LIRNE.NET

Benchmark Indicators for African National Regulatory Authority Websites

Monica Kerretts-Makau
mkmakau [at] yahoo.co.uk
July 2008

DRAFT Working Paper

This research is funded by the International Development Research Centre (IDRC) of Canada.

IDRC CRDI

Learning Initiatives on Reforms for Network Economies (LIRNE.NET) is an international network for research, training, policy and regulatory advice on telecom and information infrastructure reform and development. The network consists of non-profit public interest oriented regional centres and individuals which develop expertise, dialogue and a body of critical research in support of network development via policy and regulatory reform.

LIRNE.NET centres are: **DIRSI** – the Regional Dialogue on the Information Society, Latin America and the Caribbean; the **LINK Centre**, University of Witwatersrand, South Africa; **LIRNE*asia***, Colombo, Sri Lanka; **Research ICT Africa!** (RIA); and the European centres – the **Center for Information and Communication Technologies** (CICT), Technical University of Denmark; **Center for Communication, Media and Information Technologies** (CMI) at Aalborg University, Denmark; **Economics of Infrastructures** (EI), Delft University of Technology, the Netherlands; **media@LSE** (Media and Communications Department), London School of Economics, UK.

Global coordination of LIRNE.NET is managed by **Comunica**.

About the Author

Monica Kerretts-Makau is a consultant and international researcher based in Africa. Her background includes a PhD in Public Policy on the intersection of International policy and its influence on African policy making (with an emphasis on ICT4D policies) from the University of New South Wales, Australia and an MSC in Information Technology & Business from Salford University-UK. Monica has worked with both telecom operators and regulatory authorities on various consultancies in Africa and is a member of ResearchICTAfrica, a research network in Africa, seeking to inform and improve public policy in the ICT field through rigorous research.

Acknowledgements

This research is made possible by the support of Comunica and is funded by the International Development Research Centre (IDRC) of Canada. Special thanks to Alvaro Mailhos who was responsible for putting the analyzed data sets together and ensuring that all figures were correctly formatted and calculated. Special mention is also extended to Albert Nsengiyumva for his contribution on the regional overview of North and West Africa; and to Dongola Kikuni who ensured that content from French websites had been analyzed correctly

Contact:

LIRNE.NET
Dr. Pablo de María 1036
Montevideo, Uruguay

Coordinator: Amy Mahan
email: mahan [at] lirne.net
phone: +598.2.4102979

LIRNE.NET <www.lirne.net>

Benchmark Indicators for African National Regulatory Authority Websites

Monica Kerretts-Makau

Table of Contents

Abbreviations and acronyms

AEC	African Economic Community
ARCEP	Autorité de régulation des télécommunications
AU	African Union
EAC	East African Community
ECOWAS	Economic Community of West African States
COMESA	Common Market for Eastern and Southern Africa
FRATEL	The French language network of telecom operators
G2G	government-to-government
G2B	government-to-business
G2C	government-to-citizen
GDP	gross domestic product
ICT	information and communication technology
ITU	International Telecommunications Union
NRA	national regulatory authority
NTRA	National Telecommunication Regulatory Authority (Egypt)
PDF	portable document format
SADC	Southern African Development Community
UN	United Nations
UNDP	United Nations Development Programme
WATRA	West African Telecommunications Regulatory Association

Benchmark Indicators for African National Regulatory Authority Websites

Monica Kerretts-Makau

Executive Summary

This survey of African national regulatory websites ranks the online component of information provision and facilitation of regulatory processes. This study follows a previous regional survey conducted in 2004-05 which examined the extent to which regulators were using websites to inform and communicate with the public – including consumers and citizens, the private sector, media actors and researchers and other governmental and non-governmental organizations. The benchmarking assessment documents the incidence of different aspects that are important for regulator's web presence across the categories of basic information and responsiveness, factual information about the national telecom sector, consumer and citizen information including universal service and complaints procedures, business related information and forms, and information about the regulator and regulatory processes.

A country's inclusion into the assessment was contingent on the country having an independent authority* and the authority having a functioning website. Out of a total 54 countries in Africa, 30 had regulatory institutions that could be classified as independent with websites and 24 did not have websites. The countries were assessed by region (Central Africa, Eastern Africa, Island countries, Northern Africa, Southern Africa and West Africa).

The benchmarking results show marked differences across countries and regions. Egypt received the highest score and performed well across all categories. Nigeria, Mauritius, Kenya and South Africa completed the top five category. Following closely are Uganda, Algeria, Senegal and Tanzania. These NRAs were considered to have had adequate content in support of users being informed and being able to participate in regulatory processes.

The Island countries of Mauritius and Madagascar performed better across most of the regional categories. This was followed by the Northern African and the Eastern African region. Overall, the total African regional average was low with a benchmark indicating that national regulatory authority websites hover between static and emerging levels of information provision.

The analysis provides a detailed overview of the performance of African regulatory websites within the benchmarking criteria. It should be noted that this analysis does not judge websites by their look and feel, rather the main aim of the analysis focuses on the content that is provided and the ease of using or accessing the requisite information. It is hoped that this study will provide African regulators with an insight of what their users will most likely be looking for when searching through their websites. The study also highlights best practices that can be replicated.

* The term independent is used loosely here to refer to an institution mandated as the regulator of the sector not also functioning in the dual role of a fixed mobile operator or mobile operator or ministry.

1. Introduction

The concept of governance in recent years has evolved with the introduction of information and communication technologies (ICT). Governments can now provide services without the need for the traditional face-to-face interaction. This undoubtedly represents a marked change; more so, for African countries whose governance measures are increasingly measured by their ability to reduce bureaucracy levels through the use of e-governance.[1] In this model, a government is expected to incorporate three types of interactions namely: government-to-government (G2G), government-to-business (G2B) and government-to-citizen (G2C).

It is not surprising therefore that e-government has become an important theme and benchmark for the assessment of development via the ability to facilitate government services through ICT initiatives such as web portals. As most African national regulatory authorities (NRAs) already have a website or are in the process of establishing one, it is clear that this is viewed as an important or necessary activity. A website provides a fundamental window to realise the true spirit of e-government. A properly built website provides citizens and other stakeholders with one of the best interfaces to the regulatory agency. It allows for self-service around the clock and reduces long queues and time as is evident in many African government agencies. In addition, international and local businesses can search for and even apply for certain facilities online without having to make a physical journey to the government agency. A website thus becomes a virtual representation of the entire organization in cyberspace (Wattegama 2007).

As Mahan (2005) correctly observes, the importance of a national telecom regulatory authority website can never be underestimated. A NRA is one of the key government agencies in any country. It is the apex body that is largely responsible for the healthy growth of the telecom sector and the diffusion of telecom services to the public at all levels. It serves a large group of stakeholders varying from citizens and consumers to incumbent operators and prospective investors. Regulators set standards for transparency and accountability and thus, a well-designed and informative website will also demonstrate the extent and facility with which the NRA uses the technologies and services it regulates. A well-maintained website increases confidence in the regulator's skills and capabilities and thus provides a window upon which to evaluate the level of e-governance within a country.

While there exists a plethora of e-government initiatives taking place within African governments, supported by international agencies, actual analysis of the type of services provided using e-based technologies has received little attention or speculation as to what constitutes effective components. Focusing on African telecom regulatory authorities, this survey follows from a similar study carried out during March-April 2004 (Mahan 2005) which focused on 22 African NRA websites. Unlike the previous study however, this study evaluates a total of 30 countries out of 54 countries in Africa. The increase in number no doubts marks an increase over the past four years in the use of websites as a tool in regulation.

Finally, it is recognised that a website presence indicator for NRAs cannot capture the access that citizens have to these websites, nor can it capture the overall effectiveness,

efficiency or transparency of the regulator. What this benchmarking process does attempt however, is to clarify the type of information and level of interactivity and in so doing assess a country's progress in its e-governance initiatives.

2. Overview of the African continent

2.1 Economic overview

In 2006, world population amounted to 6.6 billion inhabitants, with 923 million in Africa, the second most populated region after Asia (with 3.9 billion inhabitants). Although the African continent during the past five years has seen an increase in its overall gross domestic product (GDP), it remains the world's poorest and most under-developed continent, with a GDP of USD 996 billion compared to the global GDP of USD 48,800 billion, representing little over two percent of the world's GDP (UNDP, 2006). Within Africa, the distribution of wealth is rather uneven between countries.

Out of a total of 54 African economies, South Africa alone accounted for a GDP of 240 billion USD, 25% of Africa's total GDP. Africa's low economic performance can largely be attributed to the effects of tropical diseases, the slave trade, corrupt governments, failed central planning, the international trade regime and geopolitics as well as widespread human rights violations, the negative effects of colonialism, despotism, illiteracy, superstition, tribal savagery and military conflict (ranging from civil war to guerilla warfare to genocide). Widespread poverty, illiteracy, malnutrition and inadequate water supply and sanitation, as well as poor health, affect a large majority of the people who reside in the African continent, where 36.2% of the population is living on less than $1 per day. According to the United Nations' Human Development Report in 2003, the bottom 25 ranked nations (151st to 175th) were all African nations.

2.2 The communications sector

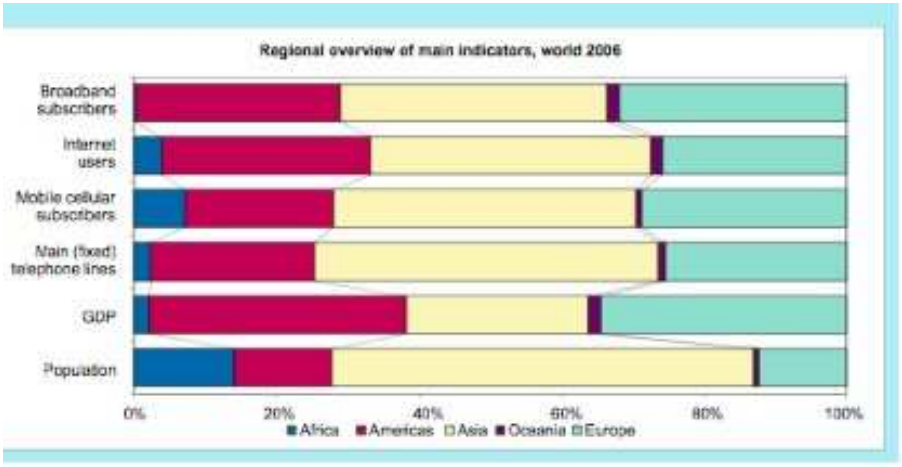
Unlike the other industry sectors in Africa, the telecom sector continues to present great opportunities for Africa. The liberalization of the sector, the extension of services by multinational conglomerates and the active competition currently in place in the sector have all contributed to the telecom revolution. This growth is largely due to the initiation of liberalization and privatization of the sector in many African countries. Many African governments have developed their telecommunication infrastructure by privatizing their former state-owned enterprises. However, the greatest growth in this sector has come about due to the licensing of new mobile operators in to the Africa market. As a result, Africa has been the fastest-growing mobile market in the world during the past five years. There are now more than 85 million mobile users in Africa (ITU 2007). Mobile telephony has had a positive and significant impact on economic growth and this impact may be twice as large in developing countries as in developed countries.

Nonetheless, with regards to access to ICT, Africa is lacking in investment intensive infrastructure, such as main telephone lines and fixed broadband. While there were 1,270 million main (fixed) telephone lines worldwide in 2006, fewer than 2% of these were located in Africa, whereas Asia had a share of 48% (ITU 2007). Clearly, Africa still has great potential to improve its telecom usage and infrastructure deployment.

Due to prohibitively high tariffs and limited computer literacy, the number of broadband subscribers in Africa is rather small. While the world saw 281 million broadband subscribers by the end of 2006, one million, less than 0.4%, had subscribed in Africa. Since broadband access is a major tool for e-government as well as e-commerce, this is a striking indicator for Africa's future development. Broadband access has spread rapidly in Asia, where 104 million persons have subscribed for high-speed Internet access, followed by Europe and the Americas with 89 and 80 million subscribers respectively. Mobile cellular technology has a higher coverage rate in the region. Cheaper infrastructure and larger regional penetration, cheaper handsets, competitive markets and business models oriented to the needs of the poorer segments of the population (such as affordable prepaid cards) have resulted in a mobile boom in Africa during the last decade. Nevertheless, the share of Africa with 7.2% of the worldwide 2.7 billion mobile subscribers shows still a lot of potential growth

Africa already experienced a significant yearly growth of mobile penetration. While Africa had 198 million mobile cellular subscribers in 2006, Asia had 1,137 million, Europe 768 million and the Americas 558 million subscribers respectively. The African mobile market is still far away from saturation while the trend in several countries in the world is towards a second mobile per person. In 2006, Africa had a penetration of mobile cellular subscribers per 100 inhabitants of 22, 62 for the Americas, 29.3 for Asia, 94.3 for Europe and 72.6 for Oceania. The Internet market is the most competitive one in Africa, with 68.6% of the economies allowing full competition and another 11.8% partial competition. Within Africa, the largest number of monopolies is found in Sub-Saharan Africa. Figure 1 below provides a summary of the ICT sector in Africa in comparison with other regions in the world.

Figure 1: Regional overview of main indicators



The changes in privatization and liberalization that occurred in Africa mainly between 1994 and 2003 also marked the creation of independent regulatory authorities in the sector. By mid-2007, ITU records indicated that 83% of African countries had established regulatory authorities. Although the number of African authorities is quite impressive, the staff of a well-functioning regulatory authority needs to be well-educated, trained and networked with colleagues from other countries (Melody et al. 2003). As the ICT environment is changing rapidly, keeping the policy and regulatory frameworks in line with the constant evolution of technologies, applications and

services is a challenge for governments and regulators around the world.

In view of the changes in the telecom sector as discussed above, this benchmarking provides a window to assess an aspect of how African regulatory agencies are performing in providing balanced and useful information to all their stakeholders.

3. Regional overview

The African continent comprises several regional blocks under the umbrella of the African Economic Community (AEC) that sits within the African Union.

The Southern and Eastern African region consists of: the Southern African Development Community (SADC) with 15 member states,[2] the Common Market for Eastern and Southern Africa (COMESA)[3] with 29 member states that also act as a preferential trading area, and the East African Community (EAC)[4] with five states. The stated goals of these three organizations include free trade areas, customs unions, a single market, a central bank and a common currency. In keeping with the trend of the telecom growth in Africa, the Eastern and Southern African countries have seen a large increase in growth in the telecom sector. Uganda leads in this sector with the largest number of operators (five), while Kenya, Tanzania and South Africa follow closely with three licensed operators each. The telecom industry in this region is mainly spearheaded by COMESA and EAC.

The West African region is composed of the Economic Community of West African States (ECOWAS)[5] and 15 West African countries (Benin, Burkina Faso, Cape Verde, Côte d'Ivoire, Gambia, Ghana, Guinea, Guinea Bissau, Liberia, Mali, Niger, Nigeria, Senegal, Sierra Leone, and Togo). Compared to the other region blocks, ECOWAS is very proactive in creating initiatives to foster cooperation and integration of telecom and information technology activities. The ECOWAS Treaty foresees the harmonization of legislation, including in the telecom sector, similar to the EU model. Its main objective is to form a unified economic zone in West Africa through economic integration and shared development in various industries, including telecommunications.

The Council of Ministers of ECOWAS has determined that the following items are priorities for the region:

- harmonization of regulatory frameworks and institutions;
- evolution of a regional regulatory framework – the ECOWAS ICT Task Force has been established to harmonize ICT policies of member countries;
- fostering competition;
- building a robust regional backbone infrastructure capable of supporting seamless cross-border connectivity;
- reducing costs associated with rights of way through the installation of optical fibre cable on power lines to carry electricity supply between countries that have electricity;
- granting operating licences on a priority basis to private investors that are interested in entering the markets in the region.

Regional Regulatory/Supervisory Body

In 2002, ECOWAS was responsible for the creation of the West African Telecommunications Regulatory Association (WATRA), the main objective of which is to coordinate dialogue regarding telecommunications and regulation in the West African region. WATRA is an association of regulators and the respective government ministries of West African Territories responsible for telecom matters. WATRA is intended as a vehicle to foster continued development of information communications technology within the sub-region, and decisions and directives issued by the Conference of Regulators are binding on all national regulators. In this respect, WATRA encourages the establishment of consistent standards throughout the region to facilitate the deployment of interoperable ICT systems and services.

FRATEL covering Central Africa and West Africa
FRATEL is the name given to the French speaking network of telecom regulators created in October 2003 in Bamako. FRATEL's aim is to establish and strengthen cooperation and exchange between its members. The network's task is to further the exchange of information, to contribute within its means to the training, coordination and technical cooperation between its members, and to contribute to the study of any matter related to telecom regulation. The network is coordinated by the chairperson of a committee composed of two other regulators. ARCEP (the French regulator) acts as the secretariat. This institution is still in its embryonic stage with very few tangible activities to assist national telecom regulators in the francophone countries particularly in Central and West African regions where regulators are struggling with shortage of capacity to address the market demand.

The Northern African region comprises the Arab Regulators Network of Telecommunications and Information Technologies and represents 15 Arab states both from Africa and Arabia. The main objectives of the network is to exchange experiences in telecom regulation, with a view to harmonizing the practices of regulation in the Arab countries and working out policies and models of regulations, equitable and transparent procedures so as to encourage development and modernization of telecom networks and services, as well as information technologies in the Arab world. It is evident that the North African region is shifting from an African based regulatory perspective to an Arabic based regulatory network through leadership from United Arabic Emirates and Saudi Arabia.

4. Methodology

4.1 Country selection

For the purpose of this survey, Africa was broadly defined as the group of countries or region as recognized by the United Nations (UN), whose boundaries were used to recognize a country as an independent territory or not. The countries comprising Africa is thus depicted in Figure 2.

Figure 2: Africa

Given the large number of countries, for evaluation purposes the clustering of countries was thought to be necessary. This was seen as a means of fairly evaluating each country on the benchmark criteria and at the same time providing comparisons within each cluster grouping. Although this survey sought to reveal best practices in each country, ranking per se was only a byproduct of the exercise. Table 1 illustrates the considered comparative evaluative criteria and reason for elimination.

Table 1: Clustering considerations

Method	Reason for elimination or selection	Selected or eliminated
Human Development Index	As clearly evidenced from the Human Development indices of UNDP, the income of a country is not directly co-related to its living standards and or whether the community will have available ICT technologies.	Eliminated
Based on e-government index of the UN	This was deemed reasonable; as it indicates how each NRA is using its web presence in providing its services compared to other government organizations. However, for evaluation purposes there is less reason to compare the NRA to other government agencies and in addition the data was outdated (2001), nonetheless it does provide an indication of e-government presence.	Eliminated
African ranking 2005 (Mahan)	A total of 22 NRA were surveyed. Given that the criteria used in this study is drawn from this previous study this survey was seen as a good comparative measure of progress.	Eliminated
Regional economic groupings	The choice of selecting regional groupings was drawn from the African Economic Community (AEC) -an organization of African Union states establishing grounds for mutual economic development among the majority of African states. These groupings provide substantive evaluative criteria as member countries are responsible for enforcing agreed frameworks within each grouping and providing a unified means of cohesion on policy ideas and implementation.	Eliminated

The choice made was to use the regional grouping based on geographical location. This was found to be the best means of grouping the NRAs as there was no pre-defined category such as income levels. The geographical clusters used for the evaluation are listed in Table 2 and rely heavily on the UN country classification.

- Southern Africa: Angola, Botswana, Lesotho, Malawi, Mozambique, Namibia, South Africa, Swaziland, Zambia and Zimbabwe.
- Eastern Africa: Burundi, Djibouti, Eritrea, Ethiopia, Kenya, Rwanda, Somalia, Sudan, Tanzania and Uganda.
- Island countries: Comoros, Madagascar, Mauritius , Seychelles and Reunion
- Central Africa: Cameroon, Central African Republic, Chad, Congo, Congo DRC, Equatorial Guinea and Gabon.
- Northern Africa: Algeria, Egypt, Libya, Mauritania, Morocco, Tunisia and Western Sahara.
- West Africa: Benin, Burkina Faso, Cape Verde, Gambia, Ghana, Guinea, Guinea Bissau, Ivory Coast, Liberia, Mali, Niger, Nigeria, Senegal, Togo, and Sierre Leone.

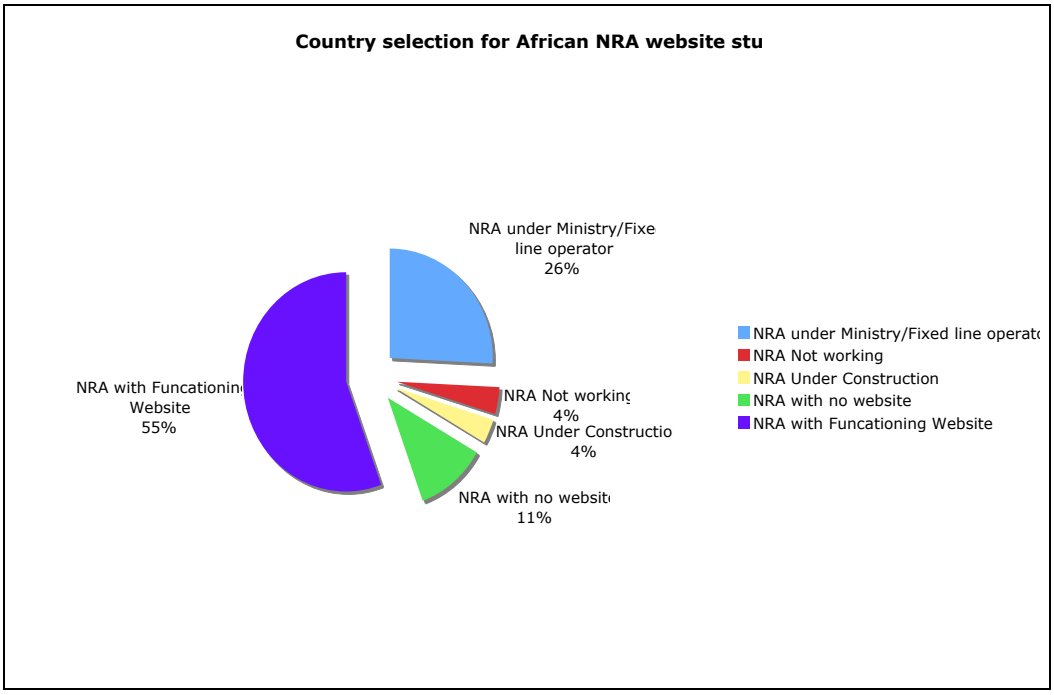
Each of the 54 countries within these clusters was then checked for the telecom regulator information at the International Telecommunication Union (ITU) website, or through the regional groupings such as ECOWAS, EAC, COMESA, SADC and AU. As noted by Hargittai (2000), assessing for presence through search engines can be deceptive and therefore every effort was made to contact the regional groupings or send email to contacts residing in those countries to ascertain the missing gaps.

An initial attempt was made to determine whether an NRA was independent but it became quickly apparent that it was difficult to draw the line between the independent and quasi-independent. The second and perhaps more important reason was that the

methodology of this survey is not intended to evaluate the performance of the NRA per se, but rather the performance of the NRA's website. It was therefore decided that a country's inclusion would be based on the country having an independent regulatory authority not linked to the operator or ministry and having a functioning website.

Each website was then checked to see if it was at a stage in which it was productive to evaluate for a comparative survey. In a few instances, websites were still under construction and thus were not included. Also, if a government agency (usually a ministry) is engaged in carrying out the duties of the national regulator, it was not considered for benchmarking purposes, and likewise if the regulatory function was combined with the fixed line telecom operator's website. Figure 3 indicates the percentage of countries included in this study.

Figure 3: Country selection



Of a total of 54 countries in Africa, 30 have regulatory institutions with websites that could be classified as independent, accounting for 55% while 24 did not have websites accounting for 45% of the countries in Africa.

In the Eastern Africa region only Somalia did not have a regulatory authority whereas Burundi and Djibouti had this function within the ministry and or combined with the operator. The Eritrean website could not be located.

Of the five Island countries, Comoros and Seychelles had the regulatory function under the ministry while the Reunion website could not be located.

Of the seven countries in Central Africa, only two – Cameroon and Gabon – had NRA websites. The others were within the ministry or with the telecom operator. Because of this small number, it was decided to merge the analysis of Cameroon and Gabon into the West African region.

Of the ten countries in the Southern African region, Swaziland was the only country that had the NRA under the ministry. The Lesotho and Zimbabwe NRA websites were not working.

In the West African region, ten countries had websites and 5 did not. By far this was the region with the highest number of countries either having no NRA or having the regulatory function within the ministry or fixed line operator.

In the Northern African region, only Libya and Western Sahara had this function under the ministry.

4.2 Ranking the NRA websites

Each website was assessed across different categories of information provision. To achieve a consistent ranking, each element was given a score of 1 to 4 based on the degree of richness. The stages were identified as follows:[6]

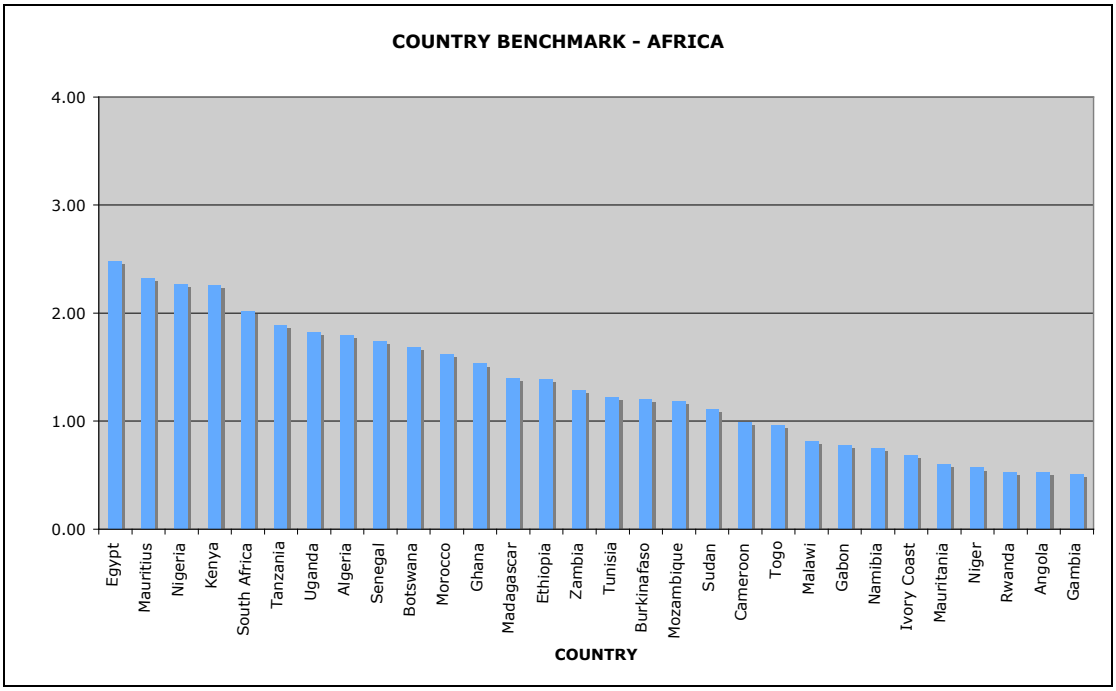
1. **Emerging**: Only basic and largely static information is available.
2. **Enhanced**: Content and information is updated regularly, and information is available not only in its original format (such as acts and legislation) but is also explained and digested.
3. **Interactive**: Users can download forms, contact officials and make requests. Available information has further value-added, such as being hyper-linked to relevant legislation.
4. **Transactional**: Users can submit forms online – for example to request information, or to submit a request for licence form.

The ranking was based on qualitative evidence, but subjectivity was reduced by using the above-defined categories rather than relying on merely perceptions.

5. Findings

This study evidences significant differences among the NRA websites in terms of information provision, usability and functionality. The websites that were assessed as being the most functional, well-designed and with the best range of user-friendly information are at the left side of Figure 4.

Figure 4: Country benchmark



As shown in Figure 4, the NRA of Egypt scored the highest ranking (score of 2.48) and was assessed to be almost fully at the interactive level. In addition, this NRA had an overall average score of the highest benchmark across all subcategories with several of the subcategories benchmarked as interactive (score of 3) – having most of the items linked, forms in PDF or online, downloaded and hyperlinked to relevant legislation. Key best practises of the National Telecommunication Regulatory Authority (NTRA) of Egypt include:

- A clear awareness of who the client/users are and what they need. This is one of the only websites where one does not have to search within several banner headings to find the key service categories.
- The entire website is organised against very clear service provision categories such as Frequency Spectrum, Type Approvals, Licensing and Regulation with clear subcategories of functions and activities that a prospective client would need.
- Table 2 provides an example of the indication of the main subcategories provided within the websites and the sub-links within the individual categories.

Table 2: Best practise examples: Egyptian NRA

Best practise example of links under categories from the NRA of Egypt's NTRA.

Frequency Spectrum	**Type Approvals**	**Licensing**	**Regulations**
Chart	Procedures	Service Procedures	Interconnection Framework
Guidelines for importers	Type Approval List	Telecom Service Forms	Competition Policy
Guidelines for users	Regulations	Wifi Form	Global Peering Exchange
Regulations	For Importer	Applications Form	Inmarsat Service Providers
For Importers	For Manufacturer		VSAT Regulations
Forms	Forms		Licensed Telecom Chart
Client Docs	Type Approval Form		Class C License
Importers Doc	Conformity Form		Standard License
Technical Forms	Importers Requisition Form		Universal Service

As illustrated in Table 2, the Egyptian NRA not only made clear choices of ensuring that each subcategory provided adequate information but also in addition ensured that items such as regulations and forms for each category were linked therein. The majority of the NRA websites in Africa had items such as *Regulation* as a separate category with all regulations of the sector dumped into this category. The Egyptian NRA website thus serves as a best practise website for other NRAs to emulate.

Nigeria, Mauritius Kenya and South Africa were also benchmarked as providing and enhanced level of information via their NRA websites. Following closely were Uganda, Algeria, Senegal and Tanzania. Together, these NRA websites were considered to have had adequate content that allowed the user to make informed decisions. The content in most of the categories was available via downloads. As for the Egyptian website, these had most of their functional categories clearly organised for the user. In contrast, they significantly differed from Egypt in the interactivity of the content such as less hyper-linked content to relevant legislation and lack of variety of forms available.

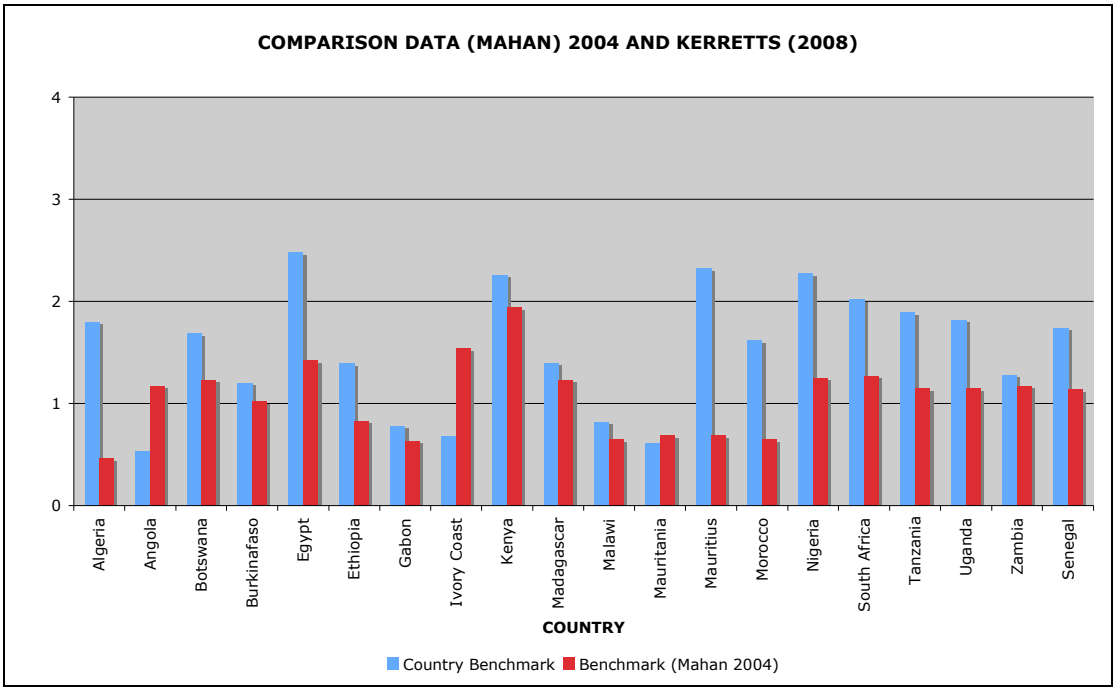
The nine websites scoring a benchmark of between 1.74 and 2.48 (out of 4, that is ranging more towards the rank of enhanced information provision) exhibited clear efforts in providing detailed content, relevant topic banners and submenu categories within each banner, simplified explanations of the function of each content provided, downloadable content in PDF, and so forth. In addition and with exception when compared to the other NRAs, these provided a good detail of information of the legal and regulatory framework used, the ongoing cases and hearings and recent legislation changes.

The NRA websites for the Ivory Coast, Rwanda, Togo, Gambia, Niger, Mauritania and Angola performed poorly. These websites simply did not provide relevant content other than basic introductory pieces and very little digested or descriptive information and in many instances having no information at all.

There were nine NRA websites benchmarked with a category of enhanced or close to enhanced accounting for 30% of the NRA websites evaluated in Africa, with the remaining 70% benchmarked as static.

When compared to the Mahan (2005) rankings based on data from 2004, there are few differences with the same NRAs having performed well. Figure 5 provides a comparison of the countries that were benchmarked in 2004 and 2008.

Figure 5: Comparison data (2004 and 2008)



The benchmark scores as shown above, show a marked improvement from 2004. In 2004 Mauritius was benchmarked as one of the NRA websites that did not provide relevant content other than basic information, in this assessment it has moved up the benchmark category being rated as one of the best NRA websites. Egypt's website also shows a big improvement having been ranked at 1.42 and moving up to 2.48 in 2008. The Zambian website which had a Universal Access category and information in 2004 had no information updated or provided as at the current review of NRA websites. Tanzania remained at the same benchmark level while the rest marked significant improvements providing more content and information than for the previous review of 2004.

When viewed as regions, as depicted in Figures 6 to 12, the island countries of Mauritius and Madagascar scored the highest average benchmark of 1.86. Mauritius raised the regional score with a benchmark of 2.32, and was rated as one of the highest in Africa. The Northern African region with 1.54 followed this closely. The performance within this region was different across the five NRA websites. Egypt had the highest benchmark score in the region (2.48) and as well this benchmark was the highest for Africa. Performing poorly within this region was Mauritania which had an average benchmark of 0.61 and was also one of the lowest NRA website benchmark scores in Africa.

The Eastern African region followed that of the Northern Africa with a regional benchmark of 1.50. The Eastern African region also performed much better comparatively across all the categories. The highest NRA website benchmark within

this region was Kenya with 2.26 while the lowest was Rwanda with 0.53. It should be noted that Rwanda has just recently (2008) officially joined the Eastern African economic block and its NRA will be aligning itself within the regional bodies of EAC. Both the Southern African region and Western & Central African regions comparatively did lower than the other regions scoring benchmarks of 1.18 and 1.12 respectively The Southern African region in spite of the strong SADC economic block, was mainly boosted by the South African NRA website which had the highest benchmark within the region at 2.02 and also one of the highest in Africa. Significantly disappointing within this region were the NRA websites of Malawi, Angola and Namibia which all had a benchmark below 1. The above results show that NRA websites across the African continent overall remain within the emerging category (1.33), implying that information via NRA websites is very basic and largely static.

Figure 6: Eastern African Region

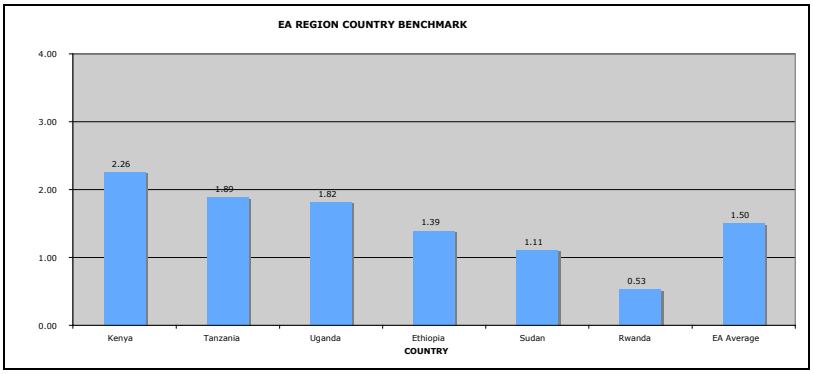


Figure 7: Island countries

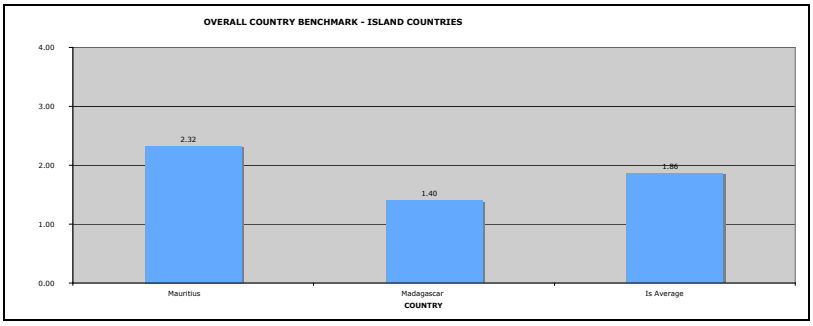


Figure 8: Southern African region

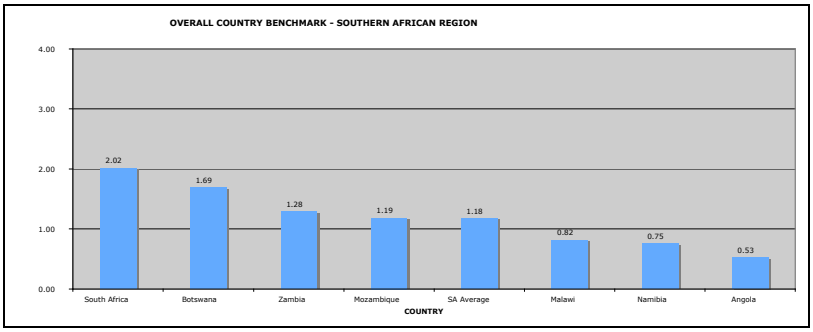


Figure 9: Overall country benchmarks – Southern African region

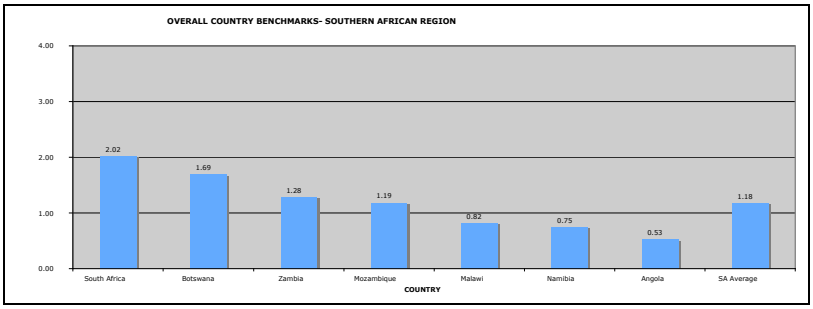


Figure 10: West & Central African region

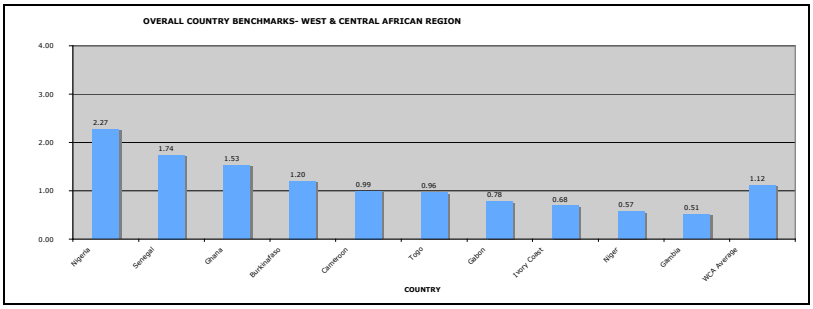


Figure 11: Northern African region

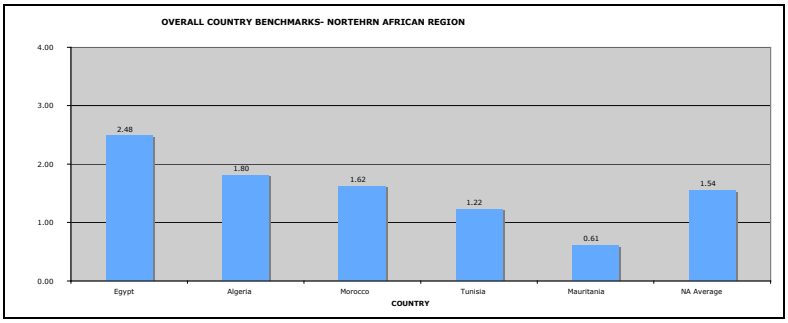
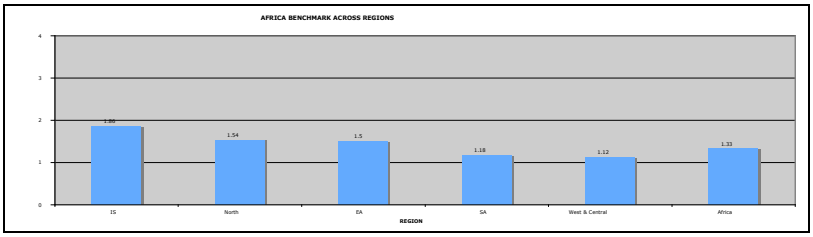


Figure 12: Regional benchmark - Africa

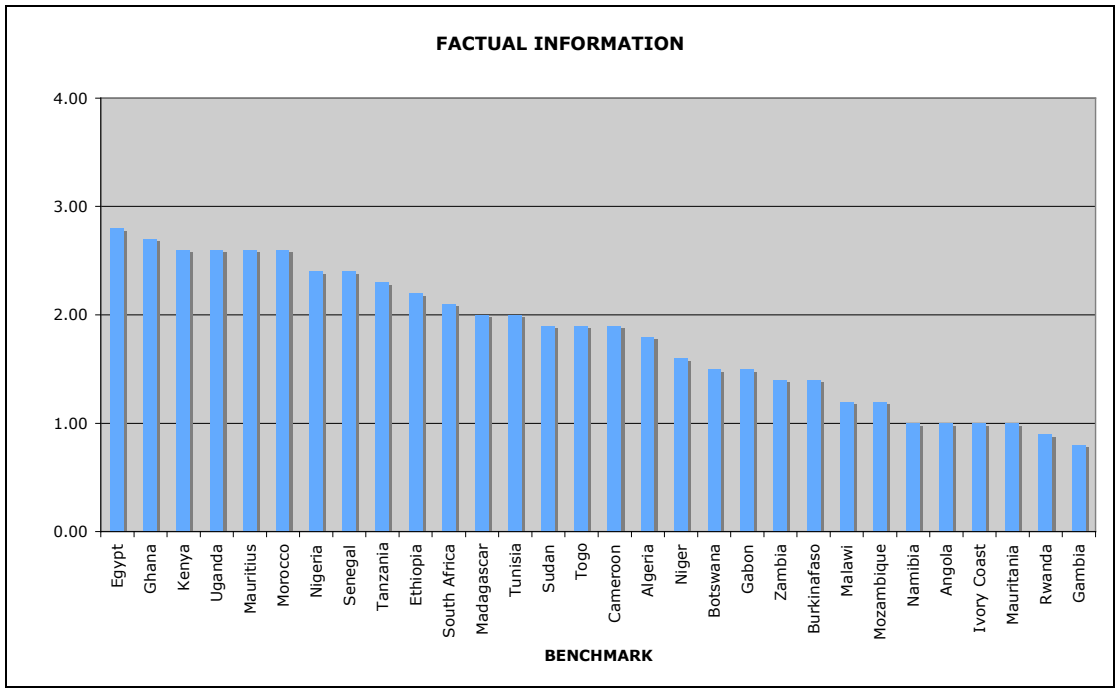


The overall benchmark values shown in the regional graphs are only a snapshot of the overall situation and do not depict the actual differences in the content and the ability of the websites to inform and communicate to the public, citizens and other government and non-governmental agencies. As evidenced below each NRA differed significantly in the type of content provided. The following sections highlight best practice benchmarks and delve in more detail into each section and subcategory that was benchmarked.

5.1 Factual information and news

A common denominator for compared NRA websites is the provision of the main legislative background information, statistical information such as sector indicators and sector news. Figure 13 provides the ranking assessment for this category across the 30 countries evaluated Africa.

Figure 13: Country benchmark



Overall the best websites in this category were Egypt, Ghana, Kenya, Uganda, Mauritius and Morocco each having a benchmark at the enhanced level and bordering on being interactive. This implies that content was regularly updated, informative, hyperlinked and could be easily downloaded (benchmarks scores ranging from 2.6 to 2.8).

However, the actual benchmark within each subsection differed substantially. For the *news* section, Rwanda, Mauritania, Burkina Faso and Nigeria had scanty information on sector news, whereas in the Southern African and Western African region, Namibia and Gambia had no news respectively. The News information provided by other countries related to activities being handled by the regulator. The type of news provided ranged from news on press reports made by the regulator such as press statements by the Director Generals and press releases of notices to the operators or change of policy and or legislation.

Of exception were the Egyptian, Tanzanian, South Africa, Mauritius and Gabon NRA websites where news on the sector was also linked to the press clipping and all news items were categorised with past years also available for review. The Mauritius news was archived by year dated as far back as 2003. Sudan and Mauritius and Morocco were the only NRAs to provide comprehensive news on what was happening internationally (with the Morocco NRA categorising this under the Events banner with links to International, National and Local banners).

Overall, the News category did not refer to happenings in regard to the operators and their activities. Nor did it convey information on investment discussions that have been taking place in the region (the Kenyan NRA was the only to offer a downloadable guide for investors). A quick read of any of the regions' newspapers online reveals a great number of events taking place in the sector yet in spite of this, most NRAs did not have up-to-date information.
The location of the news section on the website was similar across all countries with a few exceptions. Most countries had a news section on the centre column of the home page or the left hand side of the website or at the top level with a clear banner marked news (see Kenya, Uganda, South Africa). Many of the NRAs had also placed the most recent news on the centre column of the home page (Tanzania, Egypt) and had included latest consultative documents and press releases on the same section. Others marked items such as Press Releases or What's New? or Recent Publications (see Tanzania, Sudan, Ethiopia, Botswana).

Statistical indicators and sector indicators were poorly provided across all countries. Where provided, data was often incomplete and focussed mainly on tariffs – some as old as 2006 (Namibia), and/or the list of licensed ISPs and mobile operators (Botswana). Some NRA websites such as for Rwanda did not provide any information. Most were rated as 0 or 1. Of exception were the NRA websites for Uganda, Egypt, Ghana, Senegal and Morocco for which the statistics provided were detailed and offered users full information on the current level of telecom penetration with different indices. This marked improvement from the previous assessment (see Mahan 2005), for which Uganda website had no statistics on its website. The Ethiopian NRA provided a comparative analysis of the sector with statistical information with other countries in sub-Saharan Africa; this was the only NRA to do so.

Given that this information is readily available, it is surprising that most NRAs have neglected this important area on their websites. Significantly disappointing was the South African website where no statistical information was found yet overall its rankings are significantly higher than other African countries. This also applied to Ivory Coast, Gambia, Gabon, Botswana, Zambia, Sudan, Mauritius and Mauritania where no comparative statistical information was provided online.

A common denominator for the compared websites is the provision of main *legislative background information*. As this is a basic category of information that is readily available, it was not surprising to find that all the NRA websites reviewed had provided this information. In addition, most of the legislative documents could be downloaded for easy reading in PDF. Two NRAs stand out as best practise in this subcategory:

- South Africa's NRA website offered access to legislative documents currently in progress, pending and in force. This provides the user with sufficient knowledge to know what policies are expected.
- Egypt's NRA website has organised the legislative documents in the relevant service categories. Thus under the banner of Frequency, one would find the legislation relating to frequency allocation.

Few NRAs, however, provided relevant online information regarding the legislative framework for investment and for related fields such as guidelines to personal data

protection. While all countries did avail the regulatory and policy documents, very few took the initiative to also provide a summative analysis of the policies. It seems therefore that the assumption is that all readers understand legal documentation.

Figure 14: East African region

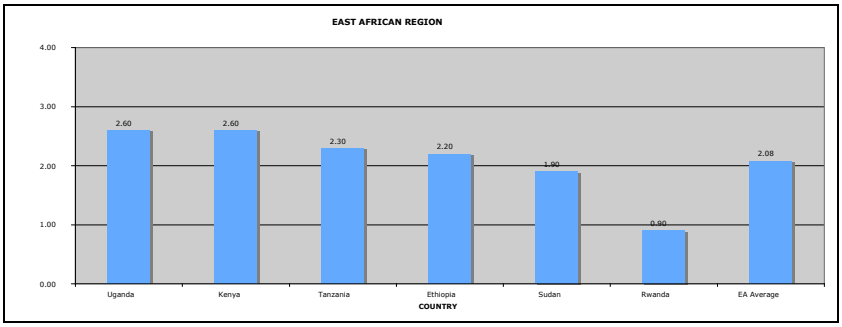


Figure 15: Island countries

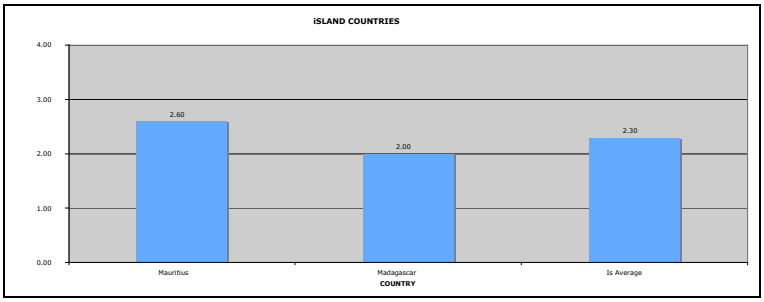


Figure 16: Southern African Region

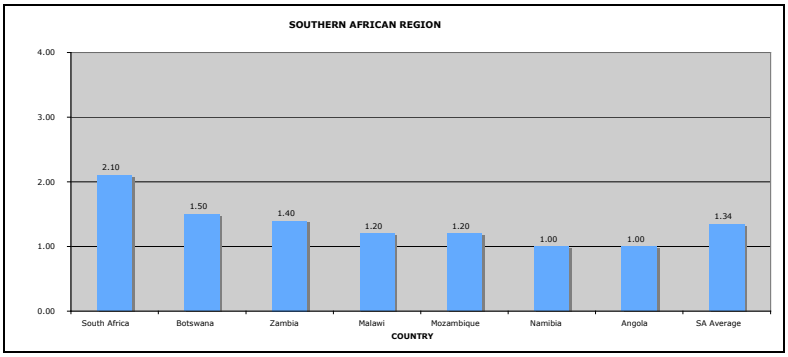


Figure 17: West & Central African region

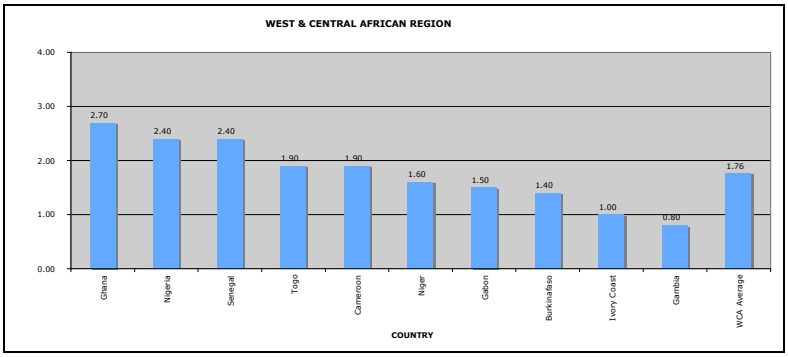


Figure 18: Northern African region

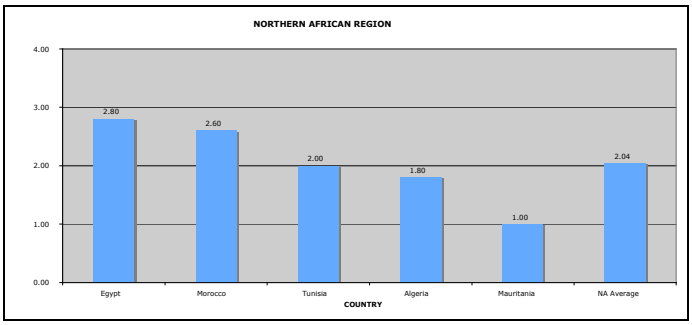
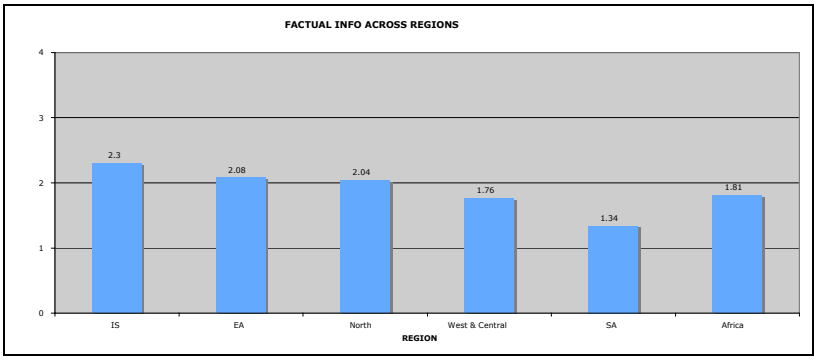


Figure 19: Regional benchmark

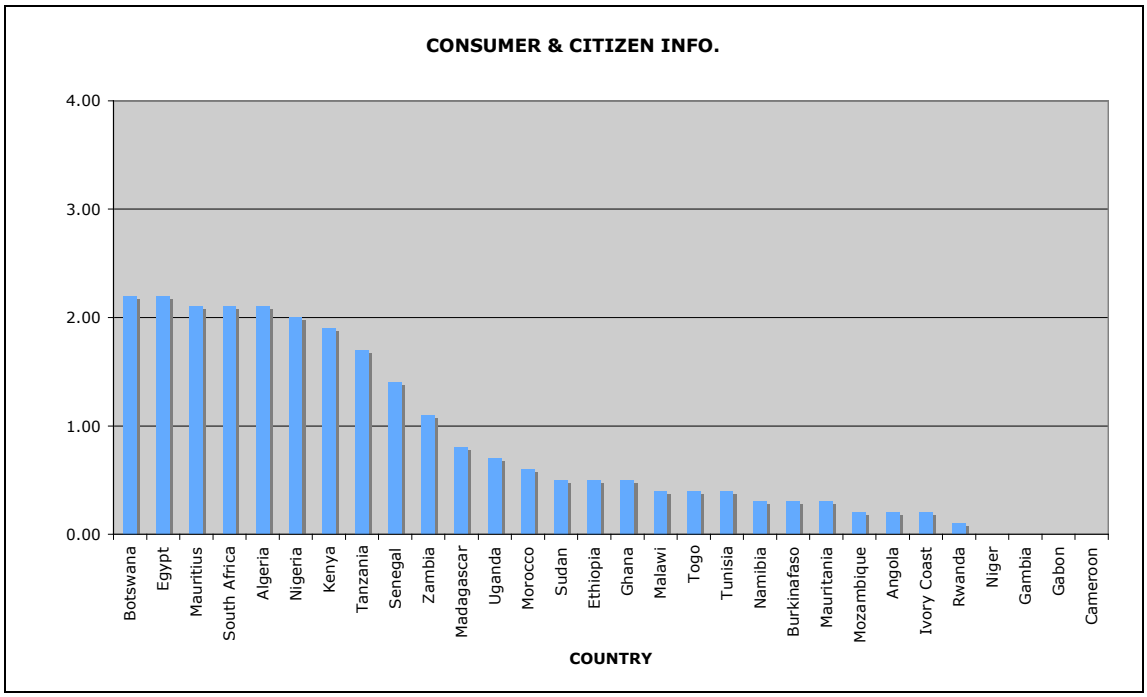


When viewed as regions, the total average of differences within the *factual information* category evens out as depicted in Figures 14 to 19. The island countries having only two countries had the highest average at 2.30, with the two individual countries' averaging scores above 2. The Eastern African region with six countries had an average benchmark of 2.08. Within this region, the Ugandan, Tanzanian and Kenyan websites achieved significantly higher scores when compared to websites in the other regions. This may be attributed to the close collaboration that these three countries have between their NRAs. The Northern African region (with five countries) had an average benchmark of 2.04. The African average of 1.81 in this category therefore shows a move from providing only emerging information (information that is basic and largely static) to providing content that is regularly updated and also downloadable.

5.2 Consumer and citizen information

The objective of this section is to assess the degree to which NRA websites cater to the needs of the end-consumers and provide information to citizens. Special emphasis was given to evaluate the type of consumer rights information available, the complaint process in place, information about public hearings and statistical information on consumer attention and complains resolution.

Figure 20: Country benchmark.



As shown in Figure 20, the websites that performed well were those of Botswana, Egypt, South Africa, Mauritius, Algeria, Kenya and Tanzania. These websites had content that could be termed as complete, up-to-date and contextualised – with benchmarks ranging between 2 and 2.20. Most of the information on consumer affairs was also downloadable. However when each category is viewed in detail significant differences occur in the type of content provided.

For the category of *consumer and citizen information*, Kenya scored the highest benchmark (3.5), falling between interactive and transactional. A best practise here was the provision of tariff information and numbering plans under the consumer affairs banner. Almost all other benchmarked countries had this information located in the statistics section or under the *news* headings and *press release statements*. Consumers would therefore have to look through the entire website to find the information likely to be the most relevant to them. In addition, Kenyan tariff information could be downloaded and was compared over a number of years. Egypt followed closely scoring a benchmark of 3 (interactive).

While Egypt's website had no dedicated consumer affairs section, the entire website was *consumer centric*. Thus consumer information such as numbering and tariffs, was clearly highlighted with a section on FAQs provided under each banner heading. South Africa, Tanzania and Ghana also scored highly with content being rated between enhanced and interactive (benchmarks of 2 and 2.5 respectively). NRA websites providing no information in this subcategory in Eastern and Southern Africa were Rwanda, Uganda, Namibia, Ethiopia, Cameroon and Gabon. For West and North Africa, the websites for Burkina Faso, Ivory Coast, Togo, Nigeria and Gambia had no information in this category.

Largely disregarded by all NRAs evaluated was the issue of *consumer and citizen rights*. Egypt scored the highest with a benchmark of 3 and Botswana and Tanzania followed in this category with a benchmark of 2.5 (falling between enhanced and interactive). Of significant concern was a lack of information on quality of service parameters used to evaluate operators, which is a basic role of the regulatory agency, except for Botswana and Egypt, this aspect was hardly covered by the other NRAs online. In addition, all the NRAs except for Egypt did not cover information on possible hazards of equipment.

The section for *complaints process* varied across the NRAs. Scoring a benchmark of between enhanced and transactional (3.5) were Botswana and Tanzania, whereas Egypt rated at 3 and Mauritius at 2.5. Botswana and Mauritius provided a downloadable complaints management procedure while Tanzania provided a complaints form both in Swahili and English. These four NRAs were considered best practise in this section. Fourteen NRAs provided no complaints forms accounting for more than 40% of the NRAs analysed. Nonetheless, on the complaints process most countries assumed this to be an aspect that should either be written directly to the Director General of the NRA by providing a post box or email address while others provided an online form for one to fill in with no particular address as to where this should be directed.

On the issue of *public hearings* the Kenyan website stood out having the public hearings banner categorised into current, past and ongoing, allowing the user to know what has taken place and is currently being reviewed. The South African NRA also had a public comments section allowing users to make an online comment on any of the public hearings. The South African NRA also had its public notices well laid out, providing details of the public hearings or amendments about to take place, links to the various laws concerned, the process in place and what it would affect. This was exceptional among all the sites reviewed. Both of these two websites benchmarked a score of 3.5. The Botswana website also stood out by having a rulings and judgements section though in all the three cases this section was not directly under the consumer affairs banner.

Statistical information on consumer attention and complaints resolution was not covered by the NRAs except for Mauritius which provided a downloadable PDF document that analysed the complaints received and resolutions resolved during the year. The Nigerian NRA also had a best practise benchmark documenting and archiving complaints received by year (2007-2005).

Overall, what becomes evident within this section is that consumers are required to obtain information relevant to their needs that is scattered across the different banner headings rather than located in one place. Further, information on number portability, setting of call centres and telephone number coding which is available in most of the websites reviewed by Wattegama (2007) for the Asian region is not provided by the African NRAs. No doubt, the issue of consumer and citizen information still has a long way to go as depicted through the African average for this category which benchmarked a score of 0.84 as shown in Figure 20. This may be attributed to the fact that Internet penetration as shown in Figure 1 is still very low and therefore perceived as an unlikely means of citizen participation and information retrieval.[7]

Overall the regional scores do not show a marked difference as evidenced in Figures 21 to 26. The performance across Africa was disappointing within this category and overall had the second lowest benchmark with the Universal Access category scoring the lowest. The island countries of Mauritius and Madagascar performed comparatively better than the rest of the regions with an average benchmark of 1.45. Nonetheless this was also the lowest performing category within this region, with Madagascar not providing detailed information in this category.

The Eastern and Southern African region benchmarked average scores of 0.90 and 0.93 respectively. Performing well within the Southern African region were the NRA websites of Botswana and South Africa. Both had content directed toward the consumer with information about hearings and complaint processes also available. Performing poorly within this region was Angola, which provided only scant information on consumer issues. The Northern African region performed slightly better than the other regions, and followed the Island region in overall ranking with a benchmark of 1.12. Egypt and Algeria performed well in the region each with a benchmark of above 2.

The West & Central African region performed poorly scoring an average score of 0.48. This was the lowest benchmark across the regions. Nearly all NRA websites in this region, with the exception of Nigeria and Senegal, scored a benchmark of 0. Given that this region has active membership through ECOWAS there is need to review the attention given to consumers within this region.

Figure 21: Regional benchmark

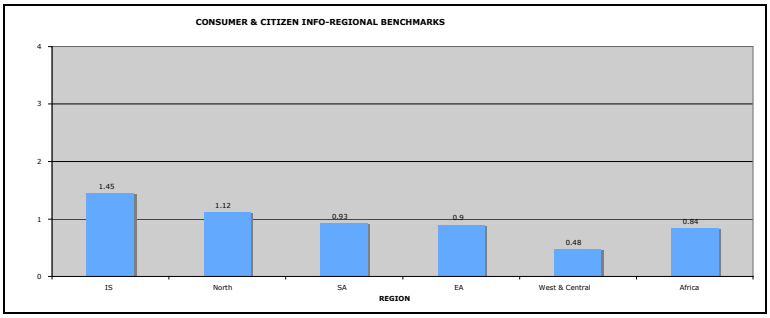


Figure 22: East Africa region

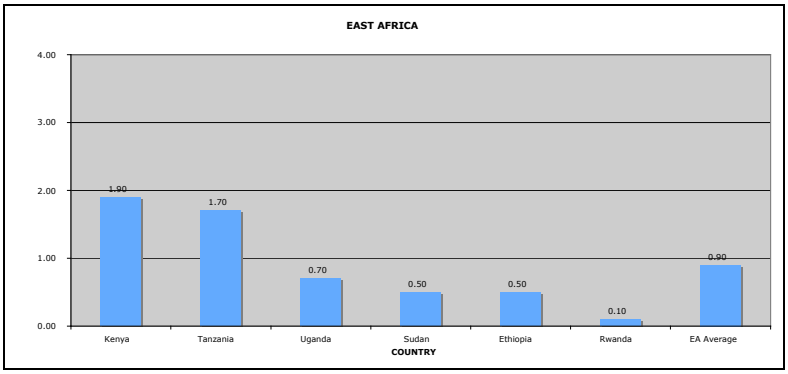


Figure 23: Island countries

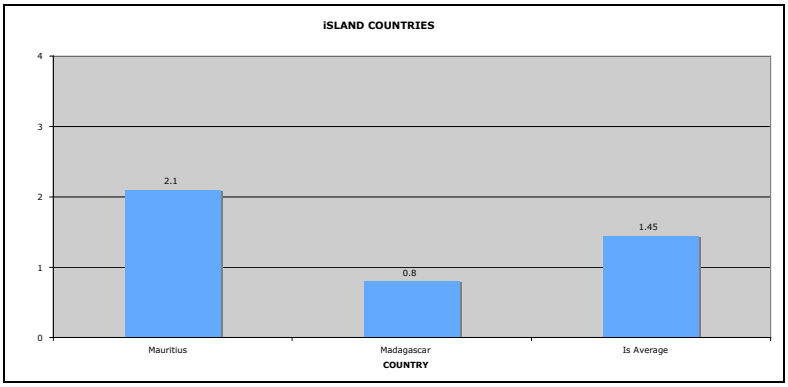


Figure 24: Southern African region

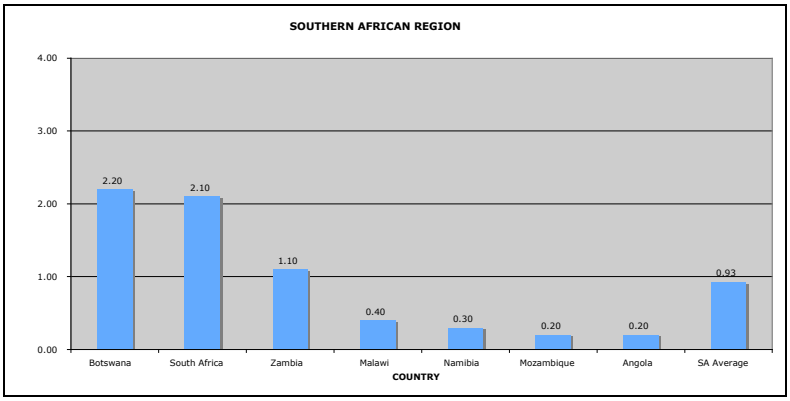


Figure 25: West & Central African Region

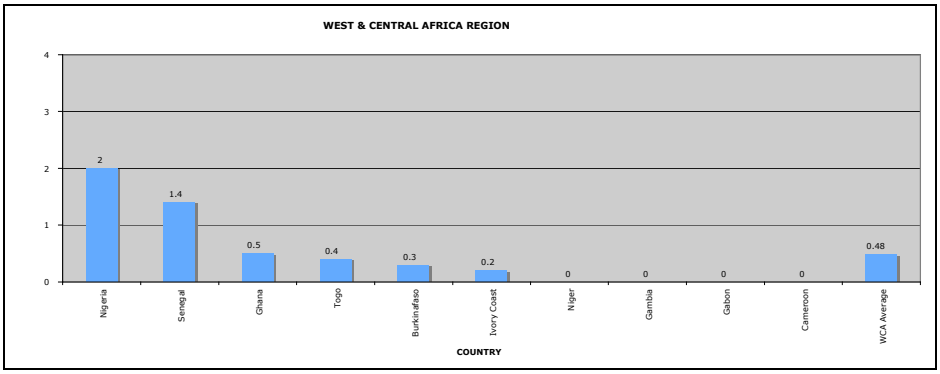
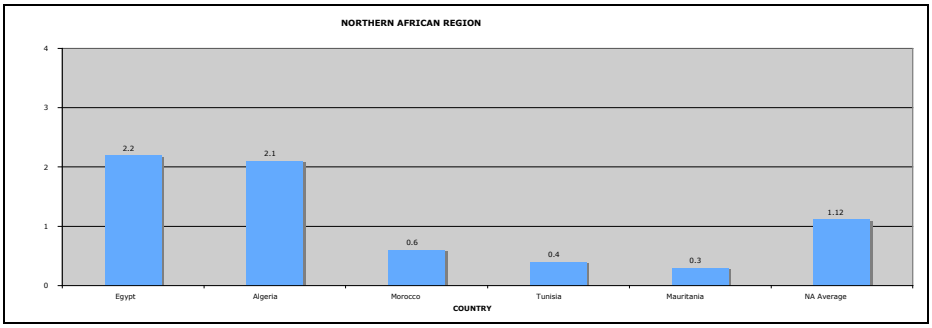


Figure 26: Northern African Region



5.3 Business information

This section deals with the information usually sought by business firms and investors such as market entry details, interconnection information, scarce resource allocation, process for equipment certification and any publications/consultancy work done in the area. Figure 27 below depicts the individual benchmark scores for this category.

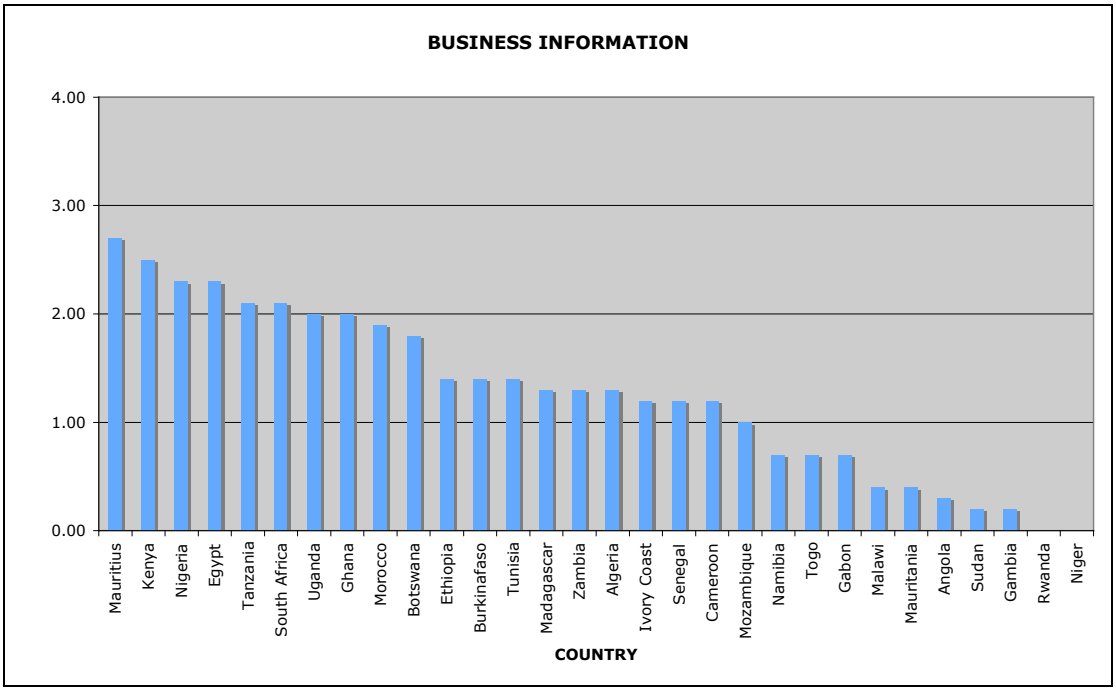


Figure 27: Country benchmark

Business information was a strong category across all websites. Even most websites which scored lowest in overall ranking offered licensing forms available for download. Mauritius, Kenya, Nigeria, Egypt, Tanzania, South Africa, Uganda and Ghana scored the highest benchmarks, as shown in Figure 27, having content that was rated between enhanced and interactive. The NRAs of Angola, Sudan, Gambia, Rwanda and Niger scored poorly, with almost no information provided within this category.

As for the other categories reviewed, actual content within this category differed. For *equipment certification*, the websites for Kenya, Tanzania, Ethiopia, Mauritius, Zambia and Botswana had the highest scores rating between interactive and transactional at 3.5. These websites cover detailed aspects of equipment certification and provide good best practises for other NRAs. For example, the Kenyan NRA had this content located on the *standards and type approval* banner. The content included list of equipment approved and rejected in Kenya, approval fees and forms. The Tanzanian NRA in addition had a checklist of equipment certification form. Those not scoring highly in this section include Malawi, Mozambique, Namibia, Angola, Rwanda, Cameroon, Gabon and South Africa from the Southern African and Eastern African regions; Tunisia, Egypt, Morocco and Mauritania from the North African region; and Ivory Coast, Senegal, Togo, Nigeria and Gambia from the West African region. All these NRAs did not have any information available on this topic.

Information on *scarce resources* such spectrum allocation was available and well explained on the websites for Egypt, Niger, Ghana, South Africa, Kenya, and Uganda which stood out with details on procedures for monitoring and policy information on spectrum.

On *Market Entry* information, Egypt scored a benchmark of 4, rating at enhanced. This was the only category to receive a rating of enhanced within Africa. Tanzania, Mauritius, Kenya, Namibia, South Africa and Botswana followed closely scoring a benchmark of between interactive and transactional (rating at 3.5). These NRAs had market entry details such as licensing procedures that were accompanied by forms. Most of the NRAs did not provide a reading on the telecom market and what one needs to do. Namibia had an interesting link to the Tourist board of Namibia while Mauritius provided information on the meaning of licenses and what they were for. For *interconnection*, nearly all the NRA websites provided no information except for Algeria, Tunisia, Egypt, Nigeria, Uganda and South Africa, the later having exceptionally detailed information on interconnection agreements made between different service providers.

Lacking on most of the websites were *consultative papers* with the exception of Mauritius and Algeria which both had a large number of consultancy publications and Tanzania which had one paper on 'Telephone Tariffs Trend Analysis' (2000-2006).

Figure 28: Regional benchmark

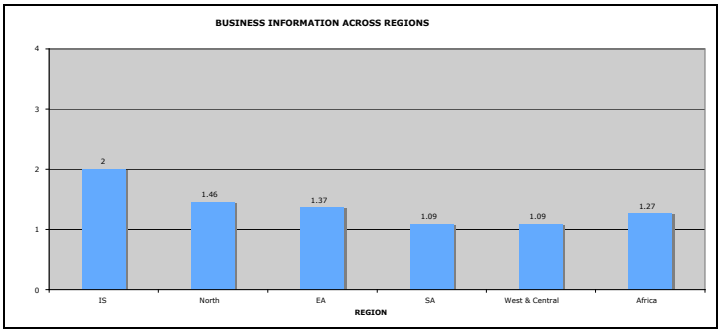


Figure 29: East African region

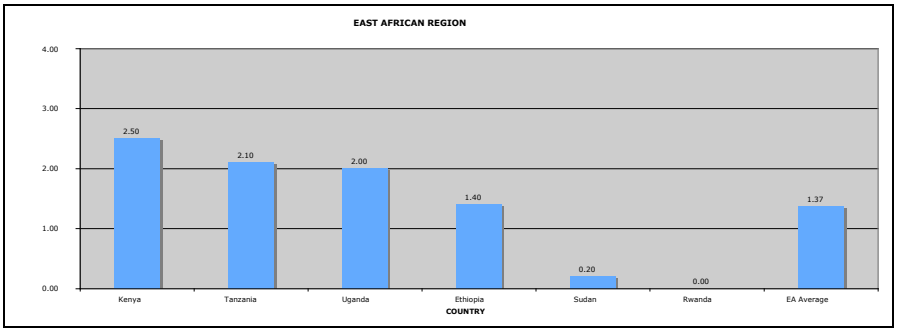


Figure 30: Island countries

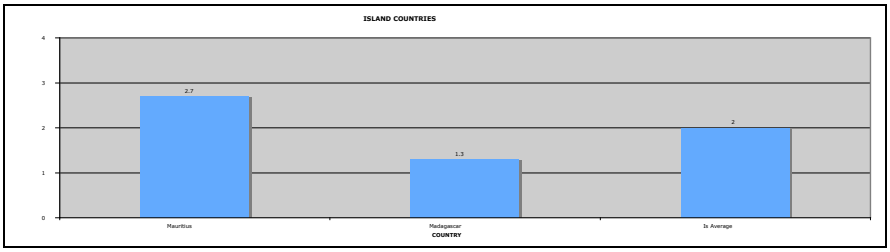


Figure 31: Southern African region

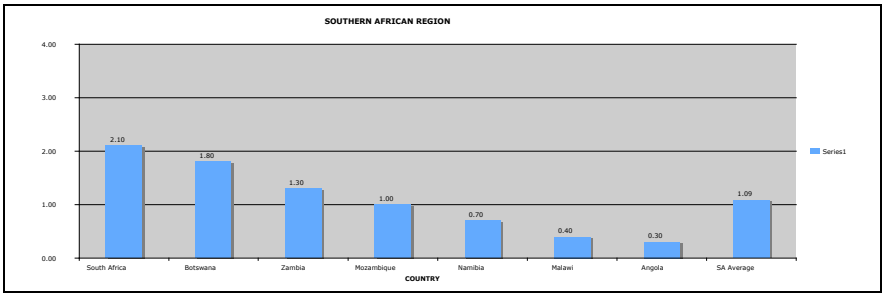


Figure 32: West & Central African region

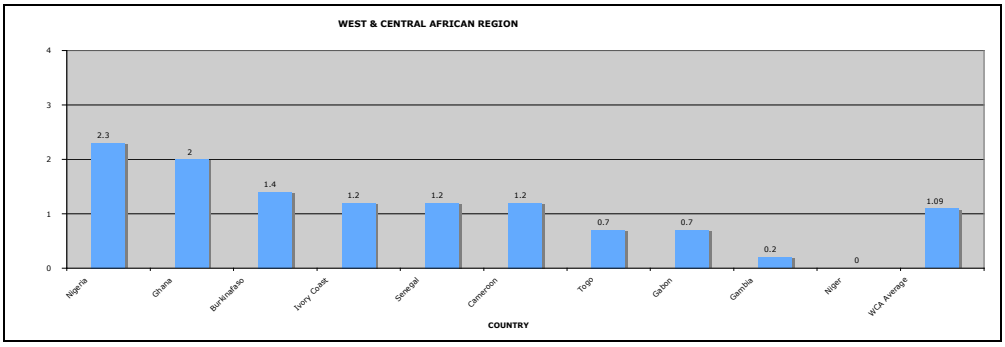
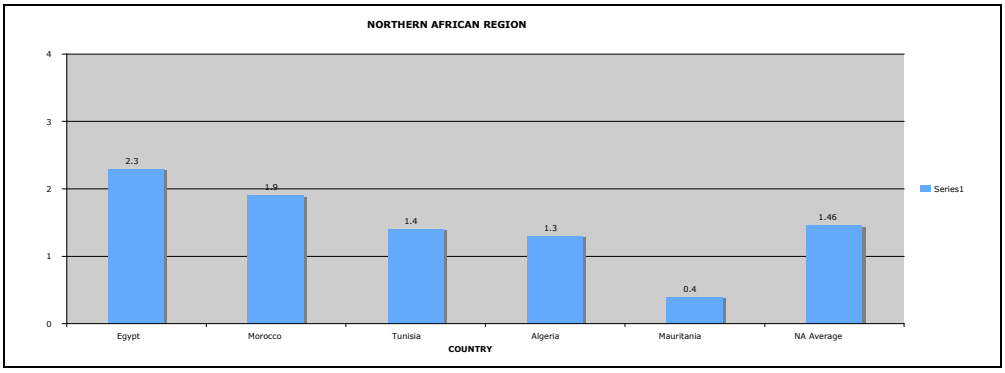


Figure 33: Northern African Region



The regional average benchmark in this category shows a slight improvement from the *consumer and citizen information* category as depicted in Figure 28. The African average of 1.27 is thus a marked improvement from the consumer and citizen African average of 0.84. As depicted via the regional benchmark (Figures 29 to 33), the island NRAs of Mauritius and Madagascar both had the highest average benchmark scores

within this category at 2 with the NRA of Mauritius scoring the highest benchmark in this category across Africa.

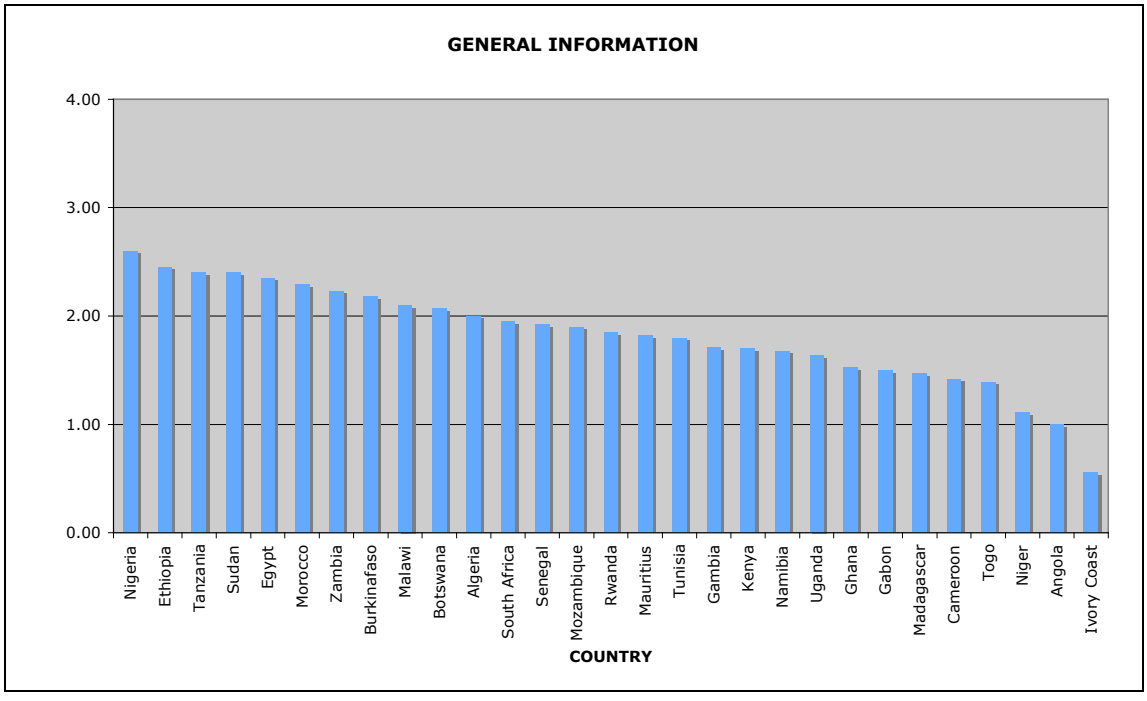
This was followed by the NRA websites for Algeria, Tunisia and Egypt pushing the average scores for the Northern African region to 1.46. The Eastern African region comparatively had more countries providing content with the exception of NRA of Rwanda, which had no online information in this category and therefore lowered the regional average. The Southern African region and the West & Central African regions both had low benchmarks of 1.09. Within the Southern African region, only the NRA websites of South Africa and Botswana had detailed information in this category compared to the other four countries in this region with Angola having the lowest benchmark in this region. The NRA websites in West & Central Africa also had a low input in this category with Nigeria and Ghana having the relatively better content than the other eight countries in this region.

The business category shows need for improvement given that the majority of information to be provided is readily available and simply needs to be placed on the website with some analysis for the user.

5.4 General information

This section, *general* information, looks for more general features such as mission statement, local language translation, links to other national and international sites, contact details of key officials, ease of navigation and organization chart.

Figure 34: Country benchmark



As illustrated in Figure 34 and in the regional comparisons in Figures 35 to 40, the benchmark scores within this category differ significantly when compared to the performance in the other categories. NRA websites that been ranked poorly across the other categories having generally fared better for the *general information* category. Most of the websites were generous in providing information about the regulator and

the regulatory agency such as organizational charts and mission statements, as well as links to local and international sites.

Almost all websites had content on the *mission statement* of the NRA. In addition, many included a historical account of the founding of the NRA and its main objectives within the telecom sector.

While there was effort made to provide information on the organization of the NRA, the depiction of an organogram within the NRA's was only done by slightly more than half of the thirty NRA's analysed. Malawi, Namibia, Cameroon, Gabon and Rwanda in East & Southern Africa had no *organogram* provided while in Western and Northern Africa, Tunisia, Mauritania, Ivory Coast, Togo, Niger and Gambia had no organogram provided.

The use of *links to other institutions* both locally and internationally was also adequately detailed by most websites. The Ethiopian, Sudan and Angola websites provided long lists of links to most of the international telecom institutions. This was in contrast to the minimalist content these NRAs provided in other benchmarked categories. In addition, the NRAs of Egypt, Morocco, Nigeria and Burkina Faso had categorised the links section to local, international and national.

The category of *contacts* differed across the NRAs benchmarked. While most provided contact details of the regulator, not many made effort to provide contact details of key officials within the regulatory institution. Tanzania, Rwanda and Sudan were the exception in Eastern Africa while in the Southern African and Western African region, the Zambian, South Africa and Nigeria NRAs stood out. These NRAs had detailed contacts and email addresses of each head of the department within the NRA.

While effort was made to check what the national language of the country was before checking on the aspect of local language, this was difficult to ascertain. Some countries had what they called national languages and then a list of local languages. For this reason, it was decided that national languages would be utilised as the criteria. Thus if a country had more than one national language cited in the UN country analysis then this would be the criteria used on the website in determining if one or more languages were utilised.

In Eastern Africa, only Tanzania included Swahili (a language also cited as the national language in Kenya) text in one of the categories – consumer complaints. It should be noted that 99% of Tanzanians speak Swahili a language that is also used as a business language in the country. All the other sections were in English. In Rwanda, both French and English were given as options on the website (languages spoken by 7% of the population) however, Kinyaruanda a language noted as the national language and spoken by 100% of the population was not provided, despite the fact that all government paper work is done in these three languages. The Sudanese NRA stood out having English, French and Arabic as language options with all three cited as national languages. In the Southern Africa, Angolan and Mozambican websites were only in Portuguese.

The overall ease and use of navigation across all the websites varied. Four websites stood out however out of the 30 NRAs evaluated, namely: Egypt, South Africa and Mauritius and Nigeria – providing ease of drop-down menus at the top of the page and links with well-categorised sections within each topic. Morocco, Algeria, Senegal, Uganda, Kenya and Tanzania also had well designed websites, with clear banner headings that facilitated locating information.

NRAs that could do with some improvement include Sudan, which was crowded with information on its centre and left hand columns making it confusing initially to get around. The Tanzania website also had a lot of information crowded onto the main pages rather than using the menu bars available in the left hand columns. The NRAs of Mauritania, Ivory Coast, Niger, Gabon, Rwanda and Cameroon while neat had minimal information with few banner headings that made it difficult to find relevant information.

Overall, as reviewed above, the regional averages of the general category were more or less even with the African average of 1.81. The highest benchmark came from the Eastern African region (2.07). This is not surprising given that each the six countries in this region provided detailed content and scored relatively high benchmarking between 1.7 and 2.45. The lowest benchmark came from West & Central Africa (1.59) for which Ivory Coast and Niger NRA scored relatively lower scores compared to the other eight countries in this region.

Figure 35: Regional benchmark

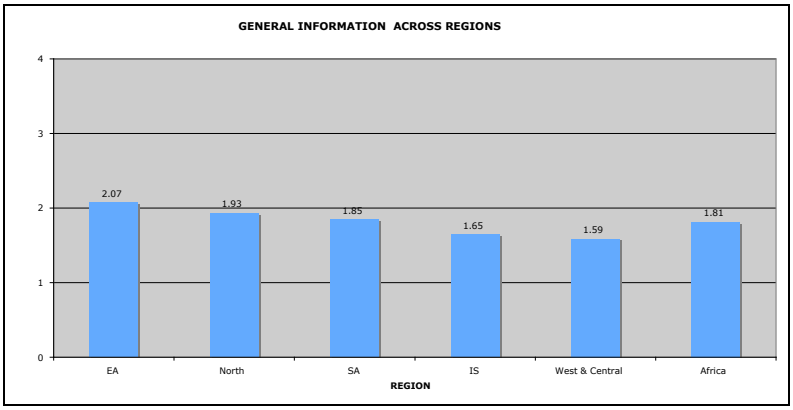


Figure 36: Eastern Africa

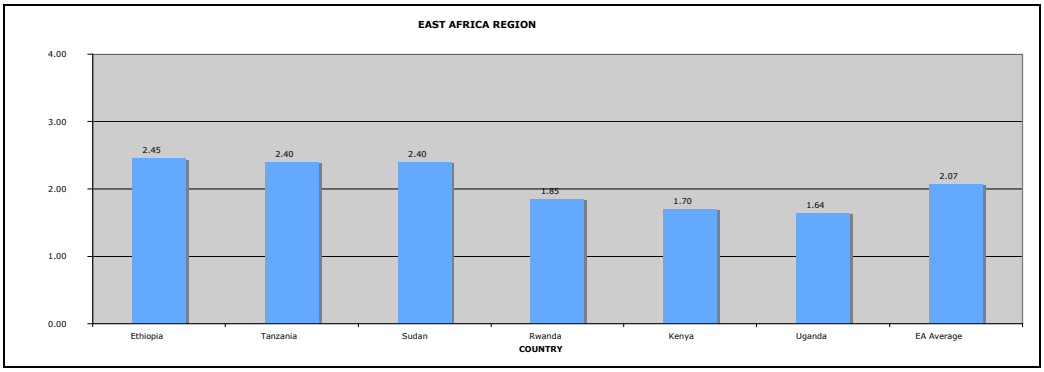


Figure 37: Island countries

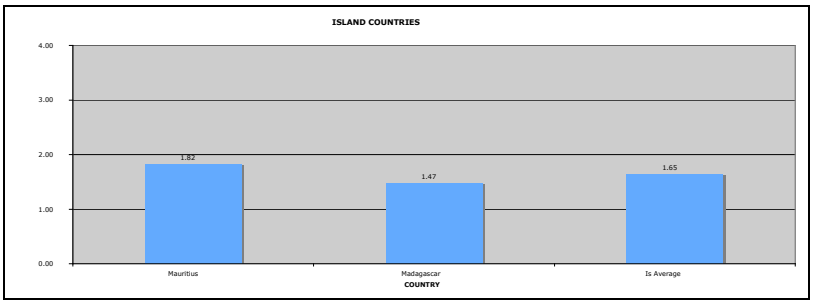


Figure 38: Southern African region

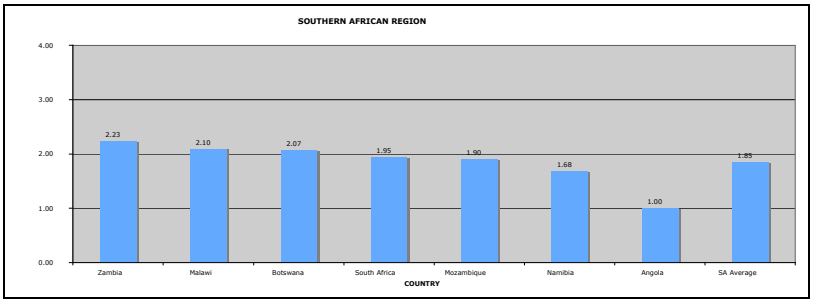


Figure 39: West & Central African region

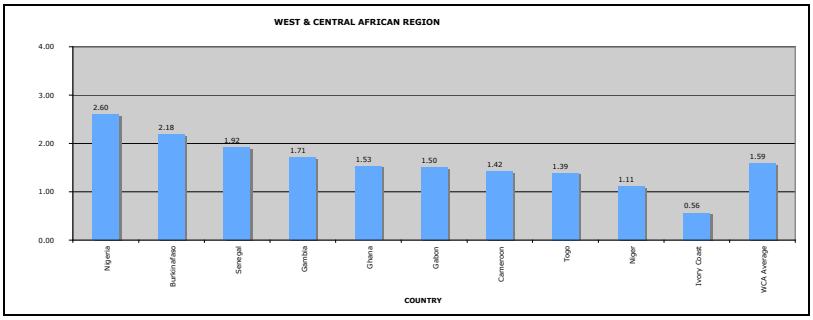
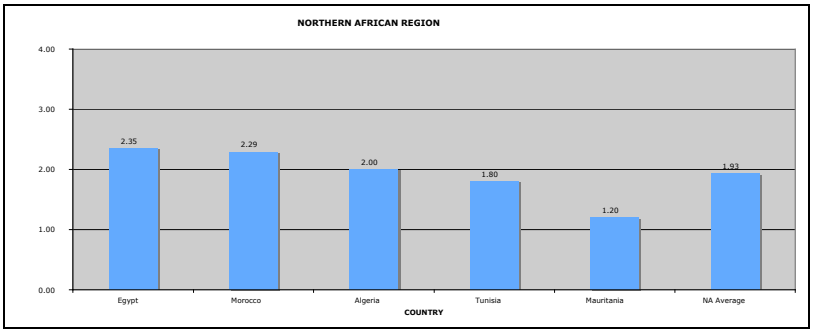


Figure 40: Northern African Region



Given that the *general information* category contains information that can be easily obtained, these section should have benchmarked higher scores than it did across all the NRAs.

5.5 Universal Access (UA)

This final section, *universal access*, addresses policy information, reports and plans on universal access. As shown in Figures 41 to 47, most NRAs benchmarked relatively low marks compared to the other categories thus lowering the regional average score in this category to stand at 0.80.

In Eastern and Southern Africa, Kenya, Uganda Mauritius and Mozambique stood out having a dedicated banner headings for this section, highlighting relevant policy and activities being undertaken. The Uganda NRA provided a diagrammatic representation of the process. The Tanzania NRA made mention of its UA policy but provided no details. The regional average for this region was 1 and is not surprising given that the NRAs of Rwanda, Tanzania and Sudan provided no information.

Figure 41: Country benchmarks

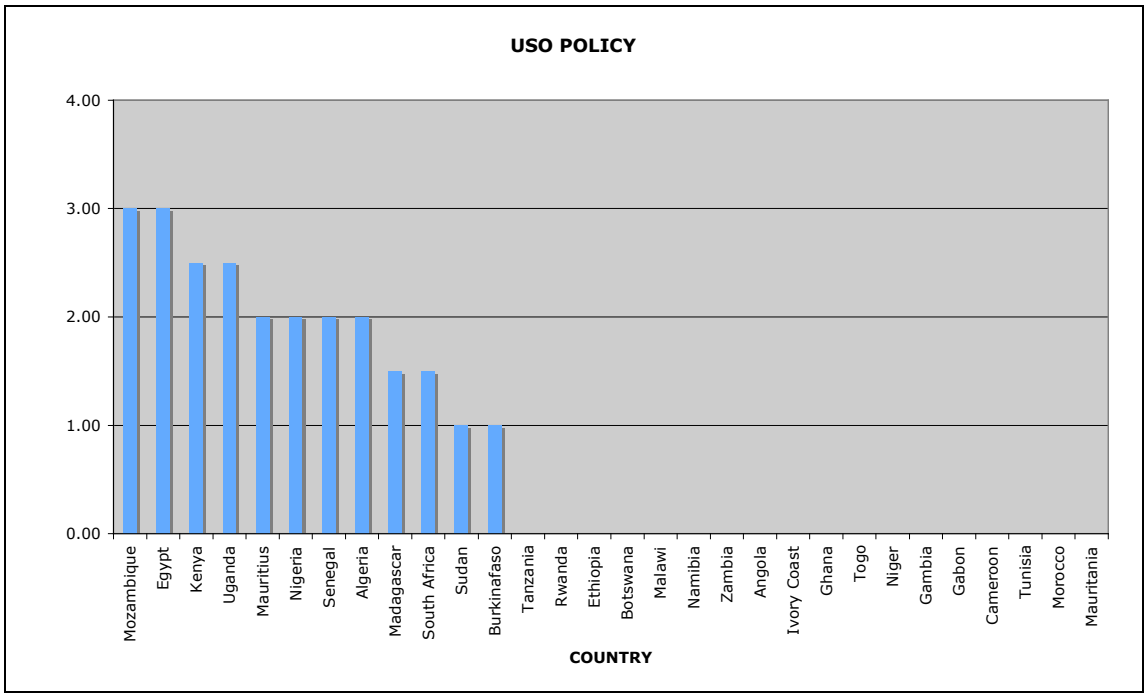


Figure 42: East African Region

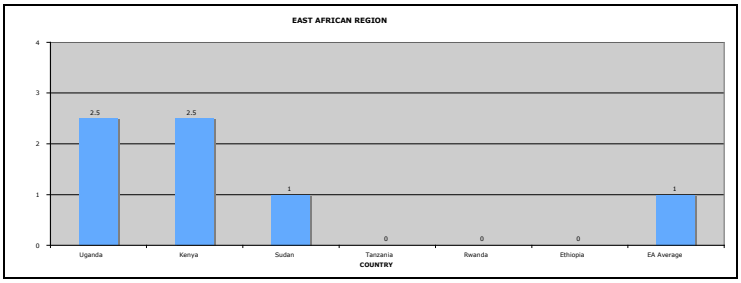


Figure 43: Island Countries

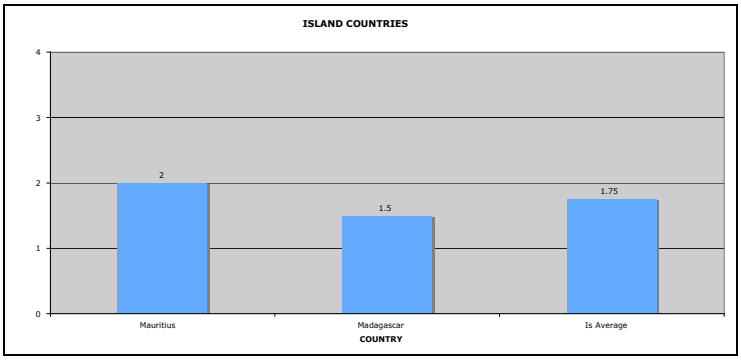


Figure 44: Southern African Region

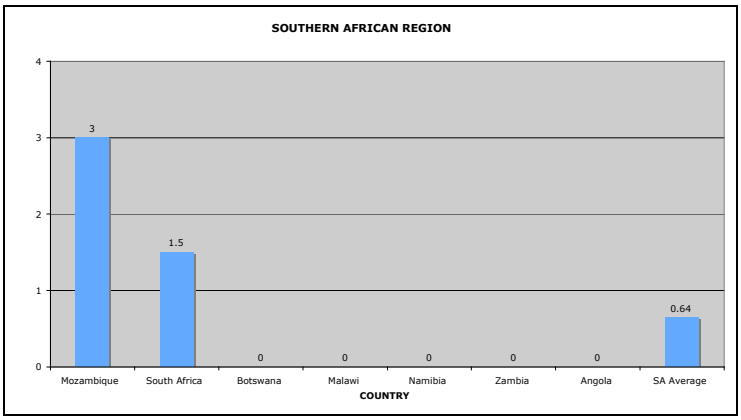


Figure 45: West & Central Africa

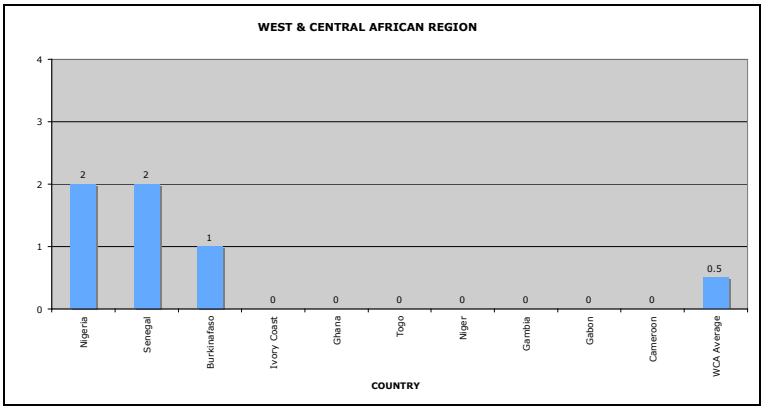


Figure 46: Northern African Region

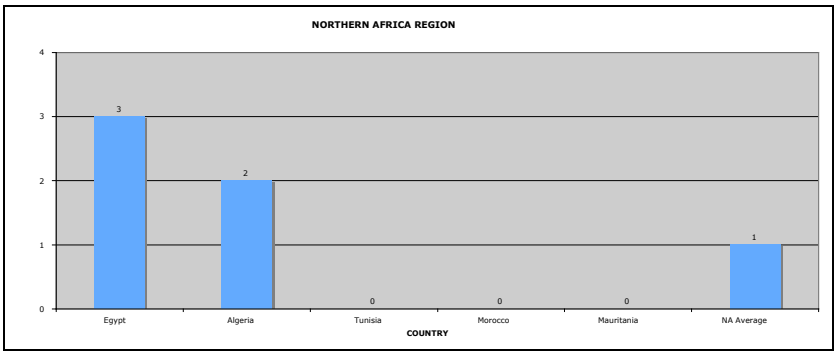
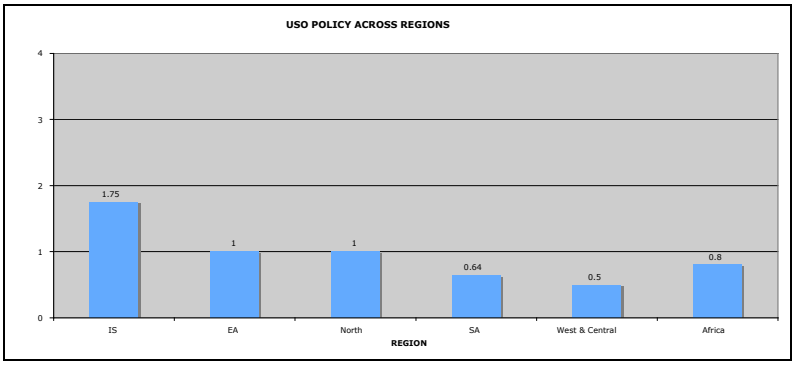


Figure 47: Regional benchmark



In North Africa, the websites of Algeria and Egypt stood out having a dedicated banner for UA. The regional average score for North Africa was 1 and was also lowed by Tunisia, Morocco and Mauritania none of which provided online content in this category.

In West & Central Africa, the NRAs of Nigerian and Senegal had information provided on the Universal Access while not specifically within a dedicated UA banner. The rest of the NRAs had no mention of UA within their website bringing down the regional average benchmark to 0.5.

The island countries of Mauritius and Mauritania both had UA policies provided online and thus not surprisingly had a regional average benchmark of 1.75 making it the highest when compared to the other regions.

The low benchmark scores in this category may be explained by the relative newness of UA as a new policy that has been adapted by most NRA's across Africa. It is hoped therefore that as NRAs in Africa begin to adopt universal access policies that they will be keen to follow the footsteps of NRAs like Egypt, Uganda and Kenya which have provided online details of the proposed policy and projects envisioned.

6. Conclusions and recommendations

On the basis of the findings of this survey, an immediate observation is the number of websites that have come under review. Out of the 54 countries Africa, only 55% (30) were reviewed as having independent regulatory bodies with a website. This is comparative to Asia (see Wattegama 2007) where three out of ten NRAs or 29% of NRAs did not have a website as at 2005. While it may be unfair to attribute the lack of this information to lack of understanding of role of regulator, and that this may be due to lack of other issues such as resources and lack of regulatory body institutions that are in place, it nevertheless indicates a need for improvement and raises concerns regarding e-governance.

Another noteworthy observation is the issue of language presentation of the NRA. While almost all websites have presented their information in either French, English or Arabic, its is surprising that none has made effort to present the information in local languages given that majority of the African populace speak at least more than one local language and have a common local language understood by many. This is therefore an issue for reconciliation given that the issue of literacy while classified in the international languages has a different bearing when taken in the context of local languages.

In addition, given the three main international languages dominate Africa (English, French and Arabic) effort should be made to ensure that the options for viewing the NRA websites in other languages is available. Of exception are the North African NRA websites who all provided options for English or French as an alternative to Arabic. It is recommended that African NRAs make effort to provide these two languages options in their websites.

The type of information provided across the African sites also raises issues of concern. While there is a remarkable improvement from the last review done by Mahan (2005), information still remains largely factual with very little effort made to explain and allow the reader to digest the information provided. Where information was available for downloading, this was mostly for legal and policy documentation. Nonetheless even this was explained separately. Disappointing across all the sites was a lack of effort made to analyse the statistical information that was laid out on the websites. Most of the information was laid out without any effort for comparative analysis across all the years. This type of information would be very informative to many stakeholders and in addition provides information for researchers and journalists internationally on the development growth of a country.

In addition, except for information regarding licensing procedures, many websites lacked the information usually sought by businesses and investors. For example, none of the websites had a list of equipment that was prohibited in the country nor did they have an analysis of the telecom environment in their respective countries.

Presenting information that was useful to consumers is another category that was also neglected by the majority of the African NRA's. For example information about consumer complaints was scantily available with a few lines rather than an explanation of what one needs to do in different scenarios. The Kenyan NRA website offers a section on consumer complaints procedures and information on current and ongoing complaints. Most of the NRA's therefore neglected information on the type of complaints a consumer can make, whom to contact in the different scenarios and toll-free numbers for making complaints (not one NRA had a free toll number available). Given the prevalence of mobile phones now in Africa, it would be expected that the regulators in conjunction with the operators provide a toll-free number for handling complaints procedures.

In addition, content on quality of service (QoS) parameters and health and environment issues were covered by fewer than three of the 30 NRA's reviewed. Given that websites are meant to be a window into what is happening both within the internal regulatory environment and external environment, these two aspects are strongly encouraged as content that should be readily available for consumers to make well-informed decisions.

Revealing and in need of improvement was the level of the NRA to participate as a vehicle for participating in regulatory processes. Nearly all the websites could be overall ranked as between the *emerging* and *enhanced* levels – i.e. as having largely static information that is updated regularly but not explained and digested. Where information was downloadable this was mostly limited to policy and legal documents. None of the African NRA websites could overall be considered as at the *interactive* and *transactional* levels – i.e. with information having further value-added such as being hyperlinked to relevant legislation, facilitating real-time online submission of forms and emails, and so forth.

NRA's should be aware that a valuable amount of traffic will be from researchers; journalists and international investors who further broker information to the general public. Thus a newsroom feature or consumer information banner that has further links to information within the website is very important for facilitating information dissemination via these users.

As noted in the introductory section of this chapter, the most important message this survey could communicate would be that all African NRA sites could be improved with little effort. While in the past blame has been placed on the lack of human and financial resources this argument is no longer warranted. Given that the websites already exist, specific improvements needed relate mainly to the uploading of relevant information and as well making it more functional.

Nonetheless, a number of assumptions need to be addressed by regulators in order to fulfil basic conditions for web presence success – that is, a websites' ability to be interactive and dynamic. This includes but is not limited to:

- common understanding of the role and opportunities to apply ICT in general and web presence in particular in communicating to the various stakeholders in the sector;
- existence of human resources within the agency to support content development and technical know-how to ensure that the website is accessible,

user-friendly, up-to-date and most importantly that the relevant content is continuously provided;

- basic conditions of ICT access and usage within the country in particular to connectivity to the Internet. Content relevancy and actual effectiveness of the website will not be achieved readily without this factor being addressed.

Perhaps, the most important lesson that African NRAs can learn is that there is no need to reinvent the wheel. Other NRA websites exist that are open to the public for any NRA to copy and learn from in improving the effectiveness of their own websites. We hope that this study has contributed to this process by pointing to some of the best practices in the region.

7. Future Studies

This study sought to focus on the available information uploaded as content in NRA websites. It sought to focus on the relevance of the information in providing informed decision making for the would-be user. However, this study did not delve into the actual process of choice of content and whether in actual fact these websites are frequently visited and for what type of information. Such a study, in the form of a qualitative and quantitative questionnaire to NRA's, would enhance this study by providing useful feedback on what users expect NRA's to provide.

In the same vein, it would be useful to initiate a study that focused on the de facto interactivity of the websites. What is the response time for queries made online? What type of online queries can one make? An email sent to a number of NRA's during this study to clarify location of information received no feedback revealing a need to ensure that features made available via the NRA websites are in use.

In conclusion, websites are increasingly a key element in evaluations of NRA performance. For the future, website content and interactivity will be a progressively important factor in assessing regulatory effectiveness. NRA's therefore need to ensure that websites are up-to-date and relevant. One-way to do this is to keep seeking feedback from their clients (journalists, researchers, businessmen, government and non-government institutions) and as well share their experiences with other NRA's both in the region and internationally.

8. Endnotes

[1] Most lending institutions such as the World Bank and International Monetary Fund (IMF) now use e-governance as a measure in determining financing and development improvement within a country.
[2] http://www.sadc.int/
[3] http://www.comesa.int/
[4] http://www.eac.int/
[5] http://www.ecowas.int
[6] See Chapter 1 for a full description of the NRA benchmarking methodology.
[7] However, this presumes that only individuals are obtaining and using such information. In reality, NGOs, the media and other community intermediaries may use the NRA website to obtain information to be more widely diffused.

9. References

Hargittai, E. (2000). Open Portals or Closed Gates? Channeling Content on the World Wide Web, Poetics.27(4):233-254. http://www.eszter.com/research/pubs/hargittai-portals.pdf

International Telecommunication Union (ITU) (2007). Online statistical indicators. http://www.itu.int/ITU-D/ict/index.html

Mahan A.K. (2005). Benchmarking African NRA Websites, in Mahan, A.K. and Melody W.H. *Stimulating Investment in Network Development: Roles for Regulators*. World Dialogue on Regulation (WDR) and *info*Dev. http://www.regulateonline.org/old/index.php?option=com_docman&task=docclick&Itemid=27&bid=149&limitstart=0&limit=5

Melody, W.H Schneider, M. and A. Mahan (2003). " *Benchmark indicators for Regulator NRA's: Results of a preliminary Survey of NRA websites. Telecom Reform in Latin America: Regulatory Issues and Implications*", La Antigua, Guatemala, September.

Wattegama, C. (2007). Benchmarking National Telecom Regulatory Authority Websites of the Asia-Pacific Region, in Mahan, A.K. and Melody, W.H., *Diversifying Participation in Network Development*. *info*Dev and Comunica. http://www.regulateonline.org/diversifying/Diversifying-133-150-Chapter-10.pdf

9.1 African NRA websites

Eastern Africa	
Uganda	www.ucc.co.ug
Kenya	www.cck.go.ke
Tanzania	http://www.tcra.go.tz/
Sudan	http://www.ntc.org.sd/
Rwanda	www.rura.gov.rw
Ethiopia	http://www.telecom.net.et/
Southern Africa	
Botswana	http://www.bta.org.bw/
Lesotho	http://www.lta.org.ls/
Malawi	http://www.macra.org.mw/
Mozambique	http://www.incm.gov.mz/
Namibia	http://www.ncc.org.na/
South Africa	http://www.icasa.org.za/
Zambia	http://lirne.net/test/
Swaziland	http://www.swazi.net/
Angola	http://www.inacom.og.ao/
Madagascar	http://www.omert.mg/
Mauritius	http://www.icta.mu/
West Africa	
Nigeria	www.ncc.gov.ng
Burkinafaso	http://www.artel.bf/
Cote'd'voire	http://www.atci.ci/
Ghana	http://www.nca.gov.gh/
Senegal	http://www.artp-senegal.org/
Togo	http://www.artp.tg/
Siera Leone	http://www.natcom.sl/ (under construction)
Niger	http://www.arm-niger.org
Mali	http://mali-reforme-telecom.mctmtl.com/
Liberia	http://www.lta.org.lr/index.php (under construction)
Guinea Bissau	http://www.icgb.org/
Benin	http://www.haacbenin.org/
Gambia	http://www.pura.gm/

Northern Africa

Algeria	http://www.arpt.dz/
Tunisia	http://www.intt.tn/
Egypt	http://www.tra.gov.eg/
Morocco	http://www.anrt.net.ma/
Libya	http://www.gptc-Libya.com (broken link)
Mauritania	http://www.are.mr/

Central Africa

Chad	http://www.otrt.td/
Democratic Rep. of Congo	http://www.arptc.cd/
Congo	http://www.dgacpt.com/pages/index.php?idPage=4
Equatorial Guinea	http://www.getesa.gq/
Gabon	http://www.artel.ga/
Cameroon	http://www.art.cm/

LIRNE.NET resources:

Online Resources from African Telecommunications Regulators
http://lirne.net/online-resources-from-african-nras/

Middle Eastern and North African Regulators
http://lirne.net/middle-eastern-and-north-african-regulators/