL currently does not charge a service fee). CelTel offered the same set and a similar package at shs 110,000. It remains to be seen if the downward trend in access and usage costs will continue. It is nevertheless remarkable that a package like this is available in Uganda for about \$60.

As we show in the next section, the government was understandably reluctant to invest new capital in UTL before it was sold, and service quality was declining. Although it had the third cellular license allowed under the exclusivity agreement, it could not move fast enough to take advantage of this opportunity due to bureaucratic delays in getting the necessary approvals for major capital expenditure from the Privatization Unit. All the planning was however largely concluded by the time UTL was sold, enabling the privatised company a comparatively fast launch of the mobile operation. Similarly, UTL reportedly had the best sites for payphones but although it accelerated installation, maintenance of the phones was poor.

Privatization of UTL has had other beneficial effects on competition besides making the company a more effective market player. The clock could only start ticking down the five-year period of the exclusive duopoly for MTN and UTL after the UTL license was signed on July 25, 2000. Privatization has also helped the UCC by resolving its ambiguous

position vis-à-vis UTL since forcing UTL compliance was really the same as forcing government compliance, never an easy job in the developing countries of Africa. Since UTL was sold, there have really been no major regulatory issues that can be used to judge the regulatory trend with more effective competition in the field. As expected, there have been cases where UTL and MTN have had a convergence of views in protecting their National Operator status. Both of them, for example, do not want Celtel to be given National Operator status, leading to mandatory right of access to land, even if Celtel is, by law, a major licensee. (Celtel is getting a new license reclassifying it as a major licensee because the Act classifies Cellular licenses as major licenses. By the same token, they will have to take on quality and roll out obligations).

While no specific evidence can be cited, the general view in UCC is that the major operators have all been more reasonable since UTL was privatized. Maybe the major concern of all players is competitive positioning. The rows between service providers have also reduced with the recognition of mutual commercial advantage in sharing facilities and improving interconnects.

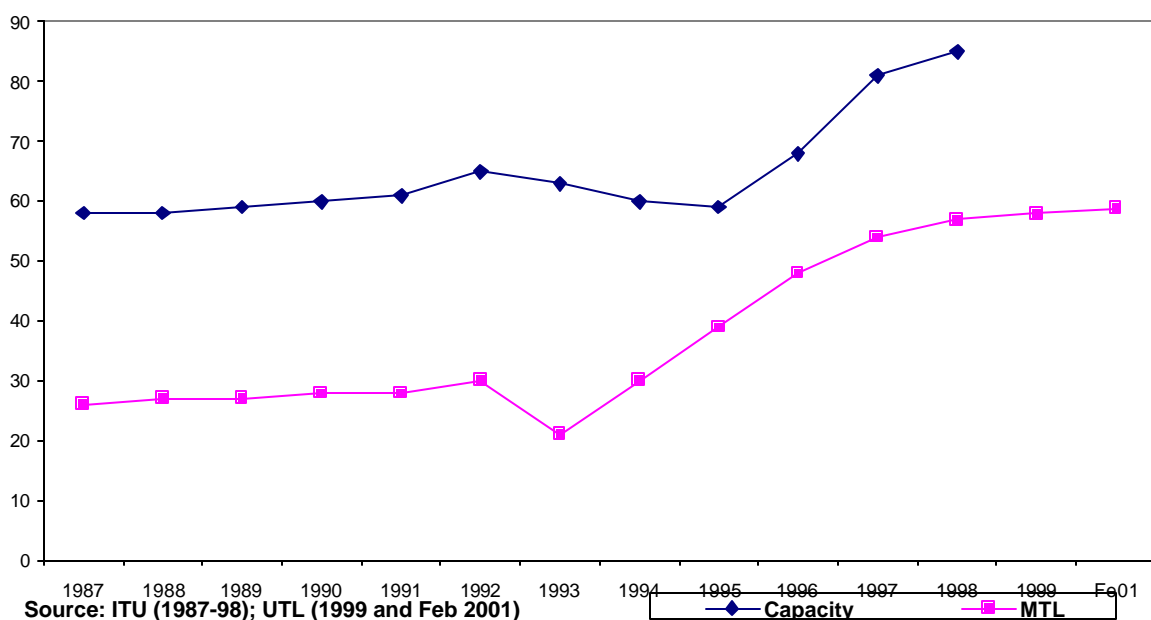
VI. Reform Outcomes

This section analyzes the effects of the reform on growth, access, tariffs and the profitability and productivity of UTL. Recall that our premise is that competition will spur expansion of the system, reduce end user tariffs and encourage efficiency. It seems fair to say that thus far Uganda has had a reasonably competitive telecommunications market with reasonably effective regulation. UTL was somewhat hampered in responding to competitive pressures from the other two operators because of restraints imposed by the ministry, but as

the incumbent operator with the lowest cost system, it also had important advantages over its competitors.

(i) Growth in Capacity and Access. There has been a surge in capacity and access, first with the improvement of UTL's capacity in preparation for privatization, followed by the entry of Celtel and MTN. UTL's active capacity had been flat at around 62,000 local exchange connection capacity from 1989 to 1993. With the completion of the World Bank rehabilitation project and the improvement in UTL maintenance, its capacity began to improve (Figure 12) as well as the utilization of available capacity which increased from 46% in the early 1990s to 70% after the completion of the project (IBID).

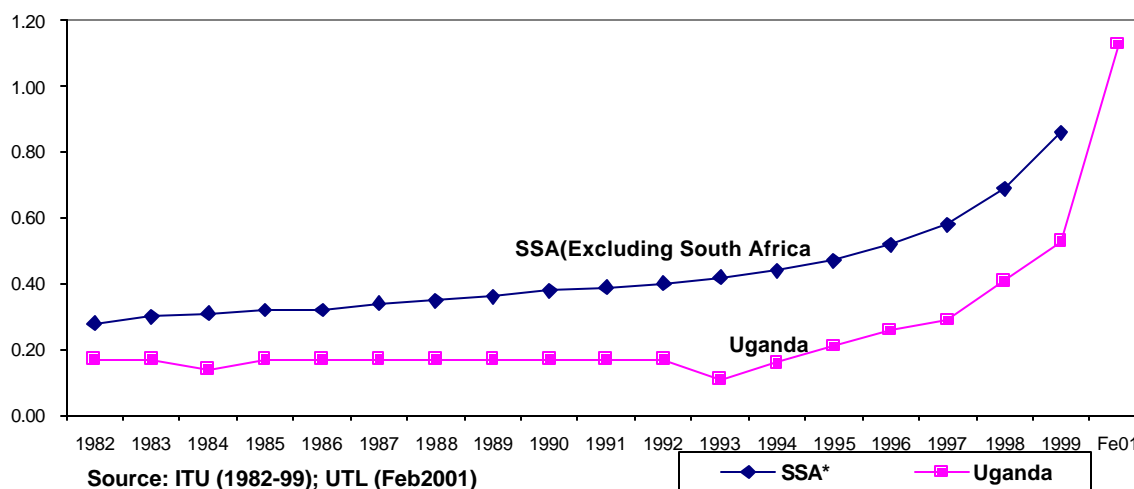
Figure 12. UTL Capacity and Connected Main Lines (in '000)



The total telephone penetration, main lines and cellular per 100 inhabitants, also increased substantially and the country just crossed the 1.00 teledensity level at the end of

year 2000 (Figure 13). Therefore, Uganda, which was far below the regional average prior to reform, caught up with the region after reform. Assuming no entry and the incumbent's 1990-1999 average teledensity growth rate, the incumbent operator would not have achieved this level of penetration until 2024.

Figure 13: Main Lines and Cellular Subscribers Per 100 Population¹⁸

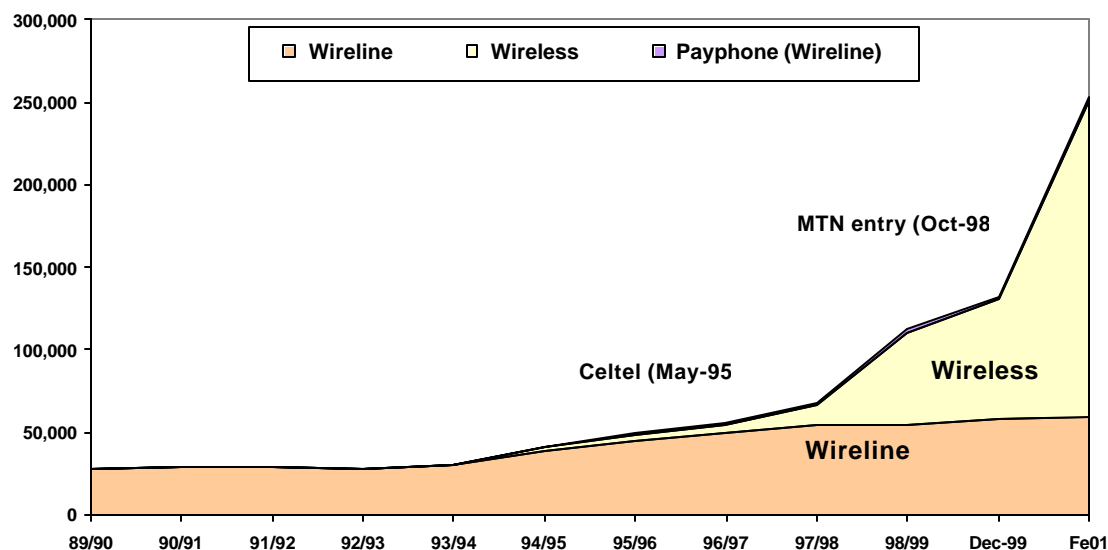


At the time of MTN's entry in October 1998, UTL had 55,749 subscribers and Celtel had 8,100 wireless subscribers. A year later, UTL was at still about 55,000, Celtel had grown to 19,074, while MTN had 53,528 subscribers. In addition UTL had installed 1,333 payphones and Starcom had 100 (Figure 14). By the early part of 2001, the telecom landscape had significantly changed with UTL serving 10,000 new wireless subscribers although its fixed subscribers did not show an appreciable change, Celtel and MTN serving about 32,934 and 149,216 wireless subscribers, respectively, and Starcom being out of the market. Overall, connected customers grew by about 267% in about two and a half year

¹⁸ A main telephone line is defined as a line connecting customer equipment (e.g. telephone, fax) to the public switched telephone network and which has a dedicated port on a telephone exchange. This category does not include cellular or other wireless lines.

after the MTN entry. Obviously, competition and the introduction of prepaid are the main factors behind this market spur.

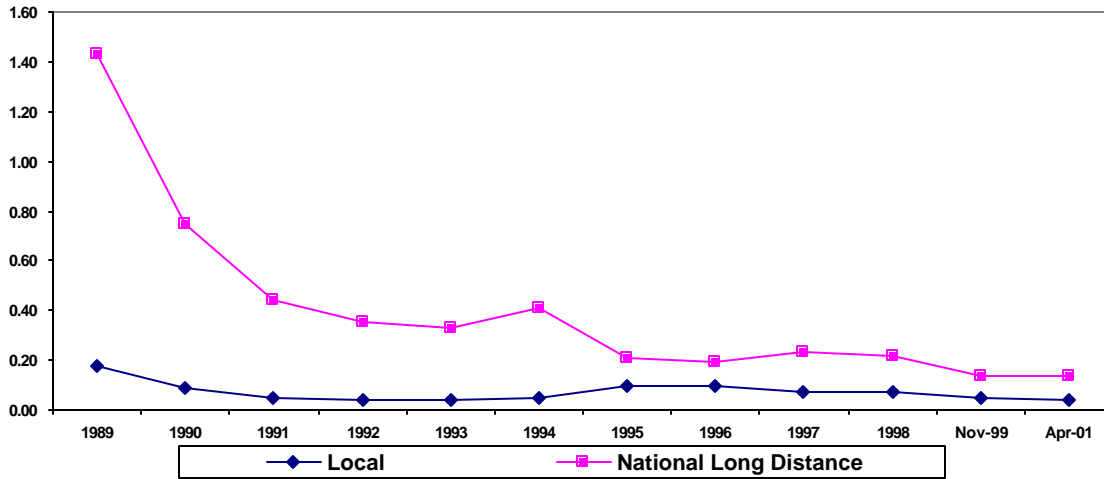
Figure 14. Uganda: Telephones In Operation



(ii) *Tariffs*. UTL's tariffs have decreased, thanks to the end of pegging to the US dollar described above, and rebalancing in 1994 and again in 1997. As we saw in Figure 6 above, UTL's real international tariffs have dropped sharply. The average per minute charge for national long distance calls has also dropped in real terms, while the cost of local calls went up in 1995, then fell again in 1997 (Figure 15). UTL's one time connection charge and monthly subscription charges, which had been well below the average for sub-Saharan Africa, have increased in real terms (Figure 16) and are now above average.¹⁹

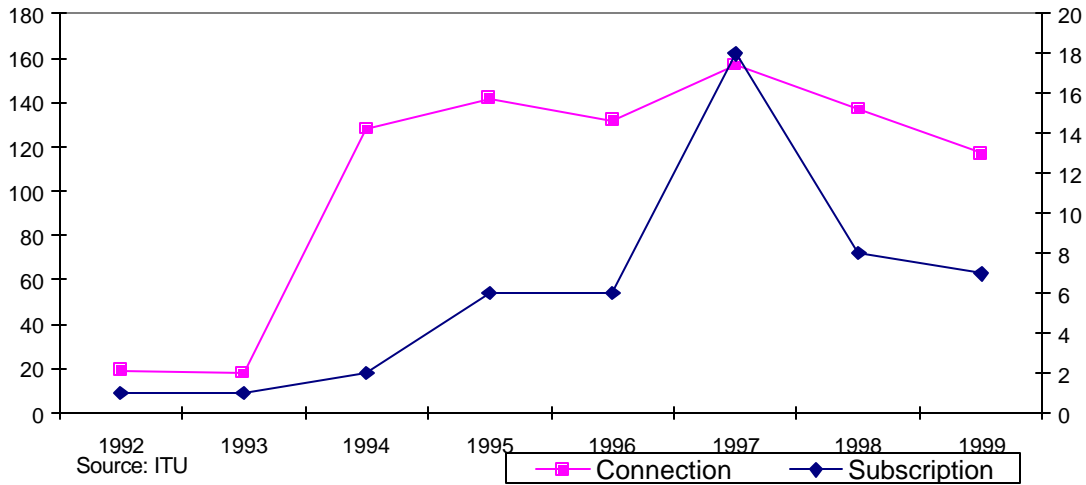
¹⁹ UTL's 1998 monthly subscription charge was \$8.06 compared to an average in 41 Sub-Saharan African countries of \$9.76 for business lines and US\$9.12 for residential (ITU). Its connection charge was US\$137 compared to the regional average of US\$108 for business and US\$88 for residential (ITU).

Figure 15. UTL: Local & National Long Distance Tariffs for Fixed Line Calls
(In current USD per Minute)



Source: UPTC/UTL
^aNational long distance is a weighted average of the price per minute for different distances. Local calls are less than 30 kms.

Figure 16. UTL: Connection & Monthly Subscription Charges
(In Current USD; Connection = left scale and Subscription = right scale)



Note: Connection charge is one time; subscription charge is monthly.

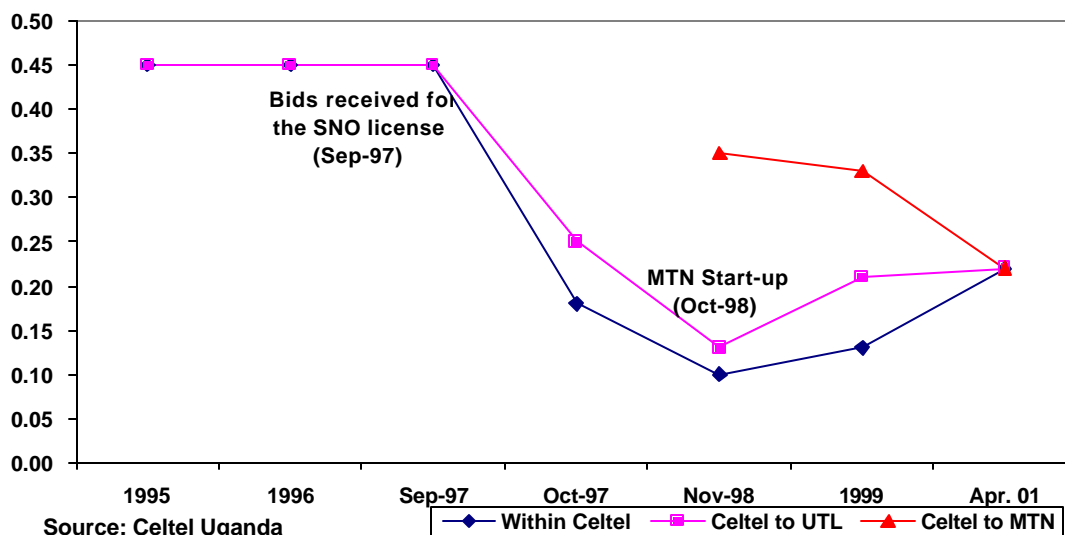
MTN's per minute tariffs have not changed much since it entered the market, when its rates were competitive with UTL. MTN's per minute rate for domestic calls is the same as UTL's -- 250 Ush per minute -- while its charge for international calls -- Ush 2,200 -- is

above any of UTL's charges (*Table 6*).²⁰ There is no connection fee, although in July 1999 MTN added a monthly subscription charge of Ush 18,000 a month for pre-paid customers. This compares to UTL's subscription charge of about Ush 19,000 a month and Celtel's of Ush 17,500. Surprisingly, the service fee has not reduced the cellular growth for MTN as earlier expected largely because they have conducted an aggressive network expansion, adding value for their existing customers: Most parts of the country can be reached using the MTN network at the local telephone cost. This alone has caused some people to migrate from the CelTel network (field interviews) forcing CelTel to increase the pace of their network roll-out. MTN also appreciated the big market in SMS and phone email, and introduced them ahead of its competition. Cellular competition has had an influence on the price of a handset, which has fallen from about US\$2,000 when Celtel started operations to approximately US\$100 at the end of 1999. As stated earlier, one can get a new fully connected modern dual band set with WAP (even if WAP is not available in Uganda yet) at \$60. A robust market for used handsets and resale of cellular and payphone usage have also emerged.

²⁰ In 1998 UTL charged Ush 1,800 per minute to the UK, most of continental Europe, US, Canada and Japan, Ush 1,500 to the COMESA countries of Africa, Ush 650 to East Africa and KBO countries, and Ush 2,050 to the rest of Africa and the world.

Figure 17: Celtel Mobile Local/National End User Tariffs

(USD per minute; peak time contract plan tariffs)



It is interesting to note how Celtel, being the first private entrant, reacted to the changes in the market structure and changes in interconnection charges over time. Celtel's local and national tariffs, which remained unchanged for almost three years since it started operation in 1995, dropped by more than 50% at the end of 1997 apparently in response to the bid conducted for the SNO license (Figure 17). Tariffs further declined when MTN started connecting customers in October 1998.

Celtel's tariffs were also responsive to changes in interconnection charges and were reflective of the differences in the magnitude of the charges. For example, the premium Celtel customers were paying to call their MTN counterpart compared to calling UTL can only be justified by the relatively higher MTN network termination charge (Table 4). As UTL termination charges increased and MTN's dropped, Celtel's end user tariffs to these networks adjusted accordingly and eventually converged. This is a practical example of the significance of interconnection charges, besides competition, in pricing end user tariffs.

Table 6 : Comparative End User Telephone Tariffs and Charges (1999)

(In USD)

US\$ (Per traffic minute)	Jul-99			Apr-01				
	UTL ^F	Celtel	MTN ^M	UTL ^F	UTL ^M	Celtel	MTN ^F	MTN ^M
Local Calls								
Calls from UTL ^F	0.06	0.48	0.48	0.04	0.12	0.14	0.14	0.14
Calls from UTL ^M	N/A	N/A	N/A	0.12	0.12	0.17	0.14	0.14
Calls from Celtel	0.21	0.13	0.33	0.18	??	0.18	0.18	0.18
Calls from MTN ^F	N/A	N/A	N/A	0.07	0.17	0.17	0.07	0.09
Calls from MTN ^M	??	??	0.18	0.14	??	0.18	0.12	0.12
Domestic Long Distance Calls								
Calls from UTL ^F	0.18	0.48	0.48	0.14	0.12	0.14	0.14	0.14
Calls from UTL ^M	N/A	N/A	N/A	0.12	0.12	0.17	0.14	0.14
Calls from Celtel	0.21	0.13	0.33	0.18	??	0.18	0.18	0.18
Calls from MTN ^F	N/A	N/A	N/A	0.14	0.17	0.17	0.12	0.12
Calls from MTN ^M	??	??	0.18	0.14	??	0.18	0.12	0.12
International Calls								
US	1.32	1.20	1.62	1.11	0.78	1.46	0.83	0.83
UK	1.32	1.20	1.62	1.00	0.72	1.46	0.78	0.78
India	1.47	1.20	1.62	1.14	1.00	1.46	1.03	1.03
Rest of Africa	1.10	1.50	1.62	0.83	1.06	1.46	1.08	1.08
East Africa	0.48	1.20	1.62	0.36	0.36	0.88	0.33	0.39
Connection Charges*	125	25	0	??	22	24	256	25
Montly Subscription Charges**	7	20	13	??	19	21	Basic= 8.33 ISDN= 16.67	19

Source: UTL, Celtel, and MTN

: ?? = Not Available; N/A = Not applicable

* Connection charge is free for MTN in 1999 because all its accounts are pre-paid.

** The 1999 UTL subscription charge is for Digital Exchange Line Rental. The subscription charge for manual and electromechanical exchanges are Ush 5.000 (USD 3.67) and Ush7.500 (USD 5.51), respectively.

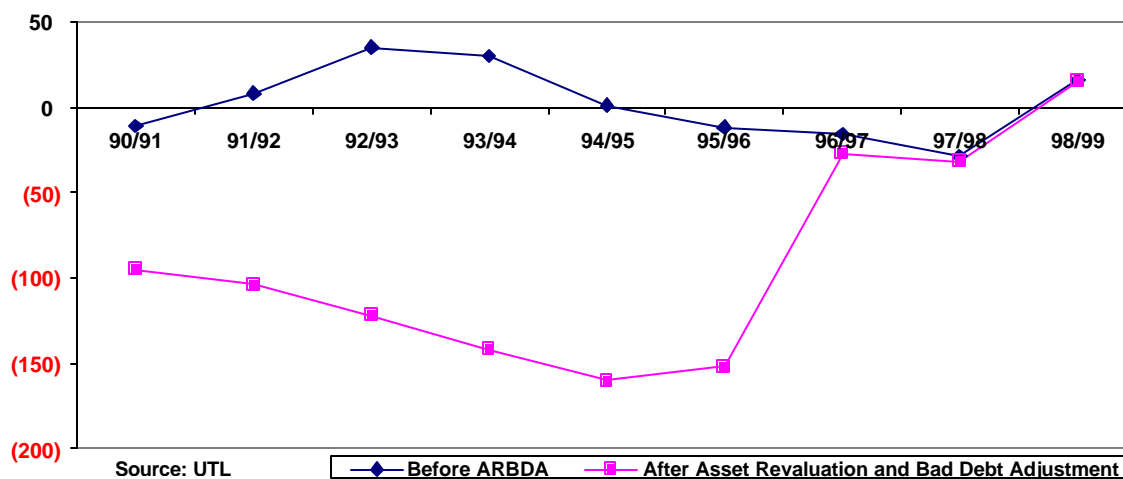
*** All 2001 mobile tariffs are Postpaid.

(iii) *Service Qualities and Financial Performance.* In anticipation of privatization government appointed a new manager and field interviews report a significant improvement in UTL's treatment of customers, concern about its public image, and quality of services that

are not technology driven (such as response time to complaints). In addition UTL made a net profit of shs 10 billion in 1999, the first time to make a profit in a very long time, since it began to correct the problem of fictitious accounting for uncollected revenues.

Figure 18. UTL Return on Sales²¹

(Net Income as % Sales)



Call completion rates have not changed much (Figure 19), despite considerable increases in UTL's traffic (see for example, Figure 20). This is largely due to the World Bank's rehabilitation project, although recent management improvements are also a factor. The number of faults per main line has also remained steady at UTL's relative high levels (Figure 21), but faults cleared the same day has been in decline (Figure 22).

Figure 19. UTL: International Call Completion Rates

²¹ Adjustments: (a) Fixed Assets in operations, depreciation and inventories have been revalued using the CPI, and (b) Accounts receivables and provision for bad debts have been adjusted assuming a maximum of 180 days for collections.

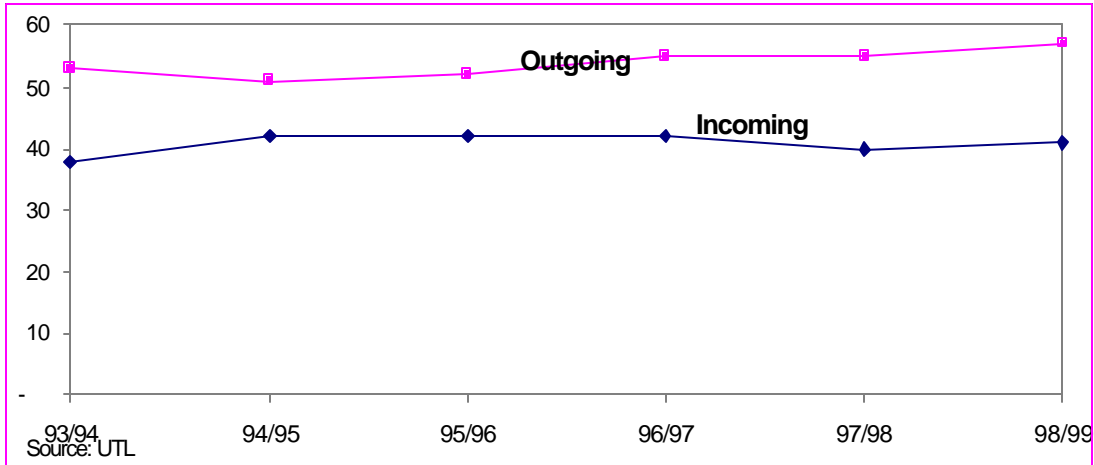


Figure 20. Uganda: International Telephone Traffic (in millions of minutes)

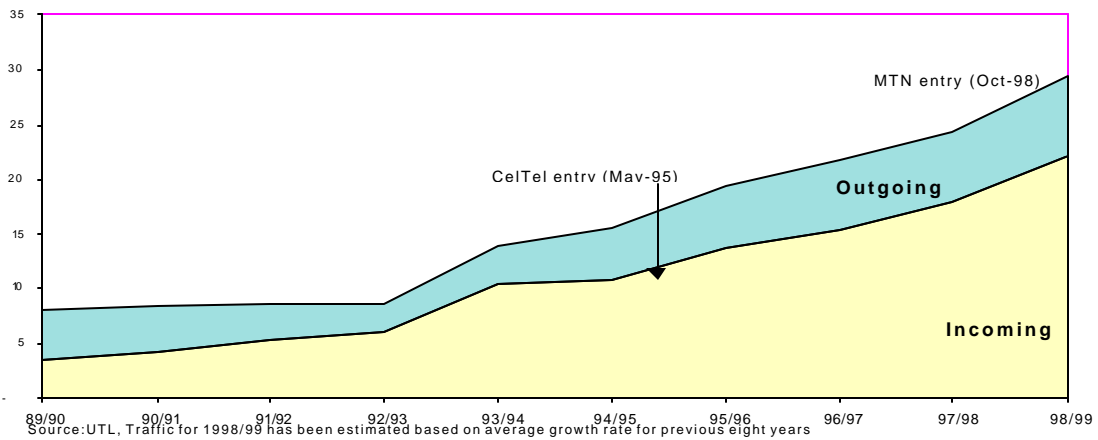


Figure 21. Number of Faults per 100 Main Lines per Year

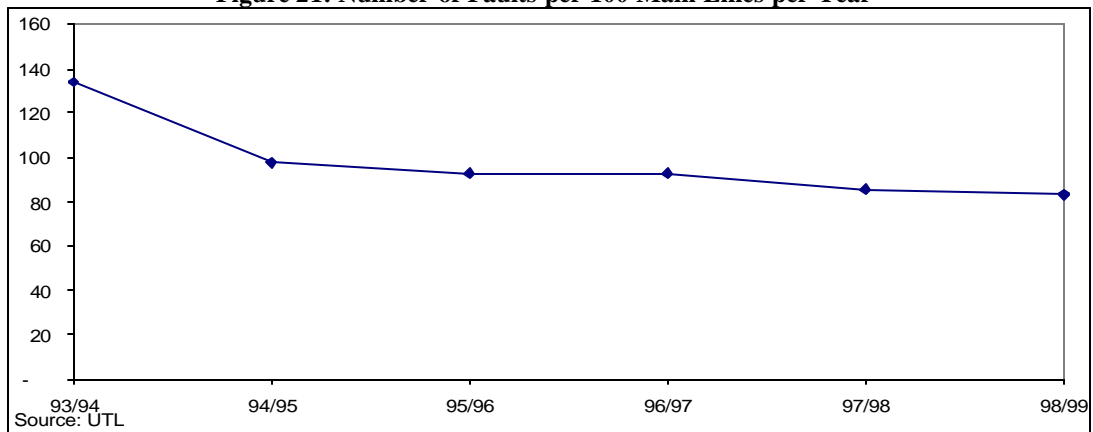
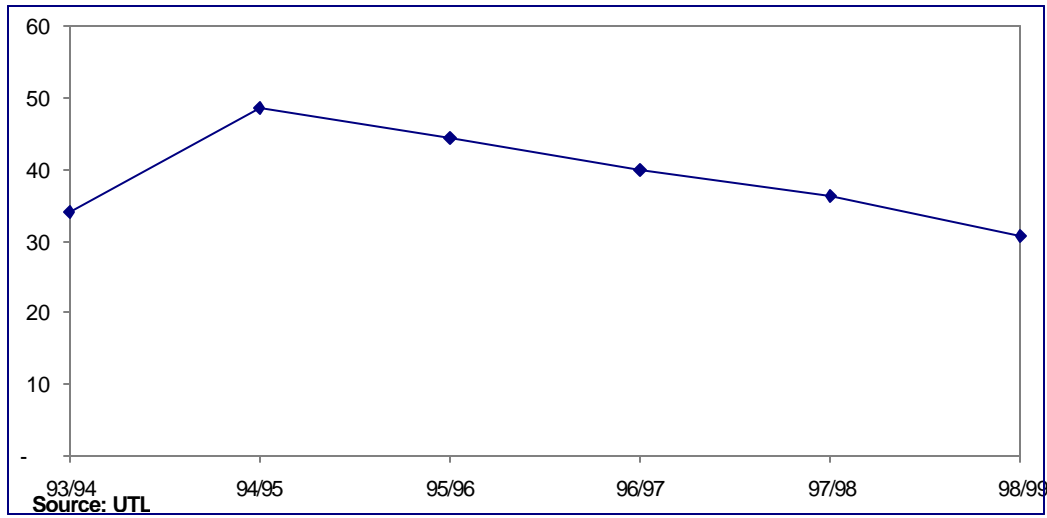


Figure 22. UTL: % of Faults Cleared the Next Day



Despite recent improvements there are still service problems at UTL with competition (field interviews). Large, irregular bills, long intervals between bills, and serious delays and problems in resolving billing complaints continue, partly because the company did not get government approval to purchase an upgraded billing system. By 1999, customers who were willing to pay Ush 200,000 for International Subscriber Dialing could get a special code to prevent UTL workers from using their number (which has been a source of irregular bills and a security problem in the past).

By the time UTL was sold, a new billing system had been acquired, giving customers itemized bills. The prepaid service had also been introduced. With a minimum advance payment of Ush 50,000 (about \$30), one gets the ability to call any place in the world so long as they are in credit. The new majority shareholders have also gone a long way in establishing a new corporate image projecting efficiency and customer care. They have increased the number and set up new locations of their front offices in prestigious buildings;

they have continued training staff in customer care; bills are delivered regularly to the registered premises of subscribers by courier; and complaints are formally responded to.

The situation by 1999 was that although the number of payphones had increased, the UTL phones were often out of order; and the Starcom phones were reported to be better maintained. This situation has now changed with UTL addressing the earlier shortcomings. Starcom almost collapsed because despite their very early start, they appear to have traded more on knowing UTL's internal weaknesses rather than a careful study of the environment to establish business opportunities. Management was also poor. Starcom might be the first real victim of real competition. Their operational merger with Infocom saved the ISP side of their operation, but their other services have failed to stand up to real competition. Along the same lines, Swiftglobal, one of the ISPs, sold out to Africa On Line.

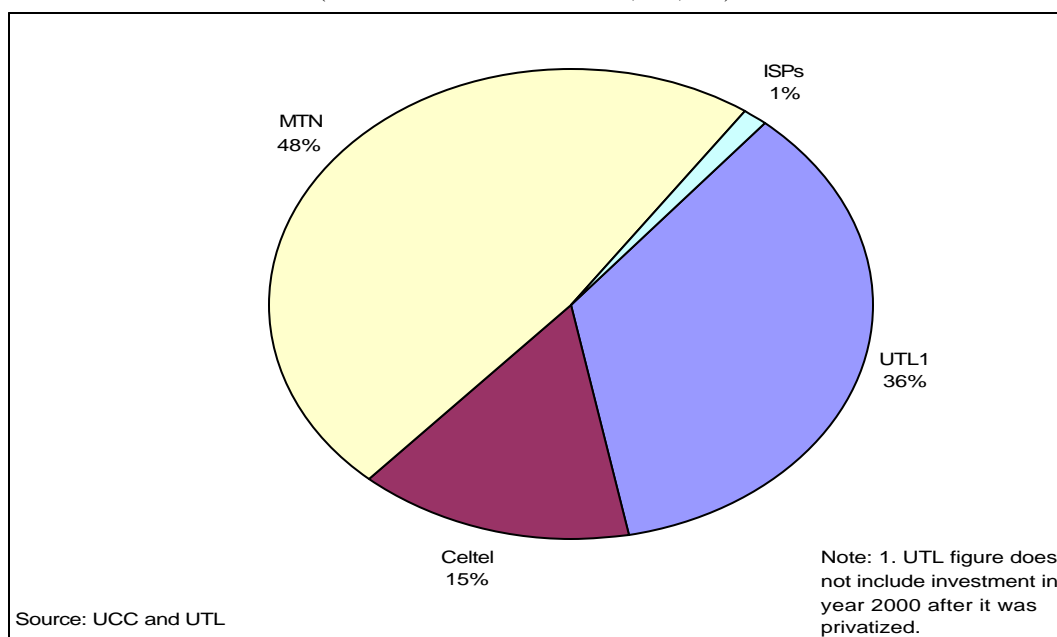
(iv) Investment. Over the period 1995-2000, the telecommunications sector saw a total of US\$ 203 million new investment by both the incumbent and the private operators. MTN alone accounts for 48% of this total, which it invested in just two and a half year, the incumbent operator accounts for 36% of the total while Celtel accounts for 15% (Figure 23). The remaining 1% was invested by various ISPs in the sector. Overall, the new private entrants made US\$131 million worth of telecom investment, which is about 64% of the total, in just few years.

Although it may be difficult to evaluate the relative efficiency of the investment by the different operators, the cellular operators in Uganda produced a *line* at just 18% of the incumbent's investment cost of a line. The incumbent operator spent US\$ 3,975 of investment to produce a line, which is considerably higher than the world average that is around US\$ 1,500 (ITU,1996), while the cellular operators produced a *line* at an average

cost of US\$ 700.²² This cost gap is mainly due to the differences in technology between fixed and cellular; however, it is also indicative of the poor investment performance of the incumbent operator. Additionally, the data substantiates the common argument in favor of cellular, and clearly depicts the relative advantage of cellular to meet the demand of communications famished nations like Africa.

Figure 23: Uganda Telecommunications Sector Investment (1995-2000)

(Total Investment = US\$ 203,339,068)



(v) *Coverage expansion and technology.* The growth of penetration of services has been phenomenal. Currently, MTN has deployed 264 cell sites in 32 districts. They have over 145,000 subscribers and 1,580 public pay phones. Celtel has also stepped up their roll-out, setting up a cumulative total of 36 cell sites in 18 districts. Because of problems described earlier, Celtel does not offer fixed cellular services to date. While the UTL Telecel figures are not included, they have, at the end of this report's review period,

²² This should be interpreted with maximum precaution as the calculation does not take into account lags in investment, unused capacities, quality indicators, and investment in other facilities.

embarked on a major roll-out plan. It is difficult to conceive this level of expansion without the competitive drive from multiple players in the sector.

A great advantage of the cellular networks is that as they provide coverage to the major roads and to the urban centers, they create signal availability in many rural areas which would otherwise not be specifically targeted in the initial roll-out stages.

All the cellular networks are based on GSM 900MHz, but applications to start using the GSM1800 MHz have been received and approved by UCC, with focus on the urban areas. The MTN and Celtel networks are necessarily 100% digital. UTL continues its program of digitalization, and now quotes a percentage of 84.9% as digitalized.

Another area of technology penetration has been optical fiber. UTL was the first to lay out optical fiber for the back-haul from their switches in Kampala to their main switch. They have now also run optical fibers from Kampala to Entebbe and Jinja. Entebbe is now easily accessed as part of the Kampala switching area. MTN has also embarked on a major project of connecting the Central Business District as well as the Industrial area of Kampala with 12 km of optical fiber (phase 1), later increasing to 50km. It can be argued that if the privatized UTL was a monopoly, they would try to leverage maximum income out of their legacy technology before investing heavily in new technology. In the event, they really have no choice now since their competitors have invested in modern technology that gives better performance and consequently better returns. By the same token, overall sector investment becomes synergetic as each operator tries to maintain a competitive edge in terms of coverage and quality of service.

(vi) The Rural Communications Development Fund. One of the biggest challenges facing UCC is ensuring universal access to communications. An application was made to the International Development Research Corporation (IDRC) of Canada for the funding of a base line, policy, and strategy study for the Rural Communications Development Fund (RCDF). This was conducted during the second half of 2000 at a cost of Canadian Dollars 192,000 from IDRC and Shs 50 million from UCC.

The cumulative levy from service providers is supposed to reach \$5.88 million by 2003. The current estimate for various initiatives including public telephony access throughout the country, and an internet point of presence at each of the 52 districts is \$7 million by the end of 2002. There has already been indication from the World Bank that they might be willing to meet the financing shortfall for the period to the end of 2002.

The strategy is based on minimum subsidy competitive bidding for set roll-out targets, targeted at areas that are clearly not viable in the short run. There would also be non-competitive small grants to schools, small private sector operators (tele-kiosks) and NGOs with good proposals.

One aspect of the RCDF is that it would target areas where the National Operators do not exercise the right of first refusal. The first reaction from them, a sure indication that most areas are viable, is that they intend to cover all the areas in their business plans. It is now necessary for UCC to pose the question as to which areas they can reach in a specified time frame.

One interesting finding from the study was that the rural population are willing to pay, and indeed do pay a mark up above normal rates for access in areas where one would consider commercial operation not viable. (This was demonstrated by supplying a Euroset and an antenna to a businessman in a remote area and monitoring his income). By providing franchises to business people as an additional source of income, sustainable access can be provided to many areas.

VII. Conclusion

It is still early days in Uganda's telecommunications reform, but experience to date suggests several tentative conclusions. First, privatizing into a competitive market does not necessarily lower sales revenues for government. Although we don't know the counterfactual, i.e. the sales prices for UTL with an exclusivity agreement, few observers in Uganda believe that it would have been equal to the combined revenues from the sales of the two network licenses. Second, the delay in the sale of the incumbent may have helped competition get established in Uganda. In Ghana, the prompt sale of Ghana Telecom has brought in an aggressive private operator who has used the dominant position of the incumbent and the weakness of the regulator to force interconnection agreements that are highly advantageous to GT. UTL's weakness gave MTN a window to get established as a viable competitor. As a cellular operator this did not take it much time. Only time will tell if the newly privatized UTL can now effectively compete with MTN, and if MTN can continue to be a strong presence in the market. Indications in the eight months since the sale of UTL indicate that this will be the case. Third, the delays also allowed the UCC to get established and this also helped boost Uganda's credibility with bidders for UTL. Most developing countries do not set up a regulatory body until after the state-owned

infrastructure provider has been privatized. Yet there is clearly a reputation advantage to setting up the regulator beforehand. Fourth, the fact that UTL was public helped UCC get established. The strongest operator was not able to exert influence to shape the regulator to its advantage because its government owners constrained it (in contrast with Ghana)

Finally, the early evidence from Uganda supports the premise that competition will expand access and improve service quickly. We cannot judge whether that expansion was faster than in countries with monopoly providers until we begin the comparative analysis of our cases. It does seem likely that any purchaser of UTL would not have embarked on setting up a new cellular system the way MTN has, but would have expanded more slowly by laying cable and using cellular only for mobile services. It has to be noted though that most serious operators now see the advantages in the rapidity of cellular rollout. For the particular case of Uganda, the sector appears to have greatly benefited from the sale of a second license before the sale of the incumbent.

References.

- Briceno, Arturo(1999), “*International Comparison Study about Interconnection Charges,*” OSIPTEL - Supervising Agency for Private Investment in Telecommunications in Peru, Preliminary Working Paper, Peru, <http://www.apectelwg.org/apecdata/telwg/interTG/briceno.html>.
- International Finance Corporation [IFC] (1997), “*Information Memorandum: For the Sale of a License to a Second National Operator,*” The Republic of Uganda
- International Finance Corporation [IFC] (1997b) “*Information Memorandum: For the Sale of Uganda Telecom,*” The Republic of Uganda.
- International Finance Corporation [IFC] (1999), “*Information Memorandum: Privatization of Uganda Telecom,*” Government of Uganda
- Interconnection Agreement between MTN Uganda Ltd. and Celtel Ltd. (1998), The Republic of Uganda.
- Interconnection Agreement between Uganda Post and Telecommunications Corporation and Clovergem Celtel Ltd. (1993), The Republic of Uganda.
- Interconnection Agreement between Uganda Telecom Ltd. and MTN Uganda Ltd (1998), The Republic of Uganda.
- International Telecommunications Union [ITU](1996), “*African Telecommunications Indicators,*” Telecommunications Development Bureau.
- International Telecommunications Union [ITU] (various years), “*World Telecommunications Indicators Database,*” <http://www.itu.int/ITU-D/ict/publications/world/world.html>.
- Laidlaw, Bruce and Christine Parkinson (1995), “*African Telecommunications Policy Study – Uganda Country Report,*” Phase 3, World Bank, Carl Bro International a/s.
- Shirley and Menard (2002): Shirley, Mary M. and Claude Menard, “*Cities Awash: A Synthesis of the Country Cases,*” in Mary M. Shirley, ed. *Thirsting for Efficiency: The Economics and Politics of Urban Water System Reform*, Oxford: Elsevier Science Press.
- Mugaju, J. (1999), “*Uganda’s Age of Reforms: A Critical Overview,*” Fountain Publishers, Uganda, Kampala.
- Noll, Roger G. (2000), “*Telecommunications Reform in Developing Countries,*” in Anne O. Krueger, ed. *Economic Policy Reform: The Second Stage*, Chicago: The University of Chicago Press.

Public Enterprise Reform and Divestiture Secretariat (1994), *“Draft Report on the Uganda Telecommunications Sector Restructuring Workshop,”* Workshop Document, Kampala

The Committee on Investment in Telecommunications (1993), *“Report on Liberalization and Privatization of the Telecommunications Sector in Uganda,”* Uganda, Kampala

Shirley, Mary and Patrick Walsh (2000), *“Public versus Private Ownership: The Current State of the Debate,”* Policy Research Working Paper # 2420, World Bank.

The Uganda Communications Act (1997), The Uganda Gazette No. 64 Volume XC dated 26th September 1997, Printed by UPPC, Entebbe, by order of the Government

Uganda Posts and Telecommunications Corporation, Annual Report and Accounts, 1990/91 to 1996/97

World Bank (1996), *“Uganda Second Telecommunications Rehabilitation Project – Implementation Completion Project,”* Credit 1991-UG

World Bank (various years), World Development Indicators Database, SIMA (*Statistical Information Management & Analysis*)