Establishment of Harmonized Policies for the ICT Market in the ACP Countries

Regulatory accounting and cost modelling in Sub-Saharan Africa

West Africa
Regional assessment

HIPSSA

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Foreword

Information and communication technologies (ICTs) are shaping the process of globalisation. Recognising their potential to accelerate Africa's economic integration and thereby its greater prosperity and social transformation, Ministers responsible for Communication and Information Technologies meeting under the auspices of the African Union (AU) adopted in May 2008 a reference framework for the harmonization of telecommunications/ICT policies and regulations, an initiative that had become especially necessary with the increasingly widespread adoption of policies to liberalise this sector.

Coordination across the region is essential if the policies, legislation, and practices resulting from each country's liberalization are not to be so various as to constitute an impediment to the development of competitive regional markets.

Our project to 'Support for Harmonization of the ICT Policies in Sub-Sahara Africa' (HIPSSA) has sought to address this potential impediment by bringing together and accompanying all Sub-Saharan countries in the Group of African, Caribbean and Pacific States (ACP) as they formulate and adopt harmonized ICT policies, legislation, and regulatory frameworks. Executed by the International Telecommunication Union (ITU), co-chaired by the AU, the project has been undertaken in close cooperation with the Regional Economic Communities (RECs) and regional associations of regulators which are members of the HIPSSA Steering Committee. A global steering committee composed of the representatives of the ACP Secretariat and the Development and Cooperation – EuropeAid (DEVCO, European Commission) oversees the overall implementation of the project.

This project is taking place within the framework of the ACP Information and Telecommunication Technologies (@CP-ICT) programme and is funded under the 9th European Development Fund (EDF), which is the main instrument for providing European aid for development cooperation in the ACP States, and co-financed by the ITU. The @CP-ICT aims to support ACP governments and institutions in the harmonization of their ICT policies in the sector by providing high-quality, globally-benchmarked but locally-relevant policy advice, training and related capacity building.

All projects that bring together multiple stakeholders face the dual challenge of creating a sense of shared ownership and ensuring optimum outcomes for all parties. HIPSSA has given special consideration to this issue from the very beginning of the project in December 2008. Having agreed upon shared priorities, stakeholder working groups were set up to address them. The specific needs of the regions were then identified and likewise potentially successful regional practices, which were then benchmarked against practices and standards established elsewhere.

These detailed assessments, which reflect sub-regional and country-specific particularities, served as the basis for the model policies and legislative texts that offer the prospect of a legislative landscape for which the whole region can be proud. The project is certain to become an example to follow for the stakeholders who seek to harness the catalytic force of ICTs to accelerate economic integration and social and economic development.

I take this opportunity to thank the European Commission and ACP Secretariat for their financial contribution. I also thank the Economic Community of West African States (ECOWAS), West African Economic and Monetary Union (UEMOA), Economic Community of Central African States (ECCAS), Economic and Monetary Community of Central Africa (CEMAC), East African Community (EAC), Common Market for Eastern and Southern Africa (COMESA), Common Market for Eastern and Southern Africa (COMESA), Southern African Development Community (SADC), Intergovernmental Authority on Development (IGAD), Communication Regulators' Association of Southern Africa (CRASA), Telecommunication Regulators' Association of Central Africa (ARTAC), United Nations Economic Commission for Africa (UNECA), and West Africa Telecommunications Regulators' Association (WATRA), for their contribution to this work. Without political will on the part of beneficiary countries, not much would have been achieved. For that, I express my profound thanks to all the ACP governments for their political will which has made this project a resounding success.

Brahima Sanou

BDT Director

Acknowledgements

The present document represents an achievement of a global activity carried out under the HIPSSA project ("Support to the Harmonization of ICT Policies in Sub-Sahara Africa") officially launched in Addis Ababa in December 2008. Under this global activity, regional assessments were carried out and this is the report for West Africa Region.

In response to both the challenges and the opportunities of information and communication technologies' (ICTs) contribution to political, social, economic and environmental development, the International Telecommunication Union (ITU) and the European Commission (EC) joined forces and signed an agreement aimed at providing "Support for the Establishment of Harmonized Policies for the ICT market in the ACP", as a component of the Programme "ACP-Information and Communication Technologies (@CP-ICT)" within the framework of the 9th European Development Fund (EDF). i.e., ITU-EC-ACP Project.

This global ITU-EC-ACP project is being implemented through three separate sub-projects customized to the specific needs of each region: Sub-Saharan Africa (HIPSSA), the Caribbean (HIPCAR), and the Pacific Island Countries (ICB4PAC).

As members of the HIPSSA Steering Committee co-chaired by the African Union's Commission (AUC) and the ITU, all the Regional economic communities (RECs) especially Economic Community of West African Countries (ECOWAS), Southern African Development Community (SADC), and Economic Community of Central African States (ECCAS), and East African Community (EAC) provided guidance and support to the consultants, Mr Alain Sawadogo, regional expert for West Africa who was responsible for the assessment and compilation of the regional report for West Africa under the guidance of Ms Saïda Ouederni.

ITU would like to thank all the Regional Regulatory associations in Africa and telecommunications ministries, regulators, academia, civil society, operators and the GSMA for their hard work and commitment in producing the contents of the final report.

Without the active involvement of all of these stakeholders, it would have been impossible to produce a document such as this, reflecting the overall requirements and conditions of the Sub-Sahara West Africa while also representing international best practice.

The activities have been implemented by Ms. Ida Jallow, responsible for the coordination of the activities in Sub-Saharan Africa (HIPSSA Senior Project Coordinator), and Mr. Sandro Bazzanella, responsible for the management of the whole project covering Sub-Saharan Africa, Caribbean and the Pacific (ITU-EC-ACP Project Manager) with the overall support of Ms. Hiwot Mulugeta, HIPSSA Project Assistant, and of Ms. Silvia Villar, ITU-EC-ACP Project Assistant. The work was carried out under the overall direction of Mr. Cosmas Zavazava, Chief, Project Support and Knowledge Management (PKM) Department. The document has further benefited from the comments of the ITU Telecommunication Development Bureau's (BDT) Regulatory and Market Environment Division (RME), particularly Ms. Carmen Prado-Warner, Senior Programme Officer Economist. Support was provided by Mr Marcelino Tayob, Senior Advisor at the ITU Regional Office for Africa, and Mrs. Asenath Mpatwa, ITU Senior Adviser. The team at ITU's Publication Composition Service was responsible for its publication.

Introduction

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Introduction

This assessment report, which covers the West Africa subregion, relates to the ITU-EC joint project for Harmonisation of ICT Policies in Sub-Saharan Africa (HIPSSA). The aim of the project is to develop and promote harmonized policies and regulatory guidelines for the information communications technology (ICT) market, as well as to build human capacity in the field of ICT.

Within the framework of its joint project with the EC, ITU is responding to the needs of HIPSSA beneficiaries and its members – countries of Sub-Sahara Africa - by providing them with an up-to-date review of regulatory practices surrounding regulatory accounting and cost modelling in their respective regions[1]. This identifies trends, around which they can then build a common approach on regulatory auditing and cost modelling.

On the basis of this assessment, updated training material will be developed, delivered and integrated into the networks of both regional associations of regulators and ITU Centers of Excellence, to ensure a sustainable mechanism for delivery.

The present assessment report has been prepared by Mr Alain Sawadogo, the West Africa regional expert contracted under phase one of the HIPSSA project to carry out a regional assessment on costing strategies, and cost model application and processes in the West Africa subregion, in accordance with the terms of reference outlined below. The assessment was undertaken under the close guidance of Ms Saida Ouederni, the project's international expert, and the HIPSSA project team.

The assessment report is divided into four main parts:

- Part 1 – Main findings and recommendations
- Part 2 – Legal and regulatory framework for tariff regulation
- Part 3 – Cost accounting and regulatory auditing
- Part 4 – Costing tools and cost modelling development

Part 1 provides a summary of the main findings of the regional assessment, as analysed in parts 2, 3 and 4.

Special thanks go to Ms Saida Ouederni and the HIPSSA project team members (including Mr Sandro Bazzanella, Ms Carmen Prado-Wagner, Mr Marcelino Tayob, Ms Asenath Mpatwa, Ms Ida Jallow and Ms Hiwot Mulugeta), for the useful guidance, appropriate interventions and assistance they provided throughout the duration of the assessment.

Of the 15 West African countries that were assessed, 12 countries responded to HIPSSA's request for information. These were: Benin, Burkina Faso, Cape Verde, Côte d'Ivoire, Gambia, Ghana, Guinea, Guinea-Bissau, Niger, Nigeria, Senegal and Togo.

Data for Mali and Sierra Leone were obtained from a West African Economic and Monetary Union (WAEMU) study regarding cost models used across the region for harmonization needs.

Regarding Liberia, no data was obtained, because no response was received.

[1] Caribbean, Pacific Island States and Sub-Saharan Africa

Part 1 – Main findings and recommendations

Part 1 – Main findings and recommendations

Main findings

The countries of West Africa are at various stages in the process of implementing cost-accounting systems (see Table 2 – Status of cost-accounting obligations and regulatory auditing). Nigeria reports that cost-accounting obligations have not yet been imposed; Guinea-Bissau reports that such obligations are a legal requirement; and the remaining ten countries indicate that they apply cost accounting in the regulation of wholesale rates (mainly mobile termination rates, or MTR) and retail rates for operators with significant market power (SMP). This *ex-ante* (case-by-case) regulatory approach is consistent with the analysis of legislative frameworks undertaken, which indicated that almost all the countries under evaluation provide for the application of cost-oriented rates (both MTR and retail rates for operators with SMP).

Best practice example

As part of the Establishment of Harmonized Policies for the ICT Market, WAEMU[2] and the Economic Community of West African States (ECOWAS) have prepared a Supplementary Act aimed at establishing a fair, transparent and accessible regulatory environment as regards the access to and interconnection of ICT networks and services.

The goal of the Act is to achieve sustainable competition that guarantees network and service interoperability. It defines the objectives for national regulatory authorities (NRAs) and specifies the rights and obligations of operators and companies seeking an interconnection or network access.

Article 20 of the Supplementary Act A/SA 2/01/07[3] on access to and interconnection of networks and services in the ICT sector, ratified by Member States of ECOWAS, specifies:

> 1. That national regulatory authorities of the Member States should in the shortest time possible, require operators with Significant Market Power (SMP) implementation of cost accounting for the purposes of regulation. The implementation of this type of accounting must begin at adoption of this Additional Act with its completion in 2009 (the latest), in order to properly prepare for the deregulation of the fixed telecommunication market. This Accounting system must submit separate accounts in accordance with the international best practices. It is also recommended that the accounts relating to regulated and unregulated activities are separated.
>
> *Since the publication of this additional act (in 2007), virtually all the countries that signed have not been able to fully implement it.*
>
> 2. The accounts must be by activity (known as "Activity based costing", or ABC).
>
> 3. Cost accounting must be audited annually by an independent body selected by the national regulatory authority at the expense of the operators with SMP. It must allow the national regulatory authority to publish a schedule of costs prior to the submission of a Reference Interconnection Offer (RIO) for approval.
>
> 4. Pending the establishment of a cost accounting system by 2009, the interconnection rates should be calculated using the following recommendations:
>
> *a- Using a regional benchmark;*
>
> *b- Using a tool for cost calculation;*
>
> *c- For Member States with audited cost accounting, a "top-down" model based on historical costs can be used initially (over three years for example) in order to move to a model based on average Long-Run Average Incremental Costs (LRAIC), prompting the SMP operator to a better efficiency;*

[2] WAEMU is equivalent of UEMOA in French
[3] http://www.itu.int/ITU-D/projects/ITU_EC_ACP/hipssa/documents-ecowas-fr.html

d- To determine the appropriate rate of return based on cost of capital, it is recommended to rely on market data.

Up to 2012 most of the countries do not yet have a cost model but continue to use the benchmark (to determine their MTR), which in fact was a provisional solution to enable them to implement the recommendations of the text.

In this sense, the WAEMU (UEMOA in French) Order No. 05/2006/Cm/Uemoa[4] on Uniform Pricing of Telecommunication Services serves as a reminder:

Article 3: General principles

1. Operators and service providers of public telecommunications set their tariffs in compliance with trade laws and regulations, including regional institutions' legislation on competition.

2. Rates are set freely by operators and service providers. However they can be framed in accordance with the provisions of this Rates Directive for an operator or a service provider that has exclusive or dominant position providing a service or a given set of services.

3. Rates are determined in accordance with the principles of transparency, objectivity and non-discrimination.

4. Exceptions motivated by the importance of the additional implementation costs and/or operation of some services, the rates apply without geographical discrimination throughout the national territory. The exceptions referred to above are subject to approval by the National Regulatory Authority.

5. Operators and service providers shall publish their prices. The public network operators are also required to communicate to the National Regulatory Authority retail tariffs at the beginning of each year and any tariff changes before their subsequent implementation.

6. Operators and service providers shall develop measurement systems ensuring the effective implementation of published tariffs. The National Regulatory Authority periodically shall monitor the effective implementation of this principle and shall penalize any fall out.

7. Specific rules may be established by national law, by National Regulatory Authority decision and/or specifications of operators and service providers to clarify the constitution and establishment conditions and modification of tariffs depending on the nature of the services concerned. The National Regulatory Authorities shall consult the Member States through the Regulators Committee to ensure the progressive convergence of the standards of national regulations concerning the various categories of services.

Section 4: Supervision of tariffs

4.1 The National Regulatory Authority may decide to support the rates of an operator or service provider to offset the absence or the inadequacy of competing offers on one or more services, especially if it is not possible to promote the development of competition by granting new authorizations.

4.2 The price cap is intended to:

a) Link service rates to their production costs resulting from efficient management.

[4] http://www.uemoa.int/Documents/Actes/directive_05_2006_CM_UEMOA.pdf

b) Eliminate cross-subsidies between different services.

4.3 This decision regarding price control is taken by the National Regulatory Authority, to ensure:

a) The absence of any substantial competition in the concerned service or services;

b) There exists no significant difference between the price of the service or services and their estimated reference cost as specified below.

4.4 The National Regulatory Authority may waive a tariff schedule when the concerned service market is not material to the needs of the public or when its development prospects are misidentified, especially during phases of launching a new service.

4.5 The tariff framing is done by setting weighted average values for the ceiling and floor prices of the concerned service. The frame may include a basket of services representative of the consumption pattern of users. Fixation of floor price is determined in case of risk of loss in selling the services.

4.6 The supervision may be imposed over a multi-year period with a gradual evolution of price ceilings or floors to facilitate the adaptation of market players and/or to consider a gradual improvement of objective productivity factors. In this case, the National Regulatory Authority sets the formulas for setting the floor or ceiling price taking into account on the one hand, the objectives of productivity and, on the other, economic indicators representative of changes in cost factors.

4.7 The framing can be decided when granting authorization to a new public network operator. The terms are referenced in the specifications of this operator.

4.8 In other cases, coaching is subject to a reasoned decision by the National Regulatory Authority following an investigation into the competitive position of services concerned and an evaluation of relevant production costs. This decision is notified to the operator or service provider concerned. It is executable within a maximum of two months from its notification date, notwithstanding the exercise of any rights of appeal of the operator or service provider.

4.9 The National Regulatory Authority carries out regular checks of compliance with mentoring decisions by calculating the average price for the public services and baskets of services. In case of non-compliance it sends a notice to the concerned operator or service provider, along with the results of its observations. In case of non-compliance with its requirements, it shall forward its objections to bodies responsible for the repression of anti-competitive practices and/or dominance abuse.

4.10 The operators and service providers can call on the National Regulatory Authority to request a revision of regulatory rules in the event of significant change of the general economic environment, the level of competition or their cost structure. In this case, the National Regulatory Authority, after consideration of the situation, will decide whether to change the rules of supervision and/or suppress coaching.

<u>Article 5: Identification of levels of reference costs</u>

5.1 The National Regulatory Authority evaluates the cost-based price of groups of reference services which may be framed on the basis:

a) Of information supplied by operators and service providers on Constitution of production costs of these services. For this purpose, it has access to operator's general, analytical and auxiliary accounting;

b) Of comparison between rates charged in the same country or comparable countries, especially in the WAEMU, by operators considered efficient. This comparison allows the identification, if any, gains in productivity for the domestic operators and service providers.

5.2 For the calculation of cost-based prices, the National Regulatory Authority considers:

a) Costs directly attributable to the services in question;

b) Common costs in proportion to their contribution to these services.

Costs specific to other services are not included. Costs must take into account long-term economic efficiency, particularly any investment needed to ensure the ongoing renewal and extension of the network with a view to maintaining quality of service. Costs incorporate an appropriate rate of return on capital invested.

The *ex-ante* regulatory approach is consistent with existing ECOWAS/WAEMU frameworks, which provide for the application of cost-oriented tariffs (MTR, and retail rates for operators with SMP) in almost all the countries under evaluation within the West Africa sub-region.

Within this sub-region it was noted that, whereas legislative frameworks are in place that provide for cost-oriented tariffs and tariffs based on efficiency and economic considerations, as well as for some form of regulatory auditing, as these frameworks do not make the methodologies required to implement these measures sufficiently explicit. As a result, the role of, and the approach to be taken by, the National Regulatory Authorities in enforcing cost-accounting and regulatory audit principles is not always clear.

This may be one of the reasons why most NRAs are not undertaking these important functions properly. A failure to apply analytical cost accounting by the given operator, and a lack of resources on the part of the given NRA, are other factors that are preventing the effective use of ex-ante regulatory interventions in these countries.

Regarding relevant WAEMU/ECOWAS frameworks, the degree to which their provisions for cost accounting have been implemented varies significantly from country to country, with relatively low levels of adoption in most jurisdictions. This makes it harder to implement and apply cost accounting and regulatory auditing, either ex-ante or ex-post (regulations implemented to correct certain anti-competition practices).

Strategy for regulatory intervention

In order to promote competition, NRAs try to ensure that operators respect the following principles:

- avoid discriminatory offers
- avoid over-pricing
- avoid predatory pricing
- avoid bundling
- prohibit cross-subsidies between distinct services.

All members of ECOWAS that have signed the Supplementary Act A/SA 2/ 01 /07 on access and interconnection in relation to the ICT sector network and services must ensure that tariffs (retail and wholesale) are cost oriented.

In most West African countries, the applicable legislation pertaining to termination charges on mobile and fixed networks is contained within the country's telecommunication legislation. This legislation stipulates that the establishment and operation of telecommunication networks and services are subject to the allocation of a licence. That licence is delivered through a decree that serves to approve the given

concession agreement and provide a set of specifications. Specifications define the conditions under which telecommunication networks and services are to be established and operated.

In all the countries under evaluation here, the legislation stipulates that the operators of public telecommunication networks shall accede, in objective, transparent and non-discriminatory conditions, to requests for interconnection made by other duly authorized public network operators. The request for interconnection cannot be refused, provided it is reasonable in terms of the requesting party's requirements on one hand, and the operator's capacity to meet it on the other. Any refusal to interconnect must be substantiated and notified both to the requesting party and to the NRA. Dominant operators (that is, those with SMP) must publish an interconnection catalogue each year specifying prices and services offered.

NRAs in West Africa use the following methods to ensure control over tariffs:

- floor price/ceiling price method
- price-squeeze tests (*ex-ante* and *ex-post*)
- price capping regimes.

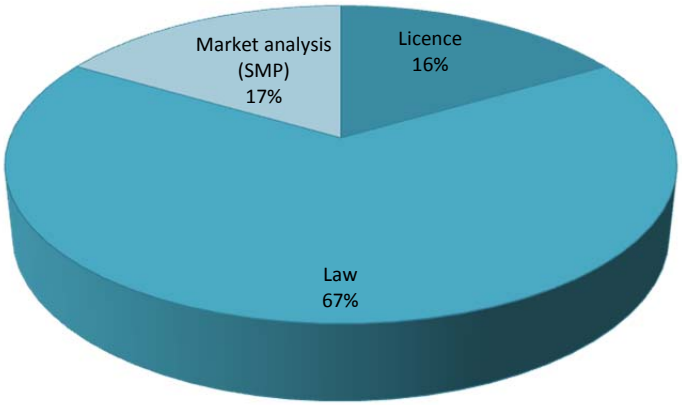
Costing tools

Graph 1: Price control application in West Africa

Source: Author

Of the 12 countries under evaluation in the West Africa subregion, nine (Benin, Burkina Faso, Cape Verde, Côte d'Ivoire, Ghana, Guinea, Niger, Senegal and Togo) use cost orientation to control prices; five use benchmarking; three use price cap; and one (Nigeria) uses retail minus.

Graph 2: Underlying legal and regulatory basis



Source: Author

Ten of the West African countries that completed the ITU questionnaire have adopted the bottom-up (BU) costing methodology for MTR. All 12 respondents have adopted long-run incremental cost (LRIC) as their allocation methodology.

The LRIC-BU model is used to determine production costs related to the various services offered by telecommunications operators and service providers. A small number of countries, such as Burkina Faso and Niger, use a hybrid model (combining BU and top-down (TD)). The case of Benin is particularly instructive. Benin has recently developed its own cost model with the assistance of a consultant (Ecole Supérieure Multinationale des Télécomunications ESMT), and this is now available to all telecommunication operators in the country. The model is an LRIC+[5] model, similar to the one used in Ghana to determine MTR.

In Cape Verde, the fixed operator currently uses a TD cost model, however the NRA is developing a BU model with which mobile operators will be able to determine MTRs.

In five countries, benchmarking appears to be a secondary tool, used mainly for tariff comparison. It is, however, the main method used to define MTRs in Gambia.

For some NRAs, such as the National Telecommunications Commission of Sierra Leone, cost modelling is considered to be a new challenge and needs first to be studied and subsequently introduced.

In order to stimulate the growth of services such as roaming, mobile payment, the deployment of Next Generation Networks (NGNs), and broadband services and infrastructure, a number of NRAs are planning to apply specific regulatory models or suitable deployment strategies, thereby preventing operators from imposing tariffs arbitrarily. It is in this context that Guinea-Bissau plans to establish a landing point for fibre-optic cables, while developing a strategy for the allocation of 3G licences.

Officials from Nigeria's Ministry of Information Technology have expressed their wish to create a unique regulatory authority that would manage all aspects of ICT. A new structure has been proposed, in which the Ministry would manage communications as well as ICT, while a regulatory authority would supervise telecommunications, radio and television broadcasting, postal services and information technology. Each department would be under the authority of a commission.

Basis for cost and asset evaluation

5 LRIC + is LRIC plus mark-up for joint and common costs

Two main approaches are used to estimate the value of assets: historical cost accounting (HCA), as in Ghana; and current cost accounting (CCA), as in Benin, Cape Verde, Côte d'Ivoire, Nigeria, Senegal and Togo.

The drawbacks of the HCA method are:

it does not take into account the impact of the rapidly changing technology sector, since it focuses solely on the past.

it reflects all inefficiencies. As it is based on cost efficiency and capacity,

However the CCA method provides detailed costing information both to control current operations and to help plan for the future.

The concept of capital maintenance works on the basis that income is recognized after capital has been maintained or costs have been recovered. In this sense, the concept used in Benin is financial capital maintenance (FCM), while operational capital maintenance (OCM) prevails in Cape Verde, Ghana and Nigeria.

Depreciation methods and asset lifetimes

Of the four main depreciation methods used worldwide (straight-line, tilted straight-line, annuity and tilted annuity), straight-line is the most commonly used, especially in West Africa. Various other methods, mainly economic depreciation, are used beyond the main four.

The lifetime of an asset depends on its type but also on the country in question. On the basis of the data collected from NRAs in the region, the following trends emerged: for civil works/buildings, the lifetime varied between 10 and 25 years; for power equipment and access telecommunication equipment, between 7 and 10 years; for core network telecommunication equipment, 10 years; for backhaul/backbone transmission equipment, between 7 and 8 years; and for licences, between 10 and 20 years.

Cost of capital

Key variables, such as weighted average cost of capital (WACC), are tightly controlled by NRAs. In Benin, for instance, the estimation of cost of capital is based on the beta factor; in Cape Verde, the capital asset pricing model (CAPM) is used; and in Nigeria both methods are used.

Regulatory auditing

Reliable data gathering remains one of the main problems relating to regulatory auditing. The competence and the availability of the individuals collecting data has an impact on the process.

To calculate the cost of service provision, NRAs from Benin, Burkina Faso, Côte d'Ivoire, Ghana, Nigeria and Togo use the operators' cost accounting data.

Under the regulatory frameworks in place in West Africa, any cost-accounting system must be audited periodically by an independent body appointed by the NRA, with the cost of the audit to be borne by the operator. In some cases (Burkina Faso, Cape Verde, Côte d'Ivoire, Niger and Senegal), the NRA may contribute to the cost of the audit.

Most NRAs (Côte d'Ivoire, Gambia, Guinea-Bissau, Guinea, Niger and Togo) have legislation that addresses regulatory auditing. The implementation of this legislation depends on the country's individual strategy. Some NRAs already exercise tight control over operators' and service providers' tariffs, while others are performing this task for the first time (as in Burkina Faso).

Conclusions and recommendations

On the basis of this assessment, the following conclusions and recommendations may be drawn as regards West African countries. In the list below, conclusions are denoted by the letter 'C' and recommendations by the letter 'R'. Recommendations are highlighted in bold type.

Conclusions

C(i) The communities of ECOWAS and WAEMU, which group all or some of the countries assessed, respectively, put in place harmonized policies and regulatory frameworks within their communities that provide some guidelines on the use of cost-oriented tariffs and/or tariffs based on efficiency and economic considerations.

C(ii) At country level, the speed with which, and degree to which, ECOWAS and WAEMU recommendations are incorporated into national legislation varies from country to country. Benin, Burkina Faso, Mali and Senegal have already adopted legislation integrating those recommendations.

C(iii) There are no *ex-post* checks to verify whether legislation has been transposed in conformity with the original recommendations (that is, checking of decrees that have already been issued to implement the new legislation).

C(iv) All the respondents indicated that their strategy was to apply cost accounting when regulating tariffs for wholesale services (mainly for MTR) and those for operators with SMP. This approach is consistent with the analysis of existing legislative frameworks, which provide for the cost-oriented application of tariffs in all the countries under consideration. It is, however, noted that different countries are at various stages in the implementation of cost-accounting systems, with the majority yet to begin the process.

C(v) In some countries, there appeared to be a legal void in relation to the expansion of data services and infrastructure (such as mobile payments and NGNs)

Overall there is a lack of resource, at the NRA level to carry out the required cost controls and cost audits, and at operator level to establish the required costing systems.

Recommendations

R(i) There is a need to transpose ECOWAS and WAEMU legislative recommendations into national legislation and to ensure their implementation and application, in particular regarding cost orientation and cost auditing.

R(ii) There is an urgent need to draft and apply appropriate legislation, at national and regional level, in order to regulate these data networks and services.

R(iii) NRAs must ensure the enforcement of laws and regulations, to ensure control over tariffs as stipulated in their legislation on regulated services.

R(iv) There is a need for capacity building at both operator and NRA level, to enable them to fulfil their mandated functions in relation to establishing the cost of regulated services and, for operators, implementing related costing systems. Operators and NRA staff should participate in training program on cost and tariff methodologies and strategies (see Annex).

R(v) NRAs should provide methodological and technical support to operators in establishing cost-accounting systems.

Part 2 – Legal and regulatory framework for tariff regulation

Part 2 – Legal and regulatory framework for tariff regulation

Strategy of regulatory intervention

Status of price-control regulation and underlying strategy

Table 1 – Type of regulatory intervention, legal basis and underlying regulatory strategy

	Type: CO, B, PC, RM [1]	Basis: Li, La, SMP[2]	Underlying strategy: purpose, goal, outcome and achievements
Benin	CO	Li (Act 002-2002)	Cost orientation
Burkina Faso	CO	La (loi n°061-2008/AN du 27 novembre 2008)	Cost orientation
Cape Verde	CO, B	La	Interconnection is mandatory by law. Controlling wholesale prices creates competition and causes retail prices to drop
Côte d'Ivoire	CO, PC	Li	Not specified
Gambia	B	La (ICT ACT 2009)	Since the national regulatory authority (NRA) is yet to carry out market analysis and impose cost accounting it is thought wise to use benchmarks in the interim. This has greatly helped in ensuring competition and gives rise to almost uniform tariffs across the board.
Ghana	CO, B	La (Electronic Communications Act 2008, Act 775)	The purpose and objective of setting MTR is to establish fair and equitable interconnection rates for use by network operators; and to ensure such rates are based on the cost associated with the provision of the interconnection service
Guinea	CO, PC	Li	Permanent control
Guinea-Bissau	B	La, SMP	Outcome and achievements
Niger	CO	Li (Ordinance 99-045 and Decree 2000-399/PRN/MC)	To ensure fair and effective competition (Article 12 Ord 99-045)
Nigeria	RM	SMP	To deepen competition and improve market growth

	Type: CO, B, PC, RM [1]	Basis: Li, La, SMP[2]	Underlying strategy: purpose, goal, outcome and achievements
Senegal	CO	Li	Cost orientation
Togo	CO	La (Telecommunications Law 98-005)	Cost orientation

(1) CO: cost orientation (cost-accounting approach), B: benchmark, PC: price cap , RM: retail minus

(2) Li: licence, La: law, SMP: relevant market analysis

Cost accounting and regulatory auditing framework

Table 2 – Status regarding cost-accounting obligations and regulatory auditing

	Cost accounting			Regulatory auditing	
	Mandatory: Yes, No, Pl [1]	Operators implicated: All, SMP, Incumbent	Basis: Li, La, SMP, other[2]	Mandatory: Yes, No, Pl [1]	Basis: Li, La, SMP, ot[2]
Benin	Yes	All	Li	Yes	Li
Burkina Faso	Yes	All	La	Yes	Li
Cape Verde	Yes	All, especially SMP	La	Yes	La (Legislative Decree 7/2005, Licences)
Côte d'Ivoire	Yes	Incumbent	Li	Yes	Li
Gambia	Yes	SMP	La	No	La
Ghana	Yes	All	Li	Yes	Li
Guinea	Yes	All	Li	Yes	Li
Guinea-Bissau	Planned	SMP	La	Yes	La
Niger	Yes	All	La (Article 17, Decree 2000-399)	Yes	Li
Nigeria	Cost-accounting obligations not yet imposed	All	La (Nigerian Communications Act 2003, SMP and other : Reference Interconnection Offer (RIO)	Yes	Li , La (Nigerian Communications Act 2003
Senegal	Yes	All	La (Article 42 of the Telecommunications Code)	Yes	La (Article 42, paragraph 2 of the Telecommunications Code)
Togo	Yes	All	La, Li	Yes	La

(1) Pl: planned

(2) Li: license, La: law, SMP: relevant market analysis; other: as specified

Table 3 – Reasons why cost accounting and/or regulatory auditing are not implemented or foreseen

	Cost accounting not mandated or foreseen	Regulatory auditing not mandated or foreseen
	Reasons: e.g. lack of legal basis, insufficient resources	Reasons: e.g. lack of legal basis, lack of audit framework, insufficient resources
Benin	N/A	Insufficient detail of data submitted by operators
Côte d'Ivoire	N/A	Insufficient detail of data submitted by operators
Gambia	Provided for within the law, but yet to be enforced	Market analysis yet to be carried out; in the process of appointing a consultant to undertake market analysis
Guinea-Bissau	Insufficient resources	N/A
Nigeria	Yet to determine SMP, RIO and SMP obligation	Insufficient detail of data submitted by operators
Senegal	N/A	Lack of audit framework
Togo	N/A	Lack of will among operators

Status of costing tools

Table 4 – Costing tools

	Costing tool used: Yes, No, PI [1]	Type of tool: BU, TD, H, B [2]	Operators: All, SMP, Incumbent	Level of development of tool: E, U, PI [3]	Reason, if no costing tool is used: e.g. lack of resources/skills
Benin	Yes	H (LRIC+)	All	E	N/A
Burkina Faso	Yes	H (LRIC)	All	E	N/A
Cape Verde	Yes	H	The fixed operator currently uses TD model; the NRA is developing a BU model for mobile operators	U	N/A
Côte d'Ivoire	Yes	BU	All	E	N/A
Gambia	No	B	SMP, Incumbent	PI	Lack of resources
Ghana	Yes	BU (LRIC+)	All	To date, a consultant (Interconnect Communication) has run two major interconnect pricing models for the Ghanaian network in 2008-2011 and 2012-2014	N/A
Guinea	Yes	H	All	PI	N/A
Guinea-Bissau	PI	Not specified	Incumbent, SMP	PI	Lack of skills
Niger	Yes	H	All	E	N/A

	Costing tool used: Yes, No, Pl (1)	Type of tool: BU, TD, H, B (2)	Operators: All, SMP, Incumbent	Level of development of tool: E, U, Pl (3)	Reason, if no costing tool is used: e.g. lack of resources/skills
Nigeria	Yes	BU	All	E	Requires capacity building in Interconnect cost-modelling skills
Senegal	Yes	BU	SMP	E	N/A
Togo	Yes	BU (LRIC)	All	E	N/A

(1) Pl: planned

(2) BU: bottom-up, TD: top-down, H: hybrid, B: benchmark

(3) E: existing, U: under development, Pl: planned

Level of MTR and retail price

Table 5 – Level of MTR and retail price

Country	Lowest average level of regulated MTR (per minute) (1)		Retail price: lowest average national off-net price (per minute) (1)	
	Local currency	USD	(Local currency)	USD
Benin	27 XOF	0.05	81 XOF	0.16
Burkina Faso	25 XOF	0.05	90 XOF	0.17
Cape Verde	10 CVE	0.12	33 CVE	0.38
Côte d'Ivoire	35 XOF	0.07	100 XOF	0.19
Gambia			3.00 GMD	0.09
Ghana	0.0001 GHS	0.00005	0.0003 GHS	0.00015
Guinea-Bissau			84 XOF	0,17
Niger	35 XOF	0.07	120 XOF	0.23
Nigeria	10.8 NGN	0.066	38 NGN	0.24
Senegal	23.4 XOF	0.05		
Togo	99 XOF	0.19	150 XOF	0.29

(1) The average is calculated as follows:

$$\frac{Total\ cost\ of\ a\ 3-minute\ call\ during\ peak\ hours * peak ratio + Total\ cost\ of\ a\ 3-minute\ call\ during\ off-peak\ hours * off-peak\ ratio}{3}$$

Where:

Peak ratio is the proportion of calls made during peak hours. Where this ratio is not known, use 70 %

Off-peak ratio is the proportion of calls made during off-peak hours. Off-peak ratio = 1 – peak ratio

Where the peak/off-peak ratio is not known, use the following: peak ratio = 70 %; off-peak ratio = 30 %

Difficulties encountered by NRAs

Data collection

Table 6 – Issues surrounding data collection

	Issues encountered? Yes/No	If yes, at which stage of the collection process?	If yes, what were the reasons? (1)
Benin	Yes	Not specified	Operators had difficulty in providing relevant data, or were reluctant to do so
Burkina Faso	No	N/A	N/A
Cape Verde	Yes	Not specified	Not specified
Côte d'Ivoire	Yes	Not specified	Operator reluctance
Gambia	Yes	Not specified	In most cases, operator reluctance
Ghana	No	N/A	N/A
Guinea	No	N/A	N/A
Guinea-Bissau	Not specified	N/A	N/A
Niger	No	N/A	N/A
Nigeria	No	N/A	N/A
Senegal	Yes	Not specified	Lack of guidelines for regulatory cost accounting
Togo	Yes	Not specified	Difficulties for Operators in providing relevant data (Operator reluctance)

(1) For instance: lack of legal basis, difficulty for operators to provide relevant data, operator reluctance

Disputes

Table 7 – Legal disputes

	Disputes occurred? Yes/No	Nature of dispute	Date	Object of dispute	Outcome	Impacts, if any, on tariff regulation or cost modelling
Benin	No	None	None	None	None	None
Burkina Faso	No	None	None	None	None	None
Cape Verde	Not specified	Not specified	Not specified	Not specified	Not specified	Not specified
Côte d'Ivoire	Not specified	N/A	N/A	N/A	N/A	N/A
Gambia	No	None	None	None	None	None
Ghana	Not specified	Not specified	Not specified	Not specified	Not specified	Not specified
Guinea	Not specified	N/A	N/A	N/A	N/A	N/A
Guinea-Bissau	Not specified	N/A	N/A	N/A	N/A	N/A
Niger	No	None	None	None	None	None
Nigeria	Yes	Regarding new entrants to the market and operators with low economies of scale		Costing elements/financial data related to fully allocated cost method	Additional consultancy on cost of capital and Busy Hour Erlang Determination	Yes

	Disputes occurred? Yes/No	Nature of dispute	Date	Object of dispute	Outcome	Impacts, if any, on tariff regulation or cost modelling
Senegal	Yes	Disagreement with the incumbent operator Sonatel regarding the termination rate applied to the network of a new entrant (Expresso)	2nd quarter 2009	MTR	The NRA has since set the termination rate based on previous interconnection agreements	No
Togo	Yes	Regarding lack of agreement on the repayment of taxes between mobile operators and the incumbent	2000; 2002 and 2007	MTR	NRA arbitration to set rates of repayment	No

Foreseen evolutions and challenges

Price control among other services

Table 8 – Price-control obligations among retail services

	Retail mobile voice		Retail fixed voice		Fixed data		Mobile data	
	CA: Yes, No, Pl (1)	Costing tool: N, BU, TD, B (2)	CA: Yes, No, Pl (1)	Costing tool: N, BU, TD, B (2)	CA: Yes, No, Pl (1)	Costing tool: N, BU, TD, B (2)	CA: Yes, No, Pl (1)	Costing tool: N, BU, TD, B (2)
Benin	Yes	BU	Yes	BU	Yes	BU	Yes	BU
Burkina Faso	Not specified	BU	Yes	BU	Yes	BU	Yes	BU
Cape Verde	Yes	BU	Yes	TD	Yes	BU	Yes	TD
Côte d'Ivoire	Yes	BU	Yes	BU	Yes	BU	Yes	BU
Gambia	Pl	Not specified	Pl	Not specified	Pl	Not specified	Pl	Not specified
Ghana	Yes	BU	Yes	BU	Yes	BU	Yes	BU
Guinea	Pl	Pl	Pl	Pl	Pl	Pl	Pl	Pl
Guinea Bissau	Yes	B	Yes	B	Yes	B	Yes	B
Niger	Yes	BU	Yes	BU	Yes	BU	Yes	BU
Nigeria	Yes	BU	Yes	BU	Yes	BU	Yes	BU
Senegal	Yes	BU	Yes	BU	Yes	BU	Yes	BU
Togo	Yes	BU	Yes	BU	Yes	BU	Yes	BU

(1) CA: cost accounting, Pl: planned

(2) N: No, BU: bottom-up, TD: top-down, B: benchmark

Table 9 – Price-control obligations among wholesale services

	Fixed interconnection		Bit stream access		Local loop unbundling		Leased lines		Access to international gateway		Access to Internet exchange point	
	CA: Yes, No, Pl [1]	CT[2]: N, BU, TD, B [3]	CA: Yes, No, Pl [1]	CT[2]: N, BU, TD, B [3]	CA: Yes, No, Pl [1]	CT[2]: N, BU, TD, B [3]	CA: Yes, No, Pl [1]	CT[2]: N, BU, TD, B [3]	CA: Yes, No, Pl [1]	CT[2]: N, BU, TD, B [3]	CA: Yes, No, Pl [1]	CT[2]: N, BU, TD, B [3]
Benin	Yes	BU	Yes	BU	Yes	BU	Yes	BU	Yes	BU	Yes	BU
Burkina Faso	Not specified	Not specified	Not specified	Not specified	Not specified	Not specified	Not specified	Not specified	Not specified	Not specified	Not specified	Not specified
Cape Verde	Yes	Not specified	Not specified	Not specified	Yes	TD	Yes	TD	Yes	N/A	Yes	N/A
Côte d'Ivoire	Not specified	Not specified	Not specified	Not specified	Not specified	Not specified	Not specified	Not specified	Not specified	Not specified	Not specified	Not specified
Gambia	Pl	Not specified	Pl	Not specified	Pl	Not specified	Pl	Not specified	Pl	Not specified	Pl	Not specified
Ghana	Yes	BU	Yes	BU	Yes	BU	Yes	BU	Yes	BU	Yes	BU
Guinea	Pl	Pl	Pl	Pl	Pl	Pl	Pl	Pl	Pl	Pl	Pl	Pl
Guinea-Bissau	Not specified	Not specified	Not specified	Not specified	Not specified	Not specified	Not specified	Not specified	Not specified	Not specified	Not specified	Not specified
Niger	Yes	Not specified	Yes	Not specified	No	Not specified	Not specified	Not specified	Not specified	Not specified	Not specified	Not specified
Senegal	Yes	BU	Yes	BU	Not specified	Not specified	Yes	BU	Not specified	Not specified	Not specified	Not specified
Togo	Yes	BU	Yes	BU	Yes	BU	Yes	BU	Yes	BU	Yes	BU

(1) CA: cost accounting, Pl: planned (2) CT: costing tool (3) N: no, BU: bottom-up, TD: top-down, B: benchmark

Foreseen changes in regulatory framework

Table 10 – Review of telecommunication law or regulatory framework

	Status:, No, Pl, Uw (1)	Target date	Main objectives
Benin	Uw	Not specified	To bring both the law and the framework up to date by implementing the ECOWAS and WAEMU recommendations
Burkina Faso	No	N/A	N/A
Cape Verde	No	N/A	N/A
Côte d'Ivoire	Uw	N/A	N/A
Gambia	Not specified	Not specified	Not specified
Ghana	Not specified	Not specified	Not specified
Guinea	Uw	March 2012	To adapt regulatory framework to ECOWAS recommendations
Guinea-Bissau	Not specified	Not specified	Not specified
Niger	Uw	Not specified	To harmonize legislative and regulatory framework with EU legislation; this would impact texts relating to interconnection
Nigeria	No	N/A	N/A
Senegal	Uw	N/A	To improve the regulation of MTR and the regulatory framework for telecommunications in Senegal
Togo	Uw	2012	To open up the market for the interest and benefit of users, and broaden access to electronic communication services and digital development in Togo.

(1) Pl: planned; Uw: under way

Regulatory strategies for new services and associated challenges

Table 11 – Anticipated regulatory strategies for new services and associated challenges

	Service	Considered: Yes/No	Legal/regulatory basis	Regulatory models/strategies being considered	Challenges
Benin	Roaming	Not specified	Not specified	Not specified	Not specified
	Broadband infrastructure	Not specified	Not specified	Not specified	Not specified
	NGN	Not specified	Not specified	Not specified	Not specified
	Mobile payment	Not specified	Not specified	Not specified	Not specified
Burkina Faso	Roaming	Yes	Not specified	Not specified	Cost orientation; promoting the development of services; preventing operators from imposing excessive tariffs
	Broadband infrastructure	Yes	Not specified	Not specified	
	NGN	Yes	Not specified	Not specified	
	Mobile payment	Yes	Not specified	Not specified	
Cape Verde	Roaming	Yes	Not specified	Not specified	Not specified
	Broadband infrastructure	Yes	Not specified	Not specified	Not specified
	NGN	Yes	Not specified	Not specified	Not specified
	Mobile payment	No	Not specified	Not specified	Not specified

	Service	Considered: Yes/No	Legal/regulatory basis	Regulatory models/strategies being considered	Challenges
Côte d'Ivoire	Roaming	Not specified	Not specified	Not specified	Not specified
	Broadband infrastructure	Not specified	Not specified	Not specified	Not specified
	NGN	Not specified	Not specified	Not specified	Not specified
	Mobile payment	Not specified	Not specified	Not specified	Not specified

	Service	Considered: Yes/No	Legal/regulatory basis	Regulatory models/strategies being considered	Challenges
Gambia	Roaming	Yes	Not specified	Roaming charges are a major concern; plans are under way to conduct a detailed study on this topic	Not specified
	Broadband infrastructure	Under consideration	Not specified	Not specified	Not specified
	NGN	Under serious consideration; almost all operators are deploying NGN networks	Not specified	Not specified	Not specified
	Mobile payment	Under consideration	Not specified	Not specified	Not specified
Ghana	Roaming	Not specified	Not specified	Not specified	Not specified
	Broadband infrastructure	Not specified	Not specified	Not specified	Not specified
	NGN	Not specified	Not specified	Not specified	Not specified
	Mobile payment	Not specified	Not specified	Not specified	Not specified
Guinea	Roaming	Not specified	Not specified	Not specified	Not specified
	Broadband infrastructure	Not specified	Not specified	Not specified	Not specified
	NGN	Not specified	Not specified	Not specified	Not specified
	Mobile payment	Not specified	Not specified	Not specified	Not specified

	Service	Considered: Yes/No	Legal/regulatory basis	Regulatory models/strategies being considered	Challenges
Guinea-Bissau	Roaming	Not specified	Not specified	Not specified	Establishing a landing point for fibre-optic cable; developing strategies for supply of 3G licences
	Broadband infrastructure	Not specified	Not specified	Not specified	
	NGN	Not specified	Not specified	Not specified	
	Mobile payment	Not specified	Not specified	Not specified	
Niger	Roaming	No	N/A	N/A	N/A
	Broadband infrastructure	No	N/A	N/A	N/A
	NGN	No	N/A	N/A	N/A
	Mobile payment	No	N/A	N/A	N/A

	Service	Considered: Yes/No	Legal/regulatory basis	Regulatory models/strategies being considered	Challenges
Nigeria	Roaming	No	N/A	N/A	N/A
	Broadband infrastructure	Yes	Not specified	Encouraging private participation and foreign investment in broadband	Low broadband/internet penetration, weak backbone infrastructure
	NGN	No	N/A	N/A	N/A
	Mobile payment	Yes	N/A	In collaboration with the central bank of Nigeria	N/A
Senegal	Roaming	Yes	Not specified	Strategy for consulting stakeholders	Not specified
	Broadband infrastructure	Not specified	Not specified	Infrastructure sharing	Not specified
	NGN	Not specified	Not specified	Updating the model developed in 2006	Not specified
	Mobile payment	No	N/A	No	N/A

	Service	Considered: Yes/No	Legal/regulatory basis	Regulatory models/strategies being considered	Challenges
Togo	Roaming	Yes	Not specified	Imposing national roaming to accelerate the deployment of 3G and as part of the implementation of universal service. For international roaming, WAEMU provisions are in development aimed at harmonizing tariffs and imposing ceilings	Not specified
	Broadband infrastructure	Yes	Not specified	Incentive sharing/pooling to ensure competition where access to these resources is concerned	Not specified
	NGN	Not specified	Not specified	Not specified	Not specified
	Mobile payment	Not specified	Not specified	Not specified	Not specified

Part 3 – Cost accounting and regulatory auditing

Part 3 – Cost accounting and regulatory auditing

Cost accounting

Data collection process

Table 12 – Cost accounting: data collection process

	Process				Implementation	
	Frequency	Deadline	Actual (present and past) period covered	Forecast period covered	Number of occurrences	Latest collection
Benin	Annually	Not specified	June-August 2011	Planned but not specified	1	June-August 2011
Burkina Faso	Monthly	Not specified	Not specified	Not specified	Not specified	November 2011
Cape Verde	Annually	Not specified	2009 and May 2011	Not specified	2	May 2011
Côte d'Ivoire	Not specified	Not specified	Not specified	Not specified	Not specified	Not specified
Gambia	Not specified	Not specified	Not specified	Not specified	Not specified	Not specified
Ghana	Monthly, quarterly or annually, depending on the nature of the data collection report	Not specified	Monthly, quarterly and annually depending on the nature of the report	Monthly, quarterly and annually depending on the nature of the report	Monthly	November 2011
Guinea	Not specified	Not specified	Not specified	Not specified	Not specified	Not specified
Guinea-Bissau	Not specified	Not specified	Not specified	Not specified	Not specified	Not specified
Niger	Annually	Not specified	Not specified	Not specified	Not specified	Not specified

	Process				Implementation	
	Frequency	Deadline	Actual (present and past) period covered	Forecast period covered	Number of occurrences	Latest collection
Nigeria	Annually	Not specified	Three years in the cost model	Forecast figures taken for two additional years (using percentage growth rate)	3 (in 2003, 2006, 2009)	December 2009
Senegal	Not specified	2009 for updating of the model	Not specified	Not specified	Not specified	Not specified
Togo	Annually and depending on the nature of the data collection report	Not specified	From April-March each year	At the beginning of each year	Not specified	January 2011

Scope of costs and cost preparation

Table 13 – Cost accounting: degree of regulatory prescription regarding cost preparation

	Costs & revenue nomenclature: Yes/No	Specifications imposed: Yes/No	Nature of specifications imposed, if any
Benin	Yes	Yes	Not specified
Burkina Faso	Not specified	No	Not specified
Cape Verde	Yes	Yes	Principles of cost causality Cost preparation methodologies e.g. reference to cost base and standards, valuation and allocation methodologies, identification and treatment of shared and common costs Basis on which assets are valued: asset lifetimes and depreciation methods Attribution methodologies used to attribute revenue, costs, assets, capital employed Basis used to set internal transfer charges Handling of costs that are not attributed to the services valued
Côte d'Ivoire	Yes	Yes	Principles of cost causality Cost preparation methodologies e.g. reference to cost base and standards, valuation and allocation methodologies, identification and treatment of shared and common costs Basis on which assets are valued: asset lifetimes and depreciation methods Attribution methodologies used to attribute revenue, costs, assets, capital employed Handling of costs that are not attributed to the services valued
Gambia	Not specified	Not specified	Not specified

	Costs & revenue nomenclature: Yes/No	Specifications imposed: Yes/No	Nature of specifications imposed, if any
Ghana	Yes	Yes	Principles of cost causality Cost preparation methodologies e.g. reference to cost base and standards, valuation and allocation methodologies, identification and treatment of shared and common costs Basis on which assets are valued: asset lives and depreciation methods Attribution methodologies used to attribute revenue, costs, assets, capital employed Handling of costs that are not attributed to the services valued
Guinea	Not specified	Not specified	Not specified
Niger	Not specified	Not specified	Not specified
Nigeria	Not specified	Not specified	Not specified
Senegal	Not specified	Not specified	Not specified
Togo	No	No	Total allocation of costs based on certain factors (e.g. manpower, payroll, intermediate consumption, depreciation)

Valuation and allocation methodologies

Table 14 – Main principles used to allocate cost categories between voice and data

	Network costs	Licence cost	Other costs
Benin	Yes	No	No
Burkina Faso	Yes	No	Yes
Cape Verde	Cost causality principle	Cost causality principle	Cost causality principle
Côte d'Ivoire	Allocation of the costs according to the routing matrix	Not specified	Costs of municipality management: use of a mark-up
Gambia	Not specified	Not specified	Not specified
Ghana	Yes	LRIC, historic and benchmarking	Not specified
Guinea	Not specified	Not specified	Not specified
Guinea-Bissau	Not specified	Not specified	Not specified
Niger	Not specified	Not specified	Not specified
Nigeria	Allocation of the costs according to the routing matrix	Annualized for licence period	Attributable cost
Senegal	Not specified	Not specified	Not specified
Togo	Routing factors	Distributed as common costs	Not specified

Table 15 – Accounting system/allocation methodology used and relevant increment size

	Allocation methodology: LRIC, FDC, other (1)	Size of the relevant increment: marginal, service increment, average increment, other
Benin	LRIC	Service increment e.g. increase in total costs following the introduction of a service
Burkina Faso	LRIC	Marginal
Cape Verde	LRIC (MNO); FDC (fixed)	Not specified
Côte d'Ivoire	LRIC	Service increment e.g. increase in total costs following the introduction of a service
Gambia	Not specified	Not specified
Ghana	LRIC/LRAIC	Not specified
Guinea	LRIC	Marginal
Niger	LRIC	Marginal
Nigeria	LRIC	Marginal
Senegal	LRIC/LRAIC	Marginal
Togo	LRIC	Marginal

(1) FDC: fully distributed costs, MNO: mobile network operators, other: as specified

Table 16 – Cost base and asset valuation methodology

	Cost base: HCA, CCA, other	Capital maintenance concept used: OCM, FCM	Valuation methodology used per type of asset (building/civil works, telecommunication equipment): absolute valuation, indexation, modern equivalent asset
Benin	CCA	FCM	Absolute valuation for all assets
Burkina Faso	CCA	FCM	Not specified
Cape Verde	HCA	OCM	Not specified
Côte d'Ivoire	CCA	Not specified	Current purchase price for the network equipment
Gambia	Not specified	Not specified	Not specified
Ghana	HCA	OCM	Not specified
Guinea	Not specified	Not specified	Not specified
Guinea-Bissau	Not specified	Not specified	Not specified
Niger	HCA	Not specified	Not specified
Nigeria	CCA	OCM	HCA with inflation factored into the model
Senegal	Not specified	Not specified	Not specified
Togo	CCA	FCM	Current costs, discounting the cost of assets with a book value of zero

Table 17– Depreciation method and asset lifetimes

	Depreciation method: SL, TSL, AN, TAN, other (1)	Lifetime (in years)					
		Civil works	Power equipment	Access equipment	Core network	Backhaul/backbone	Licence
Benin	SL	Standard time limit	Standard time limit	Standard time limit	Standard time limit	Standard time limit	Standard time limit
Burkina Faso	Not specified	25	10	Not specified	Not specified	Not specified	10
Cape Verde	SL	25	8	8	8	8	15
Côte d'Ivoire	AN	14	7	7	7	7	10/20
Gambia	Not specified	Not specified	Not specified	Not specified	Not specified	Not specified	Not specified
Ghana	Economic depreciation	10	7	10	10	8	15
Guinea	Not specified	Not specified	Not specified	Not specified	Not specified	Not specified	Not specified
Guinea-Bissau	Not specified	Not specified	Not specified	Not specified	Not specified	Not specified	Not specified
Niger	Not specified	Not specified	Not specified	Not specified	Not specified	Not specified	Not specified
Nigeria	TAN	10	2	15	15	10	Cost divided by the life span of the licence
Senegal	Not specified	Not specified	Not specified	Not specified	Not specified	Not specified	Not specified
Togo	SL	20	10	10	10	10	10

(1) SL: straight-line, TSL: tilted straight-line, AN: annuity, TAN: tilted annuity, other: as specified

Cost of capital

Table 18 – Cost of capital allowed and calculation methodology

	Rate of return (value in %)	Methodology: WACC, other	Cost of equity estimation: CAPM, other
Benin	Not specified	Not specified	Not specified
Burkina Faso	Not specified	WACC	Not specified
Cape Verde	12.2 % for the incumbent. Not applicable yet to other operators	WACC	CAPM
Côte d'Ivoire	Not specified	Not specified	Not specified
Gambia	Not specified	Not specified	Not specified
Ghana	Not specified	Not specified	Not specified
Guinea	Not specified	Not specified	Not specified
Guinea-Bissau	Not specified	Not specified	Not specified
Niger	Not specified	Not specified	Not specified
Nigeria	Average industry borrowing cost	WACC	Beta factor and CAPM, using the current debt and equity profile in the industry
Senegal	Not specified	WACC	Not specified
Togo	Not specified	WACC	CAPM

Regulatory auditing

Scope of regulatory audit and issues addressed

Table 19 – Scope of regulatory audit

	Reconciliation with statutory accounts	Scope of costs & costs allocated	Cost valuation and allocation	Cost capitalization, asset valuation and amortization	Transfer charges	Other
Benin	Not specified	Scope of costs included in and extent of costs allocated to the services concerned	Methodologies used for cost allocation and valuation	Methodologies used for cost capitalization, asset valuation and depreciation	Everything concerning cost accounting	No
Burkina Faso	Yes (detail not provided)	No (detail not provided)	Yes (detail not provided)	Yes (detail not provided)	Not specified	Not specified
Cape Verde	Yes (detail not provided)	Yes (detail not provided)	Yes (detail not provided)	Yes (detail not provided)	Yes (detail not provided)	Not specified
Côte d'Ivoire	Not specified	Not specified	Not specified	Not specified	Not specified	Not specified
Gambia	Not specified	Not specified	Not specified	Not specified	Not specified	Not specified
Ghana	Not specified	Not specified	Not specified	Not specified	Not specified	Not specified
Guinea	Not specified	Not specified	Not specified	Not specified	Not specified	Not specified
Guinea-Bissau	Not specified	Not specified	Not specified	Not specified	Not specified	Not specified
Niger	Not specified	Not specified	Not specified	Not specified	Not specified	Not specified
Nigeria	No	No	No	No	No	No

	Reconciliation with statutory accounts	Scope of costs & costs allocated	Cost valuation and allocation	Cost capitalization, asset valuation and amortization	Transfer charges	Other
Senegal	Not specified	Not specified	Not specified	Not specified	Not specified	Not specified
Togo	Yes	Yes	Yes	Yes	Not specified	Not specified

Operators' obligations

Table 20 – Regulatory auditing: operators' obligations and legal/regulatory basis

	Provide auditor with access to all internal supporting data and required information	Respond in a predefined timeframe to any question	Other	Basis: Li, La (1)
Benin	Yes	Yes	No	Li
Burkina Faso	Yes	Yes	No	La (061-2008/AN of 27 November 2008)
Cape Verde	Yes	Yes	No	La (Legislative Decree 7/2005)
Côte d'Ivoire	Not specified	Not specified	Not specified	Not specified
Gambia	Not specified	Not specified	Not specified	Not specified
Ghana	Yes	Yes	Not specified	Li
Guinea	Not specified	Not specified	Not specified	Not specified
Guinea-Bissau	Not specified	Not specified	Not specified	Not specified
Niger	Yes	Yes	Not specified	La (Ordinance 99-045 and Decree 2000-399)
Nigeria	No	No	No	Not specified
Senegal	Not specified	Not specified	Not specified	La (Code of Telecommunication)
Togo	Yes	Yes	Not specified	La and Li

(1) Li: licence, La: law

Overall regulatory auditing process

Table 21 – Status on how regulatory auditing is implemented

	Implementation rules			Application		
	Occurrence	Body in charge of conducting audit	Who pays?	Cost	Date of most recent audit	Outcome
Benin	On demand	Independent body	Operator	Not specified	2009	Not specified
Burkina Faso	Periodic	Independent body	NRA	Not specified	Not specified	Not specified
Cape Verde	Periodic	Independent auditors	NRA	39780 USD	May 2011	Some recommendations
Côte d'Ivoire	Not specified	Not specified	Not specified	Not specified	Not specified	Not specified
Gambia	Not specified	Not specified	Not specified	Not specified	Not specified	Not specified
Ghana	Periodic and on demand	NRA	Operator	Not specified	Not specified	Not specified
Guinea	Not specified	Not specified	Not specified	Not specified	Not specified	Not specified
Guinea-Bissau	Not specified	Independent body	Operator	Not specified	Not specified	Not specified
Niger	Not specified	NRA	NRA	Not specified	Not specified	Not specified
Nigeria	Not specified	Not specified	Not specified	Not specified	Not specified	Not specified

	Implementation rules			Application		
	Occurrence	**Body in charge of conducting audit**	**Who pays?**	**Cost**	**Date of most recent audit**	**Outcome**
Senegal	Annually	Organization designated by the operator, following a tender	Operator	Not specified	Not specified	Not specified
Togo	Annually and on demand	Independent organization selected through consultation	Operator auditing and NRA	Not specified	No regulatory audit yet in place	Not specified

Part 4 – Costing tools and cost modelling development

Bottom-up

Strategy for implementation

Table 22 – Public availability of the model and of its input dataset

	Publicly available? Yes/No	If the model is not publicly available:		
		Why not?	Shared with operators or for internal use?	Intended to be made public? Yes (+date)/No
Benin	Yes	N/A	Shared with operators	N/A
Burkina Faso	Yes	N/A	Shared with operators	N/A
Cape Verde	Not specified	Not specified	Not specified	Not specified
Côte d'Ivoire	Yes	N/A	Shared with operators	N/A
Gambia	Not specified	Not specified	Not specified	Not specified
Ghana	No	Model is intended for internal use only	Only information about the model is shared with the operators through Powerpoint presentation	No
Guinea	Not specified	Not specified	Not specified	Not specified
Guinea-Bissau	Not specified	Not specified	Not specified	Not specified

	Publicly available? Yes/No	If the model is not publicly available:		
		Why not?	Shared with operators or for internal use?	Intended to be made public? Yes (+date)/No
Niger	Yes	N/A	Shared with any operators who are actively involved: they feed the model and results are presented for their comments. Exchanges take place between the consultant and the official responsible for the NRA's model	N/A
Nigeria	Yes	N/A	Shared with operators	N/A
Senegal	No	For reasons of confidentiality, and because no audit has yet taken place	Internal use only. The results and the philosophy of the model are presented to operators	No
Togo	No	For reasons of confidentiality, and because no audit has yet taken place	Internal use only	No

Table 23 – Strategy for implementation of model and data used

	Strategy for implementation of model: Sh, Co, EE, DI, other [1]	Did you use data from operators? Yes/No	If operators' data are used, how did you collect them: CA, SR, Cn, other? [2]
Benin	Co	Yes	SR
Burkina Faso	Sh (WBG and Telecom Paristech)	Yes	SR
Cape Verde	Co	Yes	SR
Côte d'Ivoire	Co	Yes	SR
Gambia	Not specified	Not specified	Not specified
Ghana	EE (BU LRIC)	Yes	SR, Cn
Guinea	Not specified	Not specified	Not specified
Guinea Bissau	Not specified	Not specified	Not specified
Niger	Co (Laurent Gille)	Yes	SR
Nigeria	Co (PricewaterhouseCoopers and Detecon)	Yes	SR
Senegal	Co	Yes	SR
Togo	Co	Yes	SR

(1) Sh: from the shelf (ITU, World Bank Group (WBG), etc.), Co: consultants to develop a bespoke model, EE: evolution of an existing model, DI: developed internally (from scratch), other: as specified

(2) CA: data from cost-accounting obligation, SR: specific request, Cn: consultation, other: as specified

Model assumptions and parameters

Table 24 – Assumptions of the model

	Modelled operator: EO, HE [1]	Time horizon applied to cost recovery		Level of demand used: CL, FL, other [2]	Market share assumed	
		Value (no of years)	Why (rationale)?		Value (%)	Why (rationale)?
Benin	HE	10	Not specified	CL	30	Not specified
Burkina Faso	EO	Not specified	Not specified	FL	Not specified	Not specified
Cape Verde	EO	15	Not specified	CL	Not specified	Not specified
Côte d'Ivoire	EO	10/20	Not specified	FL	Not specified	Not specified
Gambia	Not specified	Not specified	Not specified	Not specified	Not specified	Not specified
Ghana	HE	10	Not specified	Historic, CL	25	Not specified
Guinea	Not specified	Not specified	Not specified	Not specified	Not specified	Not specified
Guinea-Bissau	Not specified	Not specified	Not specified	Not specified	Not specified	Not specified
Niger	EO	Licence duration	Not specified	CL	Actual market share of operators	Not specified

	Modelled operator: EO, HE [1]	Time horizon applied to cost recovery		Level of demand used: CL, FL, other [2]	Market share assumed	
		Value (no of years)	Why (rationale)?		Value (%)	Why (rationale)?
Nigeria	HE	Licence duration and lifetime of network cost elements	Not specified	FL	Actual market share of operators	Not specified
Senegal	EO	10	Not specified	CL	Not specified	Not specified
Togo	EO	10	Not specified	CL	Not specified	Not specified

(1) EO: existing one, HE: hypothetical efficient operator, other: as specified

(2) CL: current level, FL: future level based on extrapolation, other: as specified

Table 25 – Parameters of the model

	Key cost drivers: Yes/No				Coverage assumed		
	No of subscribers	Volume of traffic	Coverage	Other	Basis: AE, CC, TC, PC, Other [1]	In % of population?	In % of territory?
Benin	Yes	Yes	Yes	Not specified	AE	Not specified	Not specified
Burkina Faso	No	Yes	Yes	OPEX, CAPEX[2]; network architecture	Not specified	Not specified	Not specified
Cape Verde	No	Yes	No	Not specified	Not specified	Not specified	Not specified
Côte d'Ivoire	No	Yes	Yes	Not specified	AE	Not specified	Not specified
Gambia	Not specified	Not specified	Not specified	Not specified	Not specified	Not specified	Not specified
Ghana	Yes	Yes	No	No	AE	Not specified	Not specified
Guinea	Not specified	Not specified	Not specified	Not specified	Not specified	Not specified	Not specified
Guinea Bissau	Not specified	Not specified	Not specified	Not specified	Not specified	Not specified	Not specified

	Key cost drivers: Yes/No				Coverage assumed		
	No of subscribers	Volume of traffic	Coverage	Other	Basis: AE, CC, TC, PC, Other (1)	In % of population?	In % of territory?
Niger	No	Yes	No	Network design, relevant cost	AE	Not specified	Not specified
Nigeria	Yes	Yes	No	Network demand, transmission, busy hour (in Erlang), WACC	AE	69.4	60
Senegal	No	Yes	No	No	Current coverage of modelled operator	55	85
Togo	No	Yes	No	No	CC	55	85

(1) AE: average of current coverage provided by existing networks, CC: current coverage provided by largest network, TC: theoretical coverage (as derived from efficiency considerations), PC: prescribed coverage (as specified in the licence), other: as specified

(2) OPEX: operating expenditure, CAPEX: capital expenditure

Methodology used to design network and to model OPEX

Table 26 – Strategy for implementation and data used

	Network design		OPEX		
	Methodology: SN, SE [1]	Rationale behind the choice of SN or SE [1]	Modelling approach: MU, other [2]	Type of mark-up if used: DA, DT, OD, SA, other [3]	Method of deriving figures used to calculate OPEX: B, OD, VD, other [4]
Benin	SN	Optimization	Not specified	Not specified	Not specified
Burkina Faso	SN	Not specified	MU	DT	OD
Cape Verde	SN	Not specified	MU, real cost	Not specified	OD
Côte d'Ivoire	SN	Effective consideration of the number of existing nodes in network	MU	OD	OD
Gambia	Not specified	Not specified	Not specified	Not specified	Not specified
Ghana	SN	Not specified	MU	Not specified	OD
Guinea	Not specified	Not specified	Not specified	Not specified	Not specified
Guinea-Bissau	SN	Not specified	Not specified	Not specified	Not specified

	Network design		OPEX		
	Methodology: SN, SE (1)	**Rationale behind the choice of SN or SE (1)**	**Modelling approach: MU, other (2)**	**Type of mark-up if used: DA, DT, OD, SA, other (3)**	**Method of deriving figures used to calculate OPEX: B, OD, VD, other (4)**
Niger	SN	Optimization	MU	Not specified	Not specified
Nigeria	SN	Level of coverage and signalling link	MU	SA	OD
Senegal	Not specified	Not specified	MU	DA	B
Togo	Not specified	Not specified	MU	DA	B

(1) SN: scorched node, SE: scorched earth

(2) MU: mark-up on network assets, other: as specified

(3) DA: different mark-up depending on the type of asset, DT: different mark-up depending on technology (i.e. 2G or 3G), OD: operators' data, SA: equal mark-up for all network assets

(4) B: benchmark, OD: operators' data, VD: vendors' data, other: as specified

Top-down

Strategy for the treatment of operators' data

Table 27 – Public availability of the model and of its input dataset

	Publicly available? Yes/No	If the model is not publicly available:		
		Why not?	Shared with operators or for internal use?	Planned to be made public? Yes (+date)/No
Benin	No	Not specified	Internal use	Yes
Burkina Faso	Yes	N/A	Shared with operators	N/A
Cape Verde	No	Contains some confidential data	Only internal use	Yes (legal requirement)
Senegal	Not specified	Not specified	Not specified	Not specified
Togo	No	Not specified	Not specified	Not specified

Table 28 – Operators' data collection and retreatment strategy

	Data collection: CA, SR, Cn, other (please specify)? (1)	Elimination of potential inefficiencies			
		Done: Yes, No	If yes, key data checked: NT, CE, OE, BO, other (please specify) (2)?	If yes, basis used to check: B, CC, other (please specify) (3)?	If MNOs data are not checked to eliminate inefficiencies, please explain why
Benin	CA, SR	Yes	B , CC	B , CC	
Burkina Faso	SR	Yes	Reconciliation of traffic between operators	NT	Not specified
Cape Verde	SR	Not specified	Not specified	Not specified	Not specified
Togo	Cn: Consultation	Not specified	Not specified	Not specified	Not specified

(1) CA: Data from cost accounting obligation, SR: Specific request, Cn: Consultation

(2) NT: network topology, CE: capital expenditures, OE: operational expenditures, BO : business overhead, if other please specify

(3) B: Benchmark with international operators, CC: Cross-check between MNOs, if other please specify

Cost/volume relationship and key cost drivers

Table 29 – Parameters of the model

	Key cost drivers: Yes/No				If LRIC is used in the TD model, how are cost/volume relationships (CVR) derived?
	No of subscribers	Volume of traffic	Coverage	Other	
Benin	Not specified	Not specified	Not specified	Not specified	Not specified
Burkina Faso	Yes	Yes	Yes	NT, CAPEX, OPEX unit cost equipment	Not specified
Cape Verde	Yes	Yes	No	No	Not specified
Côte d'Ivoire	Not specified	Not specified	Not specified	Not specified	Not specified
Gambia	Not specified	Not specified	Not specified	Not specified	Not specified
Ghana	Not specified	Not specified	Not specified	Not specified	Not specified
Guinea	Not specified	Not specified	Not specified	Not specified	Not specified
Guinea-Bissau	Not specified	Not specified	Not specified	Not specified	Not specified
Niger	Not specified	Not specified	Not specified	Not specified	Not specified
Nigeria	Not specified	Not specified	Not specified	Not specified	Not specified
Senegal	Not specified	Not specified	Not specified	Not specified	Not specified
Togo	Not specified	Not specified	Not specified	Not specified	Not specified

Determination of routing factors

Table 30 – Principles underlying the determination of routing factors

	What are the principles underlying your determination of the relative network usage by different services (routing factors)?
Benin	Not specified
Burkina Faso	Not specified
Cape Verde	Routing, apportionment factors
Côte d'Ivoire	Not specified
Gambia	Not specified
Ghana	Not specified
Guinea	Not specified
Guinea Bissau	Not specified
Niger	Not specified
Nigeria	Not specified
Senegal	Not specified
Togo	Not specified

Benchmarking

Benchmarking scope

Table 31 – Strategy for implementation and data used

	Purpose of benchmarking: PT, CT, other (1)	No of countries included in benchmarking exercise
Cape Verde	PT	15
Côte d'Ivoire	CT	18
Gambia	PT	Not specified
Ghana	CT	35
Niger	CT	ECOWAS and WAEMU Member States
Nigeria	Not specified	Not specified
Senegal	CT	More than 10
Togo	CT	15

(1) PT: primary costing tool, CT: complementary tool to check the results obtained using an alternative costing tool, other: as specified

NB: 8 of the countries under evaluation applied benchmarking tools.

Process for country selection for benchmarking

Table 32 – Basis/methodology used to select the countries for the benchmarking base

	'Similar' countries					Only countries using a cost model (Yes/No)	Other selection criteria/methodology
	Population size (Yes/No)	Population density (Yes/No)	Topography (Yes/No)	Similar market (Yes/No)	Other similarity criteria		
Benin	No plans to use benchmarking						
Burkina Faso	Not specified	Not specified	Not specified	Not specified	Not specified	Not specified	Not specified
Cape Verde	Yes	Yes	Yes	Yes	Not specified	No	Not specified
Côte d'Ivoire	No	No	No	No	Similar countries that have also developed a cost model	Not specified	Not specified
Gambia	Not specified	Not specified	Not specified	Not specified	Not specified	Not specified	Not specified
Ghana	Not specified	Not specified	Not specified	Not specified	Not specified	Not specified	Not specified
Guinea	Not specified	Not specified	Not specified	Not specified	Not specified	Not specified	Not specified
Guinea-Bissau	Not specified	Not specified	Not specified	Not specified	Not specified	Not specified	Not specified
Niger	No	No	No	Yes	Located in the same geographical area	Not specified	Not specified
Nigeria	Not	Not	Not	Not	Not specified	Not specified	Not specified

	'Similar' countries					Only countries using a cost model (Yes/No)	Other selection criteria/methodology
	Population size (Yes/No)	Population density (Yes/No)	Topography (Yes/No)	Similar market (Yes/No)	Other similarity criteria		
	specified	specified	specified	specified			
Senegal	Not specified	Not specified	Not specified	Not specified	Not specified	Not specified	Operators' recommendations
Togo	Yes	Yes	Yes	Yes	Any combination of the given factors	Not specified	Not specified

Methodology used to set prices

Table 33 – Methodology used to derive price levels

	On what basis is the price set?				Currency conversion
	Average of prices: All, Best 5, Best 3, other [1]	Best rank 'n' price: please specify 'n'	Other	Rationale behind chosen basis used to set the price	Method used to convert to national currency: L, A1, A3, other [2]
Benin	All	Not specified		Not specified	A1
Burkina Faso	Not specified	Not specified	Not specified	Not specified	L
Cape Verde	Best 5	No	No	Not specified	L
Gambia	Not specified	Not specified	Not specified	Not specified	Not specified
Ghana	Not specified	No	A single efficient network model approach. This is supported by economic principles of behaviour and trends in competitive markets.	Not specified	A1
Guinea	Not specified	Not specified	Not specified	Not specified	Not specified
Guinea-Bissau	Not specified	Not specified	Not specified	Not specified	Not specified
Côte d'Ivoire	No	No	According to the access cost; price fixed according to benchmark	Not specified	L

	On what basis is the price set?				Currency conversion
	Average of prices: All, Best 5, Best 3, other (1)	Best rank 'n' price: please specify 'n'	Other	Rationale behind chosen basis used to set the price	Method used to convert to national currency: L, A1, A3, other (2)
Niger	All	Not specified	Not specified	Not specified	L
Nigeria	Not specified	Not specified	Not specified	Not specified	Not specified
Senegal	Not specified	Not specified	Not specified	Not specified	Not specified
Togo	Not specified	Not specified	Price is fixed according to benchmark	Not specified	Not specified

(1) Nature of prices selected to calculate the average

(2) L: latest, A1: average over one year, A3: average over three years, other: as specified

Glossary

Glossary

AE	Average of current coverage provided by existing networks
CAPEX	Capital expenditure
CAPM	Capital asset pricing model
CCA	Current cost accounting
CC	Current coverage provided by largest network
CVR	Cost/volume relationships
ECOWAS	Economic Community of West African States
FCM	Financial capital maintenance
FDC	Fully Distributed Costs (also referred to as Fully Allocated Costs – FAC)
HCA	Historical cost accounting
ICT	Information communications technology
LRIC	Long run incremental costs
MNO	Mobile network operator
MTR	Mobile termination rate
N/A	Not applicable
NGN	Next generation network
NRA	National regulatory authority
OCM	Operational capital maintenance
OPEX	Operating expenditure
PC	Prescribed coverage
SMP	Significant market power
TC	Theoretical coverage
WACC	Weighted average cost of capital
WAEMU	West African Economic and Monetary Union

Annex 1: Training program (ESMT)

Annex 1: Training program (ESMT)

Modules	Beneficiaries
Data gathering	National Regulatory Authorities (NRAs), operators and service providers
Networks and next generation network (NGN) services (development and implementation)	NRAs, operators and service providers
Regulatory and Privatization Issues in Telecommunications	NRAs, operators and service providers
Competition Policy for Telecommunications	NRAs, operators and service providers

Annex 2: Contact list

Country	Organization	Contact person	Position	Telephone (at organization)	Fax (at organization)	Email (at organization)	Location
Benin	Autorité Transitoire de Régulation des Postes et Télécommunications (ATRPT)	Mr Boko Luc	Chef Division Affaires Economiques et Prospectives	+229 90042697	n/a	bokoluc@yahoo.fr	COTONOU
Burkina Faso	Autorité de Régulation des Communications électroniques (ARCE)	Ms Marguerite Ouedraogo Bonane	Directrice des Affaires Juridiques	+226 5037 5360	+226 5037 5364	ouedma@arce.bf; secretariat@arce.bf	OUAGADOUGOU
Cape Verde	Agência Nacional das Comunicações (ANAC)	Mr David Gomes	Chairman	+238 2604400	+238 2613069	david.gomes@anac.cv; info@anac.cv	PRAIA
Côte d'Ivoire	Agence des Télécommunications de Côte d'Ivoire (ATCI)	Ms Aline Moulare N'Dakon	Directrice de la Communication et de l'International	+225 20 344373	+225 20 344375	ndakon@atci.ci; courrier@atci.ci	ABIDJAN
Gambia	Public Utilities Regulatory Authority (PURA)	Mr Rodine S Renner	Spectrum Manager	+220 4399601	2 204 399 905	rsr@pura.gm; info@pura.gm; rodinerr@yahoo.com	Banjul
Ghana	National Communications Authority (NCA)	Mrs Golda Adjei (Née Sowah)	Senior Manager, Regulations & Licensing	+233 302 776621	+233 302 763449	golda.adjei@nca.org.gh; info@nca.org.gh	ACCRA
Guinea-Bissau	Institut des Communications de la Guinée-Bissau (ICGB)	Ing. Gibril Mané	President	+245 643 8790	+245 320 4876	g_mane@hotmail.com	BISSAU
Guinea	Autorité de Régulation des Postes et Télécommunications (ARPT)	Mr. Abdoulaye Kébé	Responsable, Division Coopération Internationale	+224 30 411666	+224 30 450306	abdoulaye.kebe@arptguinee.org	CONAKRY

Country	Organization	Contact person	Position	Telephone (at organization)	Fax (at organization)	Email (at organization)	Location
Liberia	Liberia Telecommunications Authority (LTA)	Mr Iamini A Waritay	Acting Chairman	+231 77 051 051	+231 21000020	supremegps@yahoo.com	MONROVIA
Mali	Comité de Régulation des Télécommunications (CRT)	Dr Choguel Kokalla Maïga	Directeur général	+223 20 231 490	+223 20231494	crt@crt.ml	BAMAKO
Niger	Autorité de Régulation Multisectorielle (ARM)	Dr Aminata Amadou Garba	Directrice générale	+227 20 739008	+227 20 738591	aminatagarba@arm-niger.org; arm@arm-niger.org	NIAMEY
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Senegal	Autorité de Régulation des Télécommunications et des Postes (ARTP)	Ms Sokhena Ndiaye Faye	Chef de la Division des Relations Internationales et Coopération	+221 33 8690369	+221 33 8690370	sokhna.faye@artp.sn; contact@artp.sn	DAKAR
Sierra Leone	National Telecommunications Commission (NATCOM)	Mr Senesie Kallon	Deputy Director General	+232 22 236858	+232 22 235791	brimbrim12@yahoo.com; exs@natcomsl.com	FREETOWN
Togo	Autorité de Réglementation des secteurs de postes et de télécommunications (ART&P)	Mr Palouki Massina	Directeur Général	+228 2 2236380	+228 2 2236394	pmassina@yahoo.fr; artp@artp.tg	LOMÉ

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