

# LIBERIA TELECOMMUNICATIONS AUTHORITY

THE PREMIER REGULATORY AUTHORITY...



**The landing of the Africa Coast to Europe (ACE) Cable in Monrovia, Liberia, on  
November 22, 2011**

## 2011 ANNUAL REPORT

## **ACRONYMS**

ACE	Africa Coast to Europe
BoC	Board of Commissioners
CCL	Cable Consortium of Liberia
CDMA	Code Division Multiple Access
EOI	Expression of Interest
FATL	Frequency Allocation Table of Liberia
FDL	Foreign Direct Investment
HF	High Frequency
ICT	Information Communication Technology
IFC	International Finance Corporation
ITU	International Telecommunications Union
LCAN	Liberia Consumer Action Network
LEL	Liberia Equipment Limited
Libtelco	Liberia Telecommunications Corporation
LTA	Liberia Telecommunications Authority
MoPT	Ministry of Posts and Telecommunications
NATCOM	National Telecommunications Commission
NCCL	National Consumer Council of Liberia
NNP	National Numbering Plan
NPAS	National Postal Address System
PPP	Public Private Partnership
SPV	Special Purpose Vehicle
UHF	Ultra High Frequency
UMTS	Universal Mobile Telecommunications System
VHF	Very High Frequency
VSAT	Very Small Aperture Terminal
WARCIP	West Africa Regional Communications Infrastructure Project
WAT	West Africa Telecom
WATRA	West Africa Telecommunications Regulators' Assembly
WCRD	World Consumer Rights Day

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**Angelique E. Weeks**  
**LTA Chairperson**

## 1.0 CHAIRPERSON'S MESSAGE

The year 2011 was a year of assertive regulatory undertakings for the Liberia Telecommunications Authority (LTA or Authority) as the Board of Commissioners (BOC) of the Authority endeavored to increase the pace of sector development. In this regard, the LTA engaged in many policy implementation and regulatory activities geared toward bringing the Liberian telecommunications regulatory environment on par with international best practice, taking into account the concerns of the consuming public.

The negotiation of a US\$25.6 million credit facility with the International Development Association (IDA) of the World Bank in November 2010 provided crucial funding for sector initiatives implemented during the year in review. The purpose of the credit facility was to finance the West Africa Regional Communications Infrastructure Program (WARCIP) Liberia Project, which is in part financing Liberia's participation in the Africa Coast to Europe (ACE) Cable Consortium through the Cable Consortium of Liberia (CCL).

The CCL is the Special Purpose Vehicle (SPV) created to construct, own, operate and maintain the ACE Liberia Landing and Terminal Station. It is a Public Private Partnership (PPP) venture comprised of the Government of Liberia (GoL) represented by the Ministry of Finance, the Liberia Telecommunications Corporation (Libtelco), Lonestar Communications Corporation (Lonestar), and Cellcom Telecommunications Inc (Cellcom). The landing station will provide Liberia with the first true international broadband connectivity, which will increase the geographical reach of broadband networks, reduce the costs of communications services within Liberia, and boost national productivity and efficiency. A major accomplishment for the LTA during the period under review was the achievement of Project Effectiveness Conditions required by the IDA for the release of the credit facility to the Government of Liberia. This was

achieved after fulfilling the following conditions:

- ◆ Execution of the Subsidiary Grant Agreement between the GoL and the LTA;
- ◆ Execution of the Contractual Agreement between the GoL and the CCL;
- ◆ Establishment of the Project Implementation Unit (PIU) by the LTA;
- ◆ Adoption of the Project Implementation Manual (PIM);
- ◆ Ratification by the National Legislature of the Financing Agreement between the GoL and the IDA, and its signing into Law by the President of Liberia.

The Policy Framework on connecting Liberia to Undersea Fiber Cable published by the Ministry of Posts & Telecommunications (MoPT) provided the crucial guidance required by the LTA in the implementation of this project. In line with this policy framework, the WARCIP Liberia Project was officially launched by the LTA on September 30, 2011 to coordinate the financing and implementation of the ACE submarine fiber optic cable project.

Additionally, a Shareholders Agreement, Articles of Incorporation and corporate Bylaws were negotiated among the shareholders of CCL (GoL, Libtelco, Lone Star, and Cellcom). Finalization of these documents brought into effect the PPP envisaged under the IDA Project Appraisal Document and the policy framework of the MoPT. All parties have signed the Shareholders Agreement.

The CCL shareholders agreement reaffirms the intent of the Financing Agreement between the IDA and GoL for the divestment of GoL shares in CCL. Technical assistance is being pursued under the Pro-

ject to assist the GoL in developing and implementing a divestiture strategy of its 60% share in the CCL. It is anticipated that 10% capacity divestment of equity will be reserved for Liberian entities that could offer investment opportunities to small Liberian shareholders and to strategic Liberian institutional investors. Proceeds of the divestiture will be contributed to the Universal Access Fund to be used to further develop national and cross-border connectivity gaps.

The actual landing of the ACE submarine cable occurred on November 3, 2011, followed by an official program commemorating the landing on November 4, 2011. Following all installations, the cable is expected to be ready for commercial service before the end of 2012. This is a definitive milestone in achieving the development goals of the Liberian Government to modernize networks and create added value through the effective utilization of ICTs and national fiber-optic infrastructure.

The LTA also formulated the necessary regulatory framework that will govern access to international broadband capacity for an efficient and competitive broadband environment. This is essential to ensure that the policy objectives of the Liberian Government of non-discriminatory open access to broadband connectivity, with no monopoly control, and at affordable prices to support development, are achieved.

In this connection, public consultations with all licensed service providers and other stakeholders were held in keeping with the LTA Consultation Process Guidelines of 2009. Final consultations with service providers and stakeholders for the

completion of the regulatory instruments are currently in process.

During the period under review, the LTA commenced the SIM card registration process in compliance with Part III Section 3.5 of the National ICT/ Telecommunications Policy of Liberia. The SIM card registration process is viewed by the LTA as a crucial national imperative because of national security implications; as such, the LTA launched a series of awareness programs in March 2011 and began extensive consultations with Service Providers commencing in April 2011. Having considered the useful observations, comments and suggestions provided by Service Providers, the LTA launched the registration process on July 18, 2011 and issued LTA-REG 004 on SIM Card Registration on October 7, 2011.

The LTA also launched the new national numbering plan consistent with the International Telecommunications Union's (ITU) Recommendation E.164, based on a closed numbering format containing a three-digit access code and a seven-digit significant (subscriber) number. The use of a closed numbering format substantially increases the quantity of available numbers and diminishes the need to revise Liberia's numbering plan for generations to come. Service providers are currently implementing the SIM Card Registration Regulation and most have migrated to the new national numbering plan.

The LTA, during the reporting year, conducted extensive consultations with service providers in reference to the regulation of incoming international traffic through the implementation of an International Gateway Monitoring (IGM) system. The LTA objectives for implementing such regulation are: to institute policies and systems that will identify and recoup revenues

for government through proper international gateway monitoring; to implement fraud control, accountability and transparency measures; to improve the Quality of Service provided by network operators, and to meet the expectations of consumers. In addition to increasing revenues to government and improving Quality of Service, these measures will improve security to both the State and the telecommunications sector by identifying and shutting down illegal international gateways.

At the conclusion of the consultation process the LTA on January 23, 2012 issued Regulation 005 (LTA-REG-005 on International Traffic). With no objection from the Public Procurement & Concessions Commission, the LTA conducted Restricted Bidding amongst 14 companies, for Procurement of Consultancy Services for Infrastructure Deployment of International Gateway Monitoring, Management and Anti-Fraud Solution for the Republic of Liberia. At the end of the procurement process, the Global Voice Group (GVG) received the highest evaluation points and with the approval of the Cabinet, the LTA negotiated and awarded a contract to GVG in December 2011.

These developments in the telecommunications sector in 2011 are indeed laudable; however, the credit cannot be claimed by the LTA alone. While maintaining the LTA's statutory autonomy, the BOC acknowledges that these accomplishments could not have been achieved without the strong support of President Ellen Johnson Sirleaf, the Ministry of Posts & Telecommunications and the National Legislature. Therefore, on behalf of the BOC and staff of the LTA, I extend our sincere thanks and appreciation to the Government of Liberia. The LTA also acknowledges the cooperation of the managements of the service providers and other stakeholders during this year of regulatory achievement.

**Angelique Weeks**



**CHAIRPER-**



**Abdullah L. Kamara**  
**Commissioner**

## **2.0 SERVICE DEVELOPMENT AND MARKET STRUCTURE**

The Service Development and Market Structure (SDMS) Department in 2011, highlighted several short and medium term goals to facilitate the LTA's achievement of its long term overarching goal of liberalizing the telecommunications market in Liberia. These goals include among others, increasing the revenue generation capabilities of the LTA, completing the rationalization and segmentation of the telecom market, completion of the Interconnection Regulatory Framework and streamlining of the licensing process.

Targeted short and medium term goals were either fully or partially achieved during the review period. These included an increase in LTA's annual revenue by approximately 5% and reformation of the license application process to make it more transparent and expeditious. In addition to ensuring that the licensing information package was made easily available to investors by publishing it online, 90% of license applications were processed within time limits stated in LTA Regulation 001. Other achievements were the determination of market segments, the development of a market agenda, the production of a semi annual report on market performance and the effective monitoring of consumers tariff.

The achievement of these objectives was made possible through the collaboration of the following offices within the SDMS department: **Compliance and Regulations, Licensing, Market Research and Due Diligence.**

## SUMMARY OF THE ROLES AND FUNCTIONS

The SDMS Department is responsible for :

- Processing licensing applications;
- Developing regulations and monitoring competition;
- Monitoring of service providers' activities, including tariff setting;
- Monitoring performance and compliance with LTA Regulations.

### 2.1 COMPLIANCE AND REGULATIONS

#### *Key Challenges*

Compliance monitoring is a means by which the LTA monitors the telecom landscape to ensure that licensed operators are in compliance with the Telecommunications Law, as well as Orders and Regulations promulgated by the LTA pursuant to the Telecommunications Act of 2007. The LTA also monitors the sector to discourage the proliferation of unauthorized and unlicensed market participants.

In 2011, the LTA discovered several violations committed by both licensed and unlicensed operators. Prominent incidents of noncompliance in the sector relating to interconnection, mainly involved two service providers: Cellcom Telecommunications Incorporated and Lonestar Communications Corporation.

The LTA made strides in mediating disputes between these operators and issued two Orders (LTA-ORDER-0003-05-23-11 and LTA-ORDER-0005-10-04-11), aimed at bringing sanity to the sector.

Unfortunately both operators elected to take the LTA to court regarding the Regulator's actions in the interconnection dispute. The Court's resulting Stay Orders placed further LTA action on hold, pending judicial review. Comium and Libercell were also found to be in violation of the Telecommunications Law by their continued inability to meet up with financial obligations under the terms of their Licenses.

Other critical issues of non-compliance also involved failure of broadcast service providers to pay their arrears and/or to renew their licenses. Notoriously, several users of VSATs, Network Installers, DSTV and a number of radio stations have been delinquent in fulfilling their financial obligations and meeting up with their legal obligations to obtain Licenses and Frequency Authorizations.

Consultations have been held with broadcast service providers on several occasions but no compromise has been struck. The LTA Board of Commissioners is currently reviewing recommendations to determine an effective way forward.

### 2.2 Signs of Encouragement in Data Provision by Operators

The Department notes with satisfaction, the operators' cooperation with respect to the provision of performance and sector data. This has improved with all major operators actively providing data upon request by the LTA. This process took some getting used to, but it now seems that operators have good reasons to provide their data as required by Law.





## 2.3 Regulatory Instruments

In 2011 the LTA developed, in collaboration with stakeholders, a number of Regulations. Some drafts are still in process, while others have been finalized.

- Finalized Regulations:
  - ^ SIM Card Registration Regulation (LTA-REG-004)
  - ^ Regulations on International Traffic (LTA-REG-005)
  - ^ Amendments to Interconnection Regulations (LTA-REG-003)
- Draft Regulations currently in process:
  - ^ License and Regulatory Fees Regulations
  - ^ Amendments to Telecommunications Licensing Authorization Regulations (LTA-REG-001)
  - ^ Regulations on Violations and Penalties
  - ^ Quality of Service Regulations
  - ^ Numbering Regulations
  - ^ Regulations on Cable Landing station including price cap modeling.

## 2.4 LICENSING REPORT

### *Demand for Individual License declined in 2011*

The demand for Individual Licenses declined in 2011. The LTA already has on file, over 15 Expressions of Interest (EOI) from previous years and those requests have not been pursued because of market saturation and the relatively high entry barriers in terms of License and Regulatory fees currently being applied on new technologies.

In 2011, there were very few EOIs for authorization to use WiMAX technology

and only one new EOI to use LTE (Long Term Evolution), a 4G technology. Interestingly, existing operators have pursued additional Licenses for other advanced technologies. In late 2011, LonestarCell/MTN expressed interest in acquiring a UMTS License and Cellcom was granted its UMTS License earlier in the year.

During the year under review, the LTA received a total of fifty-three (53) EOIs from different institutions and individuals seeking authorizations to use various technologies including UMTS, INMARSAT, VSAT, VHF, TV, FM radio frequencies etc. Thirty-five (35) of the 53 submitted applications, twenty-two (22) of which were approved and licensed. The remaining thirteen (13) applications were pending at year end.



LTA Board of Commissioners signing UMTS agreement with officials of CELLCOM on May 10, 2011



Staff of Lonestar Communications Company conducting the first SIM card registration at the official launch of the exercise at the Monrovia City Hall on July 18, 2011.

Category / Service Type	Expressions of Interest	Applications Filed	Licenses Issued	Applications Pending
LTE	1	0	0	0
WIMAX	3	1	0	1
UMTS	2	2	1	1
CDMA	1	1	1	0
ISP	4	3	2	1
Community Radio	8	3	1	2
Commercial Radio (FM)	5	2	0	2
UHF Radio	1	1	0	1
VSAT Installation	20	16	13	3
Free to Air TV Broadcast	4	3	2	1
Direct to Home TV Broadcast	2	1	0	1
Inmarsat BGAN	2	2	2	0
Total	53	35	22	13

**Table 1: Aggregates of EOIs and Applications and their statuses at the LTA**

Also during the review period, 41 Licensees applied to renew their Licenses, 40 of which were approved as shown in the below table.

Category / Service Type	Renewal Requests	Fulfilled Renewal Requirements	Licenses Renewed
ISP	3	2	2
Community Radio	2	2	2
Commercial Radio (FM)	2	2	2
Commercial Radio (SW)	1	1	1
UHF Radio	1	1	1
VSAT Installation	16	16	16
HF	6	6	6
UHF	2	2	2
VHF	8	8	8
Total	41	40	40



**LTA Board of Commissioners signing an agreement with the national operator - Libtelco**

## 2.5 New License and Fees Regulations on the Horizon

The current licensing regime is being challenged by the realities of today. Technology Neutrality and Universal Licensing as well as concerns about operators' ability to meet their financial obligations have created the need to make changes to this regime. In furtherance of the process the LTA commenced in 2010 to implement a new licensing regime, a draft amendment to LTA-REG-001 was completed in 2011 and is currently being prepared for stakeholders' consultation in 2012.

The LTA intends for the amended Licensing Regulation to adopt relevant ITU recommendations and new trends, as well as to follow best practices of policymakers and other regulators in Africa.

## 2.6 Streamlining of Licensing Process

Although there is still room for improvement, the LTA saw positive progress in the handling of applications. There were a few instances of prolonged delays but these exceptions can be justified. Compared to previous years, there were sufficient efficiency gains in processing applications.

Additionally, there were incidents of radio and television stations taking advantage of the lack of coordination between the licensing procedures at the Ministry of Information and that of the LTA. As a result, the LTA has interfaced with the Ministry to ensure that radio and television broadcasters comply with the procedures established by both entities.

## 2.7 MARKET TRENDS

### Market Development

In 2011, the telecom market experienced a significant increase of 12.58 % in mobile market penetration over the previous year, representing a penetration rate of 56.39 %. The rapid growth in the sector can be attributed to increased competition. Some areas that have fostered competition include:

- ◆ Innovative calling plans such as discounted calls and free airtime at night.
- ◆ Economic empowerment through the introduction of durable & less expensive handsets, thereby increasing the number of persons owning telephones.
- ◆ Increased marketing promotions
- ◆ Increased sales of SIM cards due to significant reduction in cost.
- ◆ Improved Quality of Service on some networks.
- ◆ Increased coverage areas.

### Mobile Telephony

Mobile telephone service providers reported a record total of 2,029,926 subscribers for year ending 2011, representing a growth of 29% over the prior year and resulting in a penetration rate of 56% in a country with less than four million people. There has been a steady rise in mobile telephone subscription since its introduction on the Liberian market. Today, mobile telephones account for the significantly large percentage of ICT usage and access throughout the country. It is the most prevalent means of ICT access.



Mobile phones

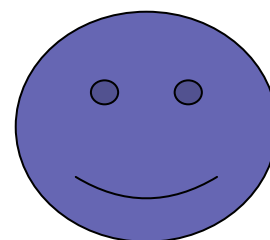
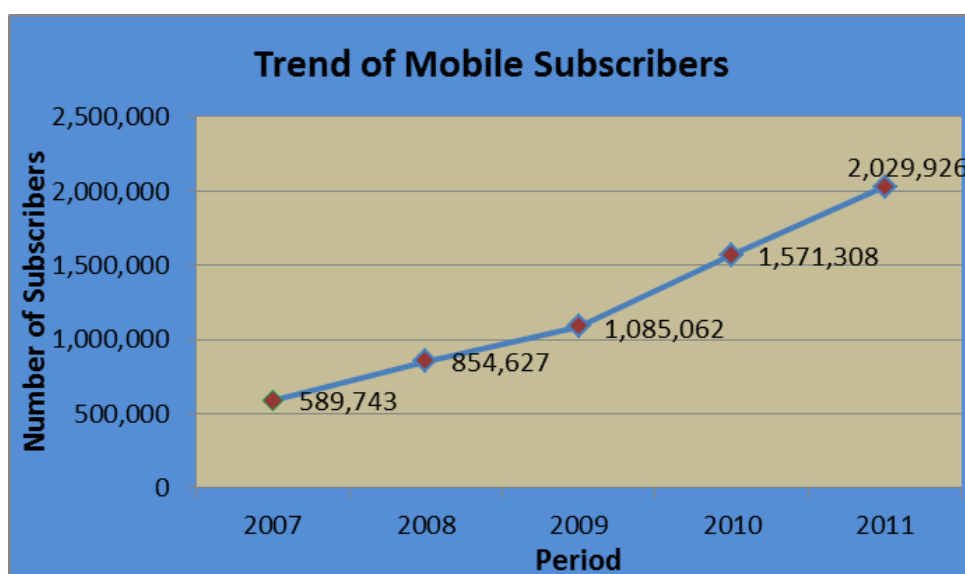
Prepaid subscribers data					
Service Provider	2007	2008	2009	2010	2011
LiberCell	N/A	N/A	27,332	29,159	25,928
Comium	63,734	64,373	60,343	134,401	156,725
Cellcom	201,000	282,500	363,500	639,526	818,256
LonestarCell/MTN	321,982	504,385	630,307	762,159	1,004,554
Libtelco			1,800	4,463	7,368
<b>Total prepaid subscribers</b>	<b>586,716</b>	<b>851,258</b>	<b>1,081,482</b>	<b>1,569,708</b>	<b>2,012,831</b>
Postpaid subscribers data					
Service Provider	2007	2008	2009	2010	2011
LiberCell	N/A	N/A	N/A	246	300
Comium	3,027	3,369	3,553	3,446	12,551
Cellcom	N/A	N/A	N/A	1,000	1,088
LonestarCell/MTN	N/A	N/A	27	1,371	1,235
Libtelco			1,200	0	1,921
<b>Total postpaid subscribers</b>	<b>3,027</b>	<b>3,369</b>	<b>3,580</b>	<b>6,063</b>	<b>17,095</b>
<b>Total mobile subscribers</b>	<b>589,743</b>	<b>854,627</b>	<b>1,085,062</b>	<b>1,571,308</b>	<b>2,029,926</b>

Table 3: Data for mobile telephony in Liberia

## 2.8 Sector data

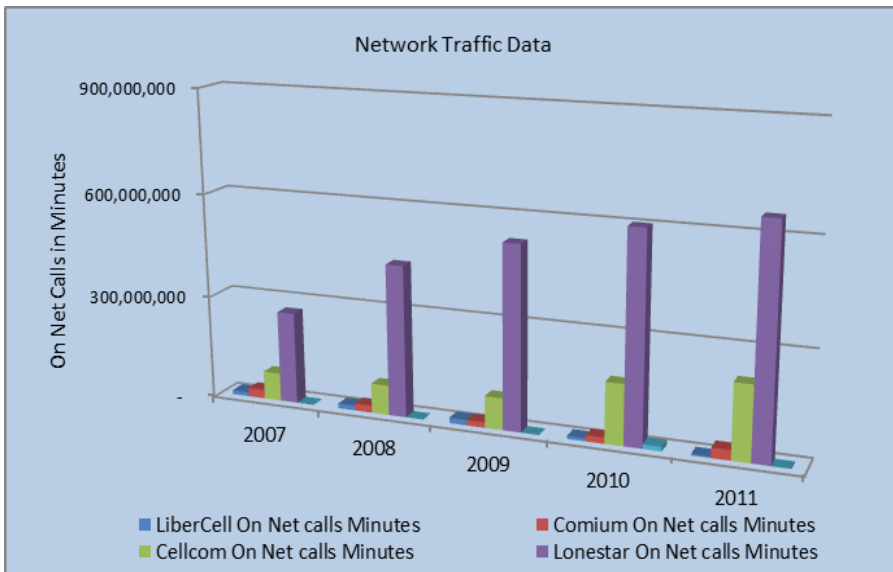
Figure 1: Trend of mobile subscribers over the last five years

Statistics submitted by major operators in Liberia reveal that there has been a tremendous increase in sector growth in terms of mobile telephony. Between 2007 and 2011 the sector experienced an increase in mobile subscribers of 70.9% while the average growth rate for mobile telephony from 2007 to 2011 is 26%.



**“Hi, I am a mobile subscriber”**

**Figure 2: Mobile Network Traffic Data over the last five years**

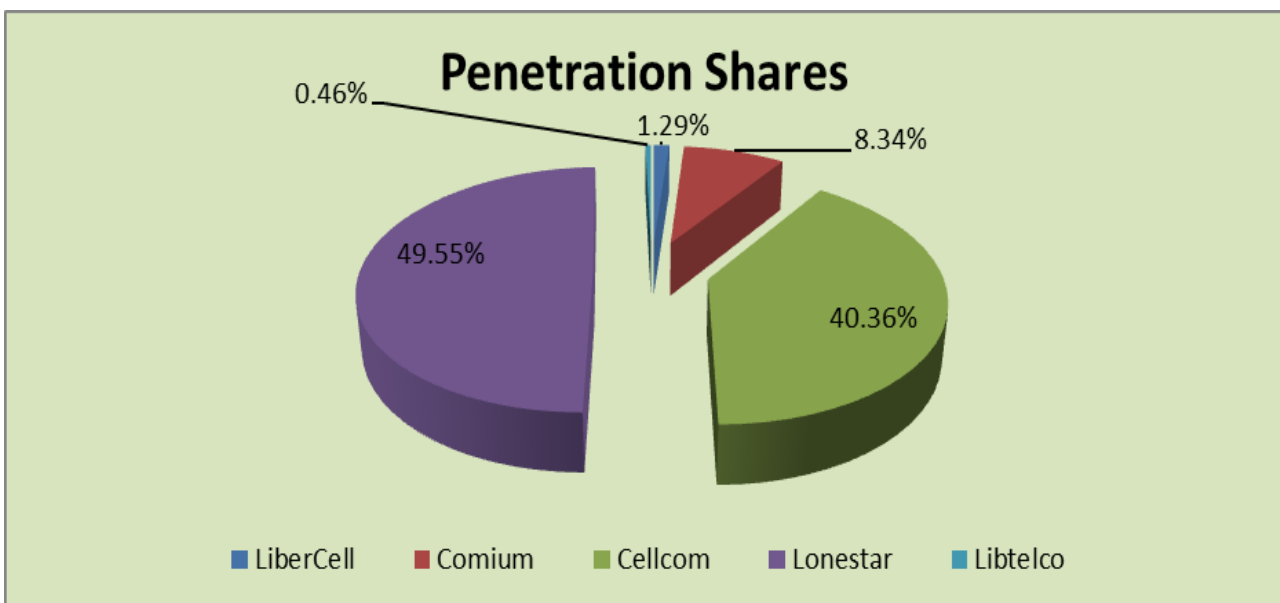


The steady growth of the mobile market suggests that market shares of network operators should increase proportionally; however, some network operators are clearly struggling to compete in this sector as evidenced by reduced or comparatively low network traffic and number of subscribers.

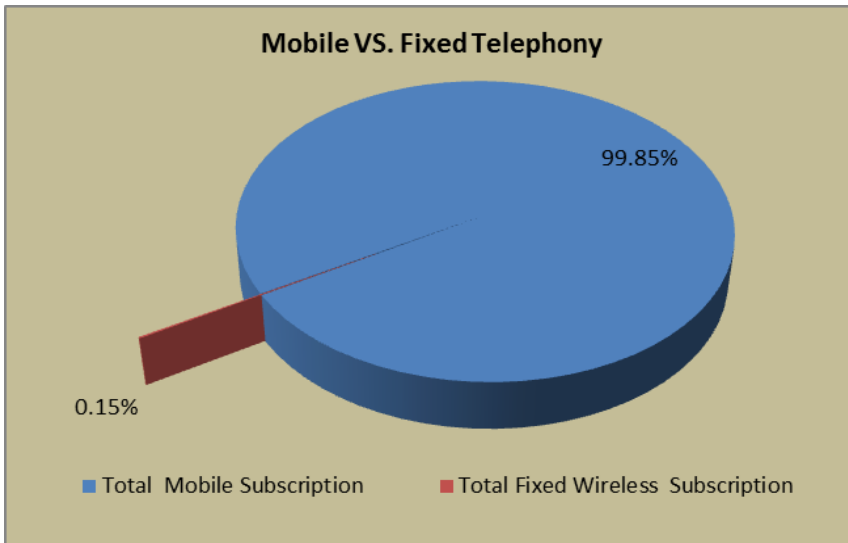
## 2.9 Market Shares

Figure 3 shows LonestarCell/MTN is ahead in the market with a share of 49.55 % representing an increase of 1.5 % over the previous year. Cellcom follows second as a strong competitor with a share of 40.36 % which represents a decline of 0.6 % from the previous year. Comium and LiberCell follow in third and fourth with market shares of 8.34 % and 1.29 % respectively. Both Comium and LiberCell experienced a market share decline of 0.7% respectively during the past year. Libtelco, the designated national operator and only CDMA network in the country, has the least share of 0.46 % representing a gain of 0.1 % from the previous year.

**Figure 3: Market Share per Operator**



## 2.10 Fixed Telephony

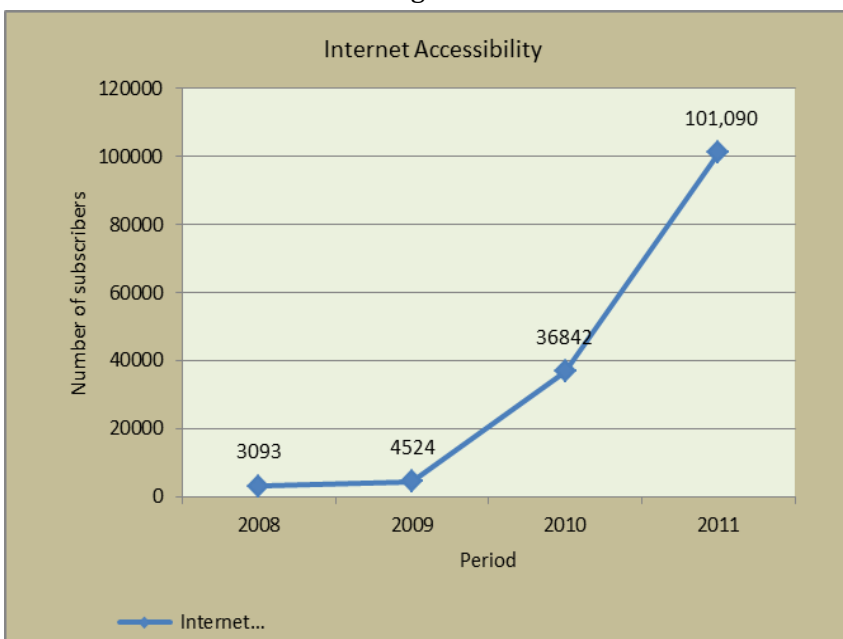


**Figure 4: Mobile vs. Fixed Telephony in Liberia**

Figure 4 shows that most of the sector's telephone communications are provided through mobile telephony which far exceeds that of fixed telephony. Currently, Libtelco is the only service provider to offer fixed telephony through wireless infrastructure. West Africa Telecommunications also plans to offer fixed telephony to the public after completion of its ongoing trial runs.

## 2.11 Internet Access

One of the most notable challenges in the telecom sector is access to the Internet.



**Figure 5: Trend of Internet Accessibility**

Internet statistics obtained from six major service providers, as well as internet user estimates obtained from schools, businesses, public offices and Non-Governmental Organizations suggest approximately 10% of the entire population have access to the Internet.

However, over the years this segment of the market has grown with subscription increases. Figure 5 shows the growth of 36% from 2010 to 2011. Moreover, the ACE cable in Liberia is expected to increase internet accessibility at an exponential rate in the coming years.



**Internet antennae**

## 2.12 Enhancing Data Collection Through Network Monitoring

With the drive to improve the performance of the telecom sector in Liberia, the LTA on December 31, 2011 entered a contract with an international telecommunication consultancy and management firm, Global Voice Group (GVG), to implement the LTA International Gateway Management System (IGMS) project.

The IGMS project will ensure transparency through accurate data collection from the various networks and Quality of Service standards while securing significant revenue for the GOL/LTA.

## 2.13 Consumer Monitor

The LTA has started the monitoring of operators' tariff charges to consumers. All operators were requested in 2011 to submit their tariff rates and charges for both voice and data services provided locally and internationally. Operators were also requested to publish copies of their rates and charges at their business offices for public viewing, in addition to publication on their websites, as required by the Telecommunications Law.

Over the years, Liberia has benefited from and continues to benefit from declining end-user charges for local telecommunications services. Currently, consumers pay an average United States thirteen and one-half cents (US\$0.135) for local calls, which, when compared to tariffs in the sub-region, is relatively low. The per-minute charge for international calls, which varies depending on the destination of the call, ranges from as low as United States one cent (US\$0.01) per minute during special promotions, to as high as United States forty-three cents (US\$0.43) per minute.

Consequently, there has been a tremendous gain in reducing the cost of local calls to consumers. This gain is largely attributed to the highly competitive market that the LTA continues to encourage in the country.

With the regulator standing firmly to continue nurturing such competition, it is hoped that the Liberian consumers will continue benefiting immensely from high quality of services at affordable prices.

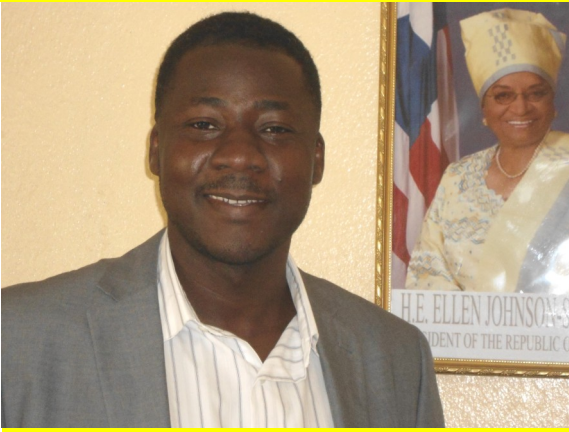
## 2.14 Regulatory Fees and Charges

The LTA periodically reviews its existing tariffs and makes adjustments, where appropriate, to reflect the cost of regulating the sector. Although the LTA intends to maintain stability to assure the sector of consistencies and objectivities, new tariffs and fees were introduced and approved by the BoC to take immediate effect in 2010. These tariffs only affected new services that were not anticipated in the existing tariff regime.

Furthermore, the process of creating a more efficient tariff regime has been initiated. Additionally, non-GSM operators are currently in the process of being standardized. Consultative meetings have been held and follow up meetings are scheduled with radio and TV stations, as well as with ISPs and VSAT operators. Essential inputs were provided by stakeholders that are being incorporated into a final licensing regime.



Satellite Dishes



**Henry W. Benson**  
**Commissioner**

## **3.0 ENGINEERING and TECHNOLOGY SERVICES**

The Engineering and Technology Department, whose core function is to ably manage and monitor the scarce spectrum resource, contributed immensely during the period under review to the achievements of the LTA in the allocation and assignment of frequencies, management of the Numbering resources and spearheading several major technical projects such as the ITU-driven Analogue to Digital Migration, the ECOWAS-facilitated Telecommunication Information Management System (SIGTEL), and the LTA's Telecommunication Information Gathering Project.

2011 also presented several challenges, and the LTA through the Engineering and Technology Department was involved in several technical investigations for interference and Quality of Service issues.

### **3.1 Spectrum Management and Monitoring**

The LTA, in managing the radio spectrum, accomplished the following in 2011:

- ◆ Updated Frequency Register (HF, VHF, UHF) and National Frequency Allocation Table.
- ◆ Assigned some backhaul or microwave frequencies in the 13 GHz, 18 GHz and 23 GHz bands to Liberia Telecommunications Corporation and Cellcom Telecommunications Incorporated.
- ◆ Mapped 2.5 GHz and made assignments to Lonestar and NANASAT.
- ◆ Mapped 3.5 GHz band and made assignments to Liberia Telecommunications Corporation and West Africa Telecommunications.
- ◆ Assigned an 800 MHz CDMA frequency bandwidth to Libtelco.



- ◆ Authorized four (4) entities to operate FM radio stations.
- ◆ Authorized 14 Very Small Aperture Terminals (VSATs) to be used by 9 companies and organizations in Liberia.
- ◆ Authorized Saints Media Incorporated and Chronicle Printing House Incorporated to operate National TV Stations.

### 3.2 Telecommunication Information Gathering

A Telecommunication Information Gathering project was launched in 2011 to update the Spectrum Management System for Developing Countries (SMS4DC) database. The SMS4DC software application was developed by the ITU to assist developing countries in keeping track of spectrum users in their jurisdiction. The ITU donated the SMS4DC and related hardware peripherals to the LTA in 2010. The project saw a team of engineers embarked on a field exercise to collect information on all telecommunication installations and frequency users in Montserrado and Margibi Counties. During these field exercises, business entities, non-government institutions, and private homes were targeted. Information obtained



LTA Engineers collect telecommunications installation information in Central Monrovia in its Telecommunication Information Gathering Project

on VSATs, FM Broadcasting Radio Stations, Satellite (Free to Air) TVs and HF/VHF/UHF radio users is being validated.

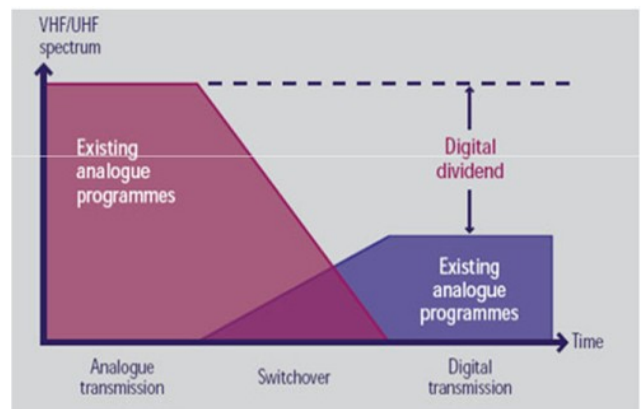
### 3.3 Analogue to Digital Migration

The LTA has made initial steps in preparation for the Analogue to Digital Migration (Switchover), by attending regional coordination meetings and workshops.

The Switchover process is an ITU-driven worldwide initiative to digitize television broadcast transmission frequencies and thereby release spectrum for mobile broadband.

Digital Switchover is expected to bring economic value, quality and efficient broadcasting, innovative, diversified and more local content to the Broadcasting Sector. It will help to fulfill Universal Access commitments and can be used to achieve health, education, and cultural objectives.

A Digital Dividend (released spectrum) will result from the Analogue to Digital Switchover and it is very important due to electromagnetic wave characteristics. The released spectrum will be used for mobile broadband and other interactive telecommunication services.

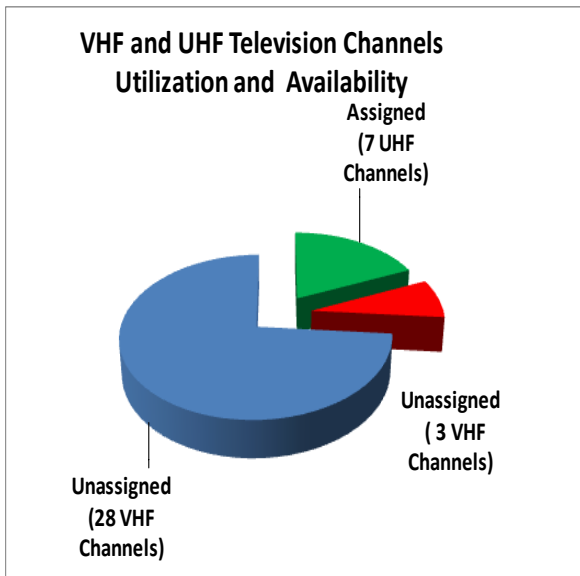


The Digital Dividend

### 3.4 The SIGTEL Project

SIGTEL is an ECOWAS sponsored Telecommunication Information Management System project for West African States to collect and centralize telecommunications data. ECOWAS has requested that certain Geographical Information System (GIS) data be recorded in the SIGTEL Database. The LTA has collected and submitted GSM & CDMA operators' data for the

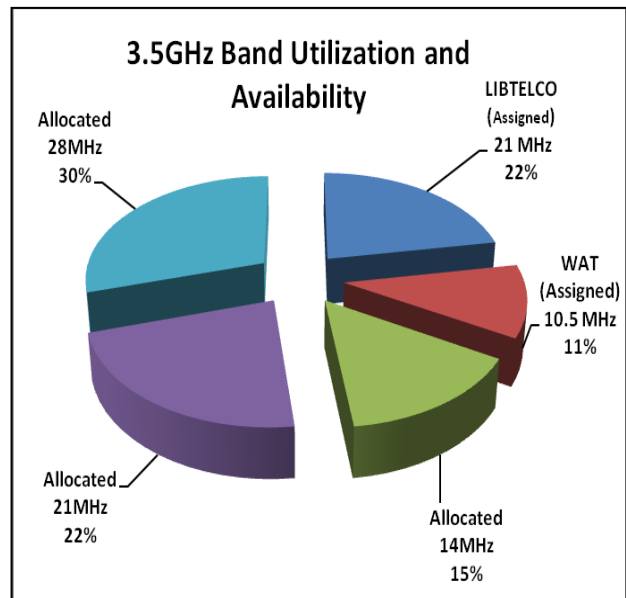
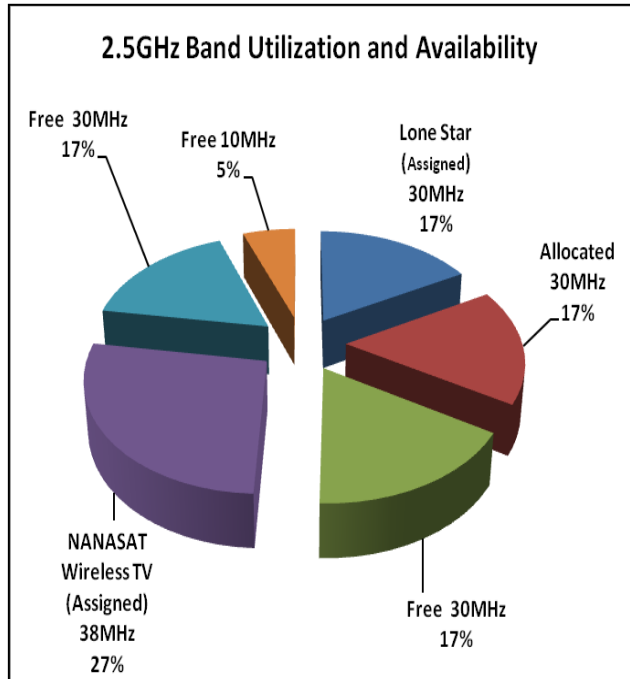
### 3.5 Spectrum Utilization and Availability



**Note:** Most of the UHF channels are going to be used for digital television broadcasting after the Analog to Digital Switchover.

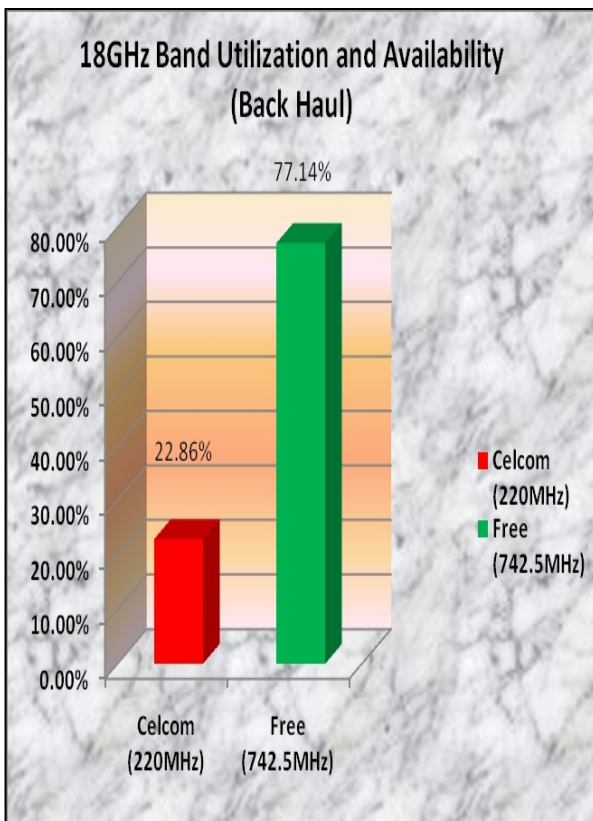
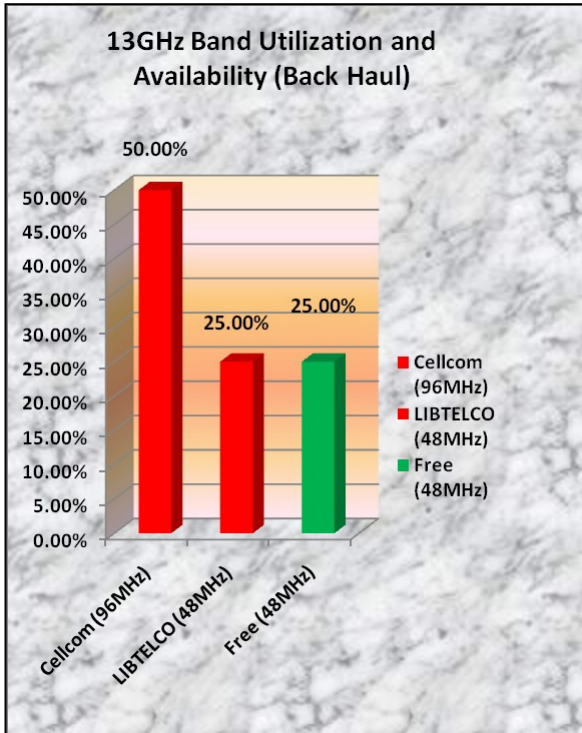
### Broadband

Upon completion of the mapping of the 2.5 GHz and 3.5 GHz bands, the Utilization and Availability of the bands are shown in the chart below:



### Backhaul Frequencies

The LTA assigned backhaul frequencies in the 13 GHz, 18 GHz and 23 GHz bands. Utilization and Availability of the 13GHz and 18GHz is graphed below.



### 3.6 Equipment Type Approval

Type approval is a regulatory function that requires equipment to be certified to have met minimum technical and safety requirements so as to ensure its usefulness and to safeguard consumers' interest. It is through this process that the LTA verifies that electromagnetic emissions do not pose health problems or cause interference to communications equipment, nor create safety hazards.

A number of low power electronic devices were type approved for use in Liberia. A total of 24 type approval certificates were issued.

### 3.7 Technical Activities

Liberia's radio spectrum is being used by certain unknown entities without reference to the LTA. As a direct result of this illegal spectrum usage, assignments made by LTA to registered entities are being interfered with. Lonestar, WAT, Buchanan Renewables and other entities have complained that their assignments are being interfered with.

The LTA issued a UMTS license to one of the GSM Mobile companies operating in Liberia. In order to ascertain the viability and ability of the GSM company to introduce UMTS on the Liberian market, the LTA sent a due diligence delegation to ZTE in China. ZTE is the manufacturer of the UMTS equipment.

### 3.8 Technical Regulation

The LTA initiated the process of drafting three technical regulations: the Numbering Regulation, Type Approval Regulation and Quality of Service Regulation.

## National Numbering Plan

The LTA assigned two new number blocks in 2011. (033) 200 XXXX was assigned to Telemarketing & Advertisement Services (TEMAS), a newly licensed operator and (90) 3XX XXXX was assigned to Interactive Media Corporation, a Premium number operator.

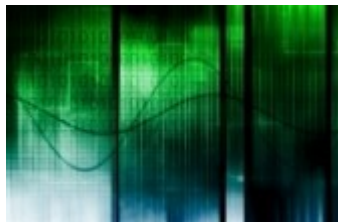
National Numbering Plan of Liberia

Operator	Number Block
Comium Liberia Incorporated	(55) 0XX XXXX
Cellcom Telecommunications Incorporated	(77) 6XX XXXX
Cellcom Telecommunications Incorporated	(77) 7XX XXXX
Atlantic Wireless (Liberia) Incorporated	(99) 4XX XXXX
Lonestar Communications Corporation	(88) 0XX XXXX
Lonestar Communications Corporation	(88) 6XX XXXX
Lonestar Communications Corporation	(88) 8XX XXXX
Telemarketing & Advertisement Services (TEMAS)	(33) 200 XXXX
Telelinks International	(90) 0XX XXXX
Interactive Media Corporation	(90) 3XX XXXX
West Africa Telecoms Incorporated (WAT)	(33) 0XX XXXX
Liberia Telecommunications Corporation (LIBTELCO)	(20) XXX XXXX





Cable-laying vessel offloading ACE cable on Liberia's coastal waters





Lamini A. Waritay  
Commissioner

#### 4.0 PUBLIC and CONSUMER AFFAIRS

The Public and Consumer Affairs Department during the year in review endeavored to lay the foundational pillars needed for the imminent implementation of the Universal Access Program (UAP) — which is aimed at spreading the benefits of telecommunications services to the unserved and underserved areas of the country. With the approval of the National Telecommunications & ICT Policy document by Cabinet in June 2011, and the imminent establishment of the Universal Access Fund, LTA is now poised to minimize if not eliminate the persisting digital divide between the urban centers and the interior parts of the country in the next few years.

In pursuit of this national imperative, the Public and Consumer Affairs Department embarked on a process of recruiting the necessary manpower and acquiring other capabilities that will ensure a rapid and effective Universal Access Program (UAP) in the sector.

The Department also strengthened its information dissemination strategies and programs in light of deliberate attempts by some service providers to undermine the statutory mandate of the LTA.

Accordingly, it revived its Radio program (LTA Diary) and expanded its media networking activities—covering information on the benefits of the Africa Coast to Europe (ACE) fiber optic cable landing in Liberia, basic facts about the International Gateway Measuring System (IGMS) and its benefits to Liberia as a country and consumers in general. The LTA Diary was also used to encourage consumers to take advantage of the SIM card registration process and timely have their SIM cards registered in order to maintain seamless communication links within and outside of Liberia.

The past year also saw the formulation of

preparatory plans which are now at an advanced stage to set up the first LTA regional office in Gbarnga, Bong County, that would deal directly with a wide range of consumer issues including services provided by the various GSM phone companies in the leeward areas of the country.

The LTA Gbarnga regional office will provide consumer information, education and conduct awareness programs through public meetings and hearings as well as through print and electronics media. The regional office will also coordinate and facilitate the convening of Consumer Parliaments in the leeward counties of the country.

Indeed, one of the challenges LTA faces is to incrementally decentralize its operations in the next few years by setting up additional regional offices. By so doing, telephone subscribers outside Monrovia and its environs will have the opportunity to benefit from consumer awareness and education programs that will be carried out by the LTA satellite offices. In this regard, the department responsible for public and consumer affairs in the year in review recruited the requisite personnel and worked on strategies that will help consumers in all counties better relate to the telecom industry.

As part of LTA's overall objectives and strategic programs, the department embarked on creating awareness on the potential health risks associated with the use of Information Communication Technology or ICT and Telecommunications products. Toward this end, the Consumer Affairs section, during the year in review, developed several projects to be undertaken at both the head and regional offices, including the hosting of a number of forums to engage the public and service providers.

Given the aggressively competitive telecommunications market, the department recognized that it needed to establish guidelines that promote consumer protection, empowerment and confidence. It therefore drafted

some Consumer Protection Guidelines. The draft Guidelines focus on a wide range of issues, including the enhancement of service transparency, safeguarding consumer rights, and providing clear guidance to service providers in relating to consumers. Additionally, it regulates how Service Providers may properly promote and provide their services, thereby enhancing consumer protection.

When the draft Guidelines are approved by the Board of Commissioners, service providers will have to adhere to the principles stipulated in the Guidelines to ensure that they offer quality services, and consumers get value for money they spend on telecommunications products and services.



**Consumers at a telecommunications public forum in Maryland County, South Eastern Liberia**





**Harry T. Yuan, Sr.  
Commissioner**

## **5.0 GOVERNMENT AFFAIRS & NATIONAL POLICY**

During the year in review, consistent with Part III Section 3.5(c) of the National Telecommunications and ICT Policy, the Liberia Telecommunications Authority (LTA), conducted extensive consultations with service providers which eventually culminated with the official launch of the Subscribers Identification Module (SIM) Card and the Removable User Identification Module (RUIM) Registration on July 18, 2011. The ceremonial launch was performed by the Vice President of Liberia, His Excellency Joseph N. Boakai.

On the day of the launch, Lonestar, Cellcom, Comium, Libercell and Libtelco, immediately commenced the registration of all existing identification modules in the country.

The SIM Card registration is part of LTA and, by extension, the Government of Liberia's overall desire to enhance a conducive environment for the smooth operations of the telecommunications sector. The LTA considers the SIM card registration process a crucial imperative because of national security concerns and other compelling reasons.

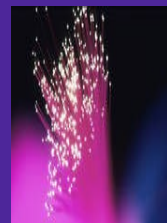
LTA is poised to take custody of the Domain Names Platform in Liberia. As policy advisor to the Ministry of Posts and Telecommunications, the LTA is also developing a framework for the allocation and assignment of the Domain Names. This platform will serve as Liberia's agenda for the global body known as the Internet Corporation for Assigned Names and Numbers (ICANN).



## 6.0 FINANCIAL SUMMARY

No	Sources of Revenues	License Fees paid to GoL (Actual)	Spectrum/Regulatory Fees paid to LTA (Actual)
	<b>Beginning Cash Balance as of Jan. 1, 2011</b>		<b>\$265,492.70</b>
	<b>Revenue 2011:</b>		
1	Cellcom - GSM	1,347,719.13	1,712,062.33
2	Comium - GSM	200,000.00	368,797.01
3	Lonestar-GSM/WIMAX	2,250,000.00	1,370,274.00
4	Libercell - GSM	-	363,308.00
5	West Africa Telecom - WIMAX	200,000.00	565,000.00
6	ISPs, VSAT, VHF, HF, Application fees..	31,703.02	241,583.09
	<b>Total Revenue</b>	<b>\$4,029,422.15</b>	<b>\$4,621,024.43</b>
	<b>Total Cash Balance</b>		<b>\$4,886,517.13</b>
	<b>Expenses 2011:</b>		
1	Operating Expenses		\$3,647,046.87
2	Capital Expenses		104,844.00
3	Contribution to GoL, Nat'l. Cause, etc..		319,946.93
	<b>Total Expenses</b>		<b>\$4,071,837.80</b>
	<b>Ending Cash Balance December 31, 2011</b>		<b>\$814,679.33</b>

Advances in the technology of telecommunications have proved  
an unambiguous threat to totalitarian regimes everywhere.  
— Rupert Murdoch



Published by:  
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