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**Strategy of the Uganda Communications Commission in the Face of Changing
Technology**

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Abstract

This paper reviews the current telecommunication regulatory premises and tools in Uganda and discusses the consequent challenges faced by the regulator. One of the change drivers that has far reaching impact is the convergence of voice and data.

Data traffic is rapidly outstripping voice traffic. At the same time, there has been a convergence of the two, especially as voice over the internet protocol matures. This convergence between hitherto unregulated data traffic and traditionally heavily regulated voice traffic poses challenges to the newly formed regulators in our countries. This paper, after introducing the telecommunications sector in Uganda, discusses these challenges and focuses on the possible way forward in five specific areas:

Development of an information policy framework to guide formulation of laws;

Platform-based rather than service based licences;

Regulation versus "unregulation";

Industry interest versus public interest;

Development and strengthening of South-South linkages;

Business opportunities arising out of the growth of data traffic and penetration of the internet platform

Disclaimer: While the author has knowledge of the policies and procedures of the Uganda Communications Commission (UCC), the views and assertions in this paper are purely personal and are not meant to reflect, explicitly or implicitly, the position of UCC on any of the issues discussed. The only exception is Section 2, which is a formal summary about the Telecommunications Sector in Uganda.

1. INTRODUCTION

The process of liberalising the telecommunications sector all over the world has progressed to the extent where it cannot be reversed. African countries have not been an exception.

The policy in Uganda has as its main policy objective the penetration and increase in the level of telecommunication services through private sector investment rather than government subvention. It is recognised that most of that government is currently unable to raise anywhere near the required level of investment. Good telecommunication infrastructures will facilitate the private sector investment which increasingly good governance and market oriented macro-economic policies are attracting to Uganda.

Liberalisation must necessarily go hand in hand with a good regulatory environment. The view of the Uganda Communications Commission is that service providers are partners in ensuring the achievement of government policy objectives. Provided they observe fairness in competition and in the delivery of services to customers, we believe more can be achieved through dialogue rather through the policing approach.

The regulator must however work within the framework of the law as enacted by parliament. Good laws in turn can only be enacted if there is a clear policy framework. If either is deficient, good regulation cannot be achieved. Without good regulation, the private sector will not be facilitated to roll out services to our population, and government policy objectives will not be achieved.

This paper starts by introducing the Uganda Telecommunications sector and the Uganda Communications Commission. It then discusses the challenges of regulation in the face of the ongoing rapid changes in technology. Particular emphasis is put on the convergence voice and data as well as information and communication technology. The challenges have to be handled in a positive sense to ensure that the sector is enabled to deliver its full potential.

2. THE UGANDA TELECOMMUNICATIONS SECTOR

The Uganda Communications Act, 1997, was passed under the general macro policy of liberalisation and privatisation, which has been pursued by the Government of Uganda. The poor telecommunication infrastructure has adversely affected investment in Uganda for a long time. It was realised early that government does not have the resources for the major investment required to increase the level and range of services as well as their national penetration to an acceptable minimum.

Tele-density is currently 1 line per 100 people: This includes mobile telephones and therefore departs from the commonly accepted International Telecommunications Union measure based on fixed lines: a definition made inaccurate by advances in wireless technology. Provided the grade and quality of service are good, we believe that mobile penetration is a critical component of tele-density, especially in a country like Uganda where mobile subscribers more than double the fixed line subscribers. It is important to note, however, that while 80% of the population live in the rural areas, 70% of the

communication services are in the urban areas. This situation is rather unfortunate because rural areas produce more than 80% of Uganda's wealth.

Sector Policy Objectives.

In liberalising the telecommunications sector, government had the following sector policy objectives:

- (I) Put in place an independent regulator.
- (II) Increase of tele-density from 0.28 lines per 100 people to 2.0 lines per 100 people by the year 2002.
- (III) Improve communications facilities and quality of service as well as adding a variety of new communications services.
- (IV) Serve the unmet customer demand and
- (V) Increase the geographical distribution and coverage of the services throughout the country.

A Second National Operator (SNO), MTN, was licensed and started operation in October 1998. MTN is licensed to compete in all aspects of telecommunications with the former monopoly operator, Uganda Telecom Limited (UTL). UTL itself has been privatised by selling majority shares and ceding full management control to a private sector consortium.

The Uganda Communications Commission (UCC) was also set up as an independent regulator. Among its main objectives are the following:

- (a) To enhance national coverage of communications services and products, with emphasis on provision of communications services to the citizens of Uganda;
- (b) To develop and improve rural communications services.
- (c) To expand the existing variety of communications services available to the citizens of Uganda to include modern and innovative postal and telecommunications services;
- (d) To encourage the participation of private investors in the development of the communications sector;
- (e) To introduce, encourage, and enable competition in the sector through regulation and licensing of competitive operators in order to achieve rapid telecommunications network expansion, standardisation of technical requirements, and operation of competitively priced quality services.

Items (d) and (e) should be particularly noted by the entrepreneurs, as ICT infrastructure, services and applications represent the fastest growing business sector internationally, recent losses on the stock markets notwithstanding.

The Uganda Communications Act, 1997, gives the Commission full budgetary and administrative independence. It must be realised however that quite often the law and the practice in our country are not necessarily in consonance. UCC is lucky that the line Minister under whom we fall has established a culture of staying out of the Commission's business that we hope will become an entrenched tradition. We salute Hon Eng J Nasasira for his political maturity.

While its budget must be approved by the Minister responsible, and its accounts audited by the Auditor General, its income is not derived from the national budget. UCC employment policy hinges on a small but well-motivated secretariat, and hiring occasional legal and technical expertise from the private sector as necessary.

Annex 1 gives comparative figures in terms of service providers, customer base, and current service coverage.

The cellular networks have been a boon to rural communications. As they attempt to cover the main road corridors and small towns, they have achieved signal availability to many rural areas so that the only hindrance to immediate communication is the availability of a hand set. It is evident that in the short to medium term, this will be the cheapest way of availing services to many rural areas without direct infrastructure costs.

To leverage grants and investment in rural communications, the Uganda Communications Commission has set up a Rural Communications Development Fund that will reach \$1million by the end of this financial year. The 1% levy imposed on operators as well as major license fees all accrue to this fund.

3. REGULATORY CHALLENGES

The current law, The Uganda Communications Act, 1997, as well as precedents set by licences based on it, combined with the convergence of data and voice caused by the rapid technological advances, pose several regulatory challenges. These are discussed below.

3.1. Lack of a clear information policy

The main motivation for sector reform was the penetration of telecommunication services. While there was some concern about the human benefits of telecommunications in our continent as early as 1996, it was not fully crystallised until "The African Connection" was publicised by the African Ministers responsible for Communications during Africa Telecomm 98. At the Acacia Ministerial Meeting in Maputo (22-23 Sept 1999), national information society policies were recognised as essential frameworks to guide and co-ordinate the full range of information and communication technology (ICT) projects. It is important to ensure that traditionally disadvantaged groups such as youth, women and rural communities are not left in the cold. Priority sectors of human benefit, including education, health, and agriculture were recognised.

The problem is that whenever we discuss disadvantaged groups, we automatically tend to think about government intervention and special privileges. These are generally anathema to the private sector. As regulators, we therefore bear the added responsibility of guiding government in the formulation of information policies that will focus on human benefit without alienating the private sector investors.

This is the first challenge faced by regulators: working with the industry as partners while avoiding regulatory capture; and ensuring truly universal access, in terms of accessibility and affordability, without distorting competition.

3.2. Platform based rather than service based licenses: avoiding the technology trap

The second challenge is lack of a clear definition of the ramifications of data communication licences. The current Internet Service Provider (ISP) licences explicitly assume that ISPs will only handle data. Implicitly, voice cannot be transmitted as data. The National Operator licenses indeed provide exclusivity for five years, starting June 20, 2000, when only the two designated national operators (MTN and UTL) can offer basic telephony services, where basic telephony is interpreted to mean the old circuit switched voice communication. Voice over the Internet Protocol, where voice is transmitted as packet switched data, is however now an accepted technology, meaning that ISPs are able to deliver voice over their data gateways. ISPs argue that as far as they are concerned, they are transmitting data according to their licences. The Act indeed defines data as:

" ..the use of binary signals to transmit information from one computer or apparatus to another; .."

How does a regulator handle this situation?

This apparent contradiction between the word and the spirit of the licences arises because the categorisation of licences in the Act, as expanded in the licences themselves, is often service rather than platform based. Mobile telephone systems, satellite systems, fixed line telephone networks, etc, all provide platforms through which various services can be delivered. Indeed, one can get the same set of services delivered over the different platforms. If this was not the case, there would be no licence based difference between "basic telephony" and "data" services.

As we evolve our laws and licences, we should not distinguish between groundnuts and soya-beans; we should only distinguish between the weight of different bags, regardless of content. We should, in other words, borrow a leaf from the transport sector where licences are charged by tonnage or capacity which, in telecommunications, translates to bandwidth. Given a good platform, the essential difference between data and live voice is the minimum bandwidth required for acceptable quality. In other words, there should be no distinction between data, voice, or multimedia signals other than the bandwidth deployed.

Eventually, platforms, from the regulatory point of view, will be distinguished by bandwidth, rather than by the technology used or the application running through them.

This is the second challenge: avoiding the technology trap in licencing. Licences must be re-structured such that they are technology-proofed.

3.3. Regulation versus unregulation

The third challenge is the convergence of the traditional telecommunication services, which were heavily regulated, and the main data delivery platform, the Internet, which has evolved rapidly because it was self-regulated. Industry is clamouring for the total "unregulation" of the internet, so that the full benefit of data-based services can be delivered to the consumers. It is claimed, and rightly so, that ICT changes too fast to be regulated without stifling it.

How is the regulator to handle this?

Convergence of platforms means that having an unregulated Internet really means having an unregulated telecommunication industry, and leaving the rest to industry and market forces. Industry argues that only laws governing fair competition are required. This is all well and good in societies where the industry has already evolved to an advanced stage, and availability and choice are taken for granted. Consumers in such societies are well educated about their rights. However, even in such societies, the private sector is not famous for taking full and proper consideration of societal needs and concerns. All too often, the money motive is the overriding factor. Why then should we trust the private sector to regulate itself?

The situation is even worse in our developing countries where the internet poses a lot of problems alongside the benefits it brings: content is currently all external, threatening cultural extinction; the language of mediation is foreign and unknown to many of our people; issues of morality have to be addressed; issues of enhancement of trade imbalances, especially if WTO protocols are accepted wholesale, can lead to the extinction of most of our local industry.

We are also concerned with the very limited penetration of even basic services in our society. There must be mechanisms put in place to ensure that even as we operate through the private sector partners, equitable distribution of services is not forgotten.

These concerns must however not be used as an excuse for sustaining the traditional heavy-handed approach to regulation in our countries. There are many benefits to minimum regulation, as the growth of the Internet has demonstrated.

The third challenge to the regulator is to strike a fair balance between societal needs and concerns on the one hand, and facilitation of private enterprise as well as avoidance of market distortion on the other hand.

3.4. Industry versus public interest

The fourth challenge is the heavy investment in existing circuit switched infrastructure vis a vis the inherent high efficiency and cost-effectiveness of packet switching, the preferred approach in data networks. This is a threat to the traditional networks, which rely on circuit switched technology. Operators do not want to write off their investment. This is further compounded by the fact that a completely packet switched network requires more

bandwidth than is available at many points of the traditional circuit switched network. Given the reluctance and sometimes inability of service providers to change over to packet switching, how does the regulator ensure that the users take advantage of the more cost-effective technique? Service providers with VSAT data licences are, for example, able to deliver voice over the Internet. Does the regulator go against them and deny the population access to cheap communications, or does the regulator side with them and violate exclusivity clauses that were agreed in order to encourage heavy investment?

This is the fourth challenge, ensuring that the consumer's interests are catered for without alienating private sector partners and discouraging investment.

The best way out of dilemma of this sort is proactive discussion between investors and the regulator. The regulator must monitor, and indeed second guess technology trends so that operators are informed in good time about technology induced changes in the regulatory tools in good time. Such changes will therefore become opportunities instead of threats. This approach is in recognition that technology neutral licenses will be some time in development, and yet technology is changing all the time.

3.5. Development and strengthening of South-South linkages

When we talk of south-south linkages, it often sounds like empty political talk. We must however admit that over the past one or two decades, south-south linkages have led to higher levels of co-operation and trade with partners with whom we are almost at the same level. This creates a better and more mutually beneficial trading environment. How does this relate to data and the Internet? The answer is e-commerce, going hand in hand with WTO protocols. We shall find, inevitably, that the largest "e-supermarkets" are north based, and we shall have all of them at our finger-tips. What then happens to the budding south-south trade? We shall find, just like in the old days, that some amount of protection, even in the e-commerce era, is necessary. The alternative is to revert to the basic one-way trade that existed in the old days. The only difference is that, through WTO protocols, we would have signed away our rights to intervene in trade as countries.

The fifth challenge for the regulators is to have the foresight and understanding of the full ramifications of e-commerce in an open trading environment so that we can guide our governments in their enabling policy formulation and negotiations.

It should be noted that a pre-requisite for the development of e-business in Uganda is a complete overhaul of our antiquated financial systems.

4. OPPORTUNITIES

Provide we are forward looking and have an entrepreneurial outlook, we should see opportunity in the challenges and problems highlighted in this paper. Issues that have been raised as problems in making the Internet beneficially accessible to our people also create business opportunities. These include:

- Development of content appropriate to societal needs

- Development of languages of mediation, e.g. through easily understood symbols
- Service provision

There are many opportunities here, especially when we realise that in the e-world, one does not have to own infrastructure to provide a service. Ways of making money are only limited by our vision.

- Infrastructure development

This is somewhat challenging because of the high start-up costs and limited manpower in Uganda. Alliances with experienced operators from outside Uganda, who will also have access to financing at reasonable interest rates, is recommended

- Training of human capital in all aspects of information society management

There is an international skills shortage.

- Addressing issues of security
- Addressing issues of privacy
- Addressing issues of cyber crime
- etc

All these will, one way or the other, call for some regulatory guidance. The regulator must anticipate and know where such guidance is required, or where regulation might be a hindrance.

5. CONCLUSION

The Internet has become a revolution, a storm sucking into its wake the traditional telecommunication services. This applies to both the industry and the regulators. The regulators, especially in the developing countries, must have the foresight to select the correct regulatory approach to enable our countries to benefit from rather than to be destroyed by the revolution. This paper has highlighted some of the challenges ahead and pointed out some possible solution avenues. Regulators and service providers are challenged to look and think ahead so that Africa is not left behind. One is tempted to add "as usual".

ANNEX 1

TELECOMMUNICATIONS SECTOR COMPARATIVE FIGURES FOR 1998 AND 2000

Comparative Summary of the Communication Services Sector, 1998 and 2000

	Service Provided	OCTOBER 1998	OCTOBER 2000
1	Wired telephone lines (UTL)	55,749	58,405
2	Fixed wireless lines (MTN)	0	3,000
3	Fixed wireless pay phones (MTN)	0	447
4	Mobile cellular subscribers (MTN, CelTel)	40,000	146,550
5	Internet/ email subscribers (dial-up)	Data awaited	About 5000
6	Internet/ email subscribers (wireless)	Data awaited	About 500
7	National Telecommunications Operators	2	2
8	Mobile Cellular Operators (CelTel, MTN, UTL; UTL not yet rolled out)	3	3
9	VSAT International Data Gateways		
10	Internet Access Service Providers	7	12
11	Public Internet Service Providers (Cafes)	3	14
12	Public Payphone Licenses	7	19
13	Private FM Radio Stations	28	48
14	Private Television Stations	8	12
15	Private Radio Communication Licenses	530	736
16	National Postal Operator	1	1
17	Courier Service Providers	7	10

While it is clear that there has been a lot of growth in the sector, the totals have to be carefully interpreted. Many people who have fixed lines, for example, also have a line at home and a mobile phone. Secondly, most of the services are concentrated in the urban centers. Thirdly, there are only 200,000 or so communication ports for more than 20 million Ugandans: less than 1% of the population can access telecommunication services at any time. Time multiplexing especially in public and private enterprises as well as

government offices does increase the actual number of people with access to telecommunications probably to million or so, but the grim truth is that we are still very badly off as a nation.

UTL has got the widest national coverage. Only the districts of Kibale, Sembabule, Adjuman and Nakapiripirit do not have network access.

The MTN network covers most districts, the exceptions being Moyo, Kitgum, Moroto, Kibale, Kiboga, Kotido, Mutukula, Ntungamo, and Rukungiri. MTN's public payphones are concentrated in Kampala, Entebbe and Mpigi (247); 52 in the central region outside these districts; 71 in the western region; 16 in the northern region; and 61 in the eastern region.

Celtel has its main coverage in Kampala, Entebbe, Bombo, Jinja, Busia, Tororo, Mbale, Mpigi, Arua, Koboko, Iganga, Mbarara, Masaka and Mityana.