Study on Universal Service for Telecommunications in the Community of Portuguese-speaking Countries and in Macau, China

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Associação de Reguladores de Comunicações e Telecomunicações da CPLP

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Acknowledgements

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The TMT team at VdA has over 25 years of experience consulting in the field of electronic communications, with extensive experience in particular in assisting in the definition of strategic policies for the sector.

This project received the collaboration from GTSU - Grupo de Trabalho do Serviço Universal (Universal Service Working Group), composed of one representative of each ARCTEL member (i.e. AGER, ANAC, ANACOM, ANATEL, ANC, ARN-TIC, INACOM, INCM and ORTEL). The representative of the regulatory body for electronic communications of Cabo Verde was selected as Chair of the GTSU.

ARCTEL is responsible for the English version of this study originally written in Portuguese.

*1. Although in some countries the concept of "*telecommunications*" has already evolved for reasons which stem from the convergence of networks and services, into the concept of "*electronic communications*", in this study, we essentially use the concept of telecommunications, since it is still the concept used in the large majority of non-European Union countries. In any case, the concepts of telecommunication and electronic communications, when used, will have the same meaning.*

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Executive Summary

The Universal Service for Telecommunications reflects a view which tends to see the State as a provider and as sensitive to the interests of citizens - a means of ensuring availability of certain provisions or socially relevant services to the general population. In recent decades, it has been a major driver of social inclusion, reducing asymmetries, strengthening territorial cohesion, promoting economic development and protecting disadvantaged groups of citizens.

Although this is a mechanism that is applied and used in different regions, there are substantial differences in political terms and content present in the provision of the Universal Service for Telecommunications. Such differences are noticeable, especially in terms of the definition of the scope of the universal service, the determination of the form of provision and the design of the financing mechanisms.

Existing experiences, particularly within the European Union and the United States, demonstrate that the underlying objectives of universal service can be pursued in different ways, in terms of the definition of its scope and how its provision is ensured. These experiences have had an undeniable influence on the various members of the CPLP.

On closer examination, it is possible to detect significant areas of harmonisation in important aspects of universal service among the various members of the CPLP and Macau, China, especially in terms of the respective legal regime. However, significant differences persist in the accomplishment and implementation of legislative solutions, leaving room for the development of policies and solutions that are more harmonised in terms of the concept and scope of the universal service for telecommunications.

Existing literature and international trends clearly indicate a need to rethink the universal service; by aligning it with the challenges of the twenty-first century, making its goals more ambitious, encapsulating the various dynamics of the telecommunications and ICT services sector, a greater convergence of services, networks and content can be ensured. For members of the CPLP and Macau, China, the conducted study uncovers certain benefits in this area that can be easily applied to other regions.

Firstly, there is the emergence of a new twenty-first century paradigm of universalisation and digital inclusion based on two adjacent but conceptually distinct realities: (i) the universal service and (ii) ICT measures and initiatives. This new paradigm accepts and recognises that there are certain actions — outside the more traditional concept of universal service — which pursue the same goals and aim to achieve the same results. Rather than continue to treat these realities separately, the objective is to create a harmonised legal framework for the various measures of universalisation and digital inclusion.

The Universal Service should retain its more traditional characterisation as a minimum set of telecommunications services considered essential to life in society and economic development at any given time, since this is considered the option that is least intrusive for the functioning of the market and that will lower barriers in terms of financing needs. However, the actual scope of universal service should be reviewed periodically, to bring it into line with the reality of the market and the evolution of the sector.

From the analysis carried out, it is suggested that the scope of universal service should be reviewed to incorporate connection to the mobile telephone network (not merely fixed) and, in particular, to cover the data transmission service and broadband Internet access (fixed or mobile), with appropriate transmission speeds. This suggestion is in line with the main trends and international documents on the subject.

In addition, it is considered that the paradigm of universal service provision should evolve into a mechanism which essentially seeks to address the specific needs of certain local areas or groups of people. In practical terms, this implies favouring a logic of projects or individual measures of universalisation over a logic of preventive designation of universal service providers to cover the entire territory. This measure may mitigate the needs of public or private universal service financing.

As regards ICT measures and initiatives, which, as a rule, combine a range of provisions, services or goods into a single project, the creation of a more favourable legislative framework is suggested, defining rules which govern the launch of tenders, choice of beneficiary entities and respective financing. Given their nature, these measures should continue to function on a basis of specific projects and be focused on market needs.

The measures of universalisation and digital inclusion should be laid down by means of transparent and non-discriminatory procedures, particularly through public tenders. Financing must be ensured, above all, through so-called universal service funds, and supported by contributions from telecom operators. It should also incorporate the possibility of budget allocations and donations from public or private bodies, as well as contributions from users, defined, for example, as a surcharge on the prices charged for telecommunications services (pre-paid or post-paid).

Universal service funds must be carefully managed in a transparent manner and independently from operators and public authorities. Furthermore, it should be ensured that the contributions required from operators do not constitute a barrier to their activity. For this purpose, the level of contributions must be defined by taking into account the fund's ongoing financing needs, and contributions may be suspended when the sums managed by the fund are sufficient to support current projects.

As an alternative to the universal service and ICT measures and initiatives, the legal regime may also provide for the imposition of obligations of universalisation, in certain circumstances, on all or any of the operators, especially as a result of procedures conducted to allocate scarce resources. This will contribute to stronger rates of coverage by telecommunications networks throughout the territory.

An oversight committee of universalisation policies and measures is proposed for the CPLP and Macau, China. Such a committee could be set up to monitor developments occurring in this area and as a platform to share the experiences and practices of each country. Countries that decide to adopt the principles and suggestions included in this study should begin by adopting a policy of universalisation and digital inclusion which, from a legal point of view, provides the framework necessary for the changes to be implemented.

Future regulatory and legislative policies may already take this broader concept of universalisation into account, responding to the current dynamics of the telecommunications and ICT services sector and seeking to create a more flexible mechanism which is aligned with the convergence of services, networks and content.

1. Introduction

1.1 Scope and Objectives

The object of this study is to carry out, for the first time, a comprehensive and detailed analysis of the current state of the universal service in CPLP Member States and in Macau, China involving:

(i) A survey of information on CPLP countries and on the market for electronic communications;

(ii) An analysis of the legal framework which governs the universal service in each country of the CPLP;

(iii) A description of how the concept of universal service is accomplished and an assessment of the main rules that govern its availability in each country and the respective financing;

(iv) A compilation of information on policies to promote the universal service;

(v) An examination of the major international trends affecting universal service.

In addition, by considering the information compiled and its analysis, this study will evaluate the possibility to consider a broader concept in future regulatory and legislative policy, which enables incorporation of the various dynamics of the telecommunications and ICT services sector and is more flexible and better aligned with the current convergence of services, networks and content. The study will also evaluate the possibility of proposing an outline for the development of the concept and scope of universal service that is common to the various Member States of the CPLP.

Finally, a set of recommendations and guidelines are presented that can be used to improve procedures and mechanisms of universal service management and associated aspects, particularly in terms of financing.

1.2 Methodology and support information

This study was carried out using an analysis methodology involving the following stages:

(i) Research using publicly available databases (ITU, ARCTEL, World Bank, etc.) on relevant indicators referring to the CPLP countries and the ICT market.

(ii) A preliminary survey of information on the legal and regulatory framework governing the universal service in each country of the CPLP, which was sent to GTSU members for comment and confirmation.

(iii) Preparation of a comprehensive questionnaire to compile information on the current state of the universal service in each country, divided into nine major themes:

- Concept and Scope of Universal Service
- Providers of the Universal Service
- Financing of the Universal Service
- Universal Service Price Regime
- Universal Service Quality Assurance
- Obligations of Universalisation
- Universal Service Projects/Initiatives
- Future of the Universal Service
- Other questions

A preliminary version of the questionnaire template was sent to GTSU members for comments and suggestions for changes and the final version was later sent to compile the information requested.

(iv) Presentation and discussion of a preliminary version at the ARCTEL General Assembly in Luanda in May 2015.

(v) Collection of comments and final contributions to the study, by the end of August 2015.

In addition to the information compiled by the consultants and sent by GTSU members, this study was also based on the information obtained from the Bibliography in annex.

2. Universal Service Framework

In introductory terms, it should be noted that the universal service did not originate in the telecommunications sector and is not even a specific concept of this sector. Instead, it is a reality in other network industries, such as energy and postal services, with the same characteristics (or at least with similar characteristics) to those which are traditionally given to the universal service for telecommunications.

There are also concepts similar to the universal service in other business sectors; for example, the concept of minimum banking services, as regards the opening of accounts and the use of debit cards.

Despite this coverage(for reasons that do not require explanation) throughout this document reference is only made to the universal service in the context of the telecommunications sector.

2.1 Brief historical approach

As in other network industries, telecommunications services were historically provided on the basis of a monopoly in which the State — by its own means or through an intermediary — ensured the existence and availability of services, (including the fixed telephone service) throughout the national territory.

In addition to the political and social factors involved in the centralisation of these services under the State, from an economic point of view it was widely believed that telecommunications networks constituted natural monopolies, so that provision of the fixed telephone service should be ensured exclusively by a single undertaking.

During this first phase, telecommunications services were provided on a public service basis, stemming from State's assumed role as a provider of certain services. In this period, the concept of universal service did not exist, or at least it did not have the connotation that it has today. Although there was an implicit goal of universalisation in the provision of services, the undertaking controlled by the State was required to follow the guidelines and recommendations issued by the State in a way that would not always be compatible with the characteristics that are traditionally given to the universal service.

It was with the phenomenon of market liberalisation in the early 1980s, at least in Europe, and the privatisation of public operators that it became necessary to find mechanisms to ensure that the interests of the State remained safeguarded when they could not be guaranteed solely by the functioning of the market. It is in this context that the more traditional concept of universal service has gained prominence and relevance.

At its genesis is the idea of ensuring universal provision, i.e., provision throughout the territory at affordable prices for a minimum set of telecommunications services (provisions[2]) as deemed essential to ensure protection of the interests of end-users, strengthening territorial and social cohesion and maximising the economic benefits of existing telecommunications networks.

2. Throughout this study, the concept of "provisions" is used in a sense equivalent to "services".

The evolution from a market dominated by the State into a liberalised market also led the State to change its role from provider to guarantor. This represents an important difference between the public telecommunications service and the universal service. While the first case implies that the State — by its own means or through an intermediary — is responsible for ensuring certain public provisions/services, in the second case, the State's responsibility is limited to ensuring that the market itself provides such benefits, according to certain conditions.

Therefore, in historical terms, we can make a distinction between two important phases. In a *first phase* (where telecommunications services were made available based on a public service logic) universal service was, in a certain manner, instilled into this provision, if only as a result of the obligations of the monopoly/incumbent operator. In a *second phase* (in which the market is liberalised and its operators are privatised) the universal service gains autonomy and prominence as a way for the State to continue to ensure, albeit not now through its own means but by guarantee, the continued availability of certain public provisions with social importance.

Naturally, this evolution did not occur along the same lines in all countries. Especially in African countries, where the fixed telephone service was and is historically inexpressive. The idea of universalisation has been difficult to instil in the obligations of incumbent operators, given the size of the investment costs required to cover the entire territory. Even in countries where this idea was present in the prevailing legal framework, circumstantial difficulties (such as civil war, low purchasing power and the lack of competition) have undermined a further spread of telecommunications services, which have remained historically restricted to large urban centres.

In these countries, it was with the emergence of the mobile telephone service and the increased economic development of recent decades, in particular, that the idea of universalisation of telecommunications services has gained importance.

2.2 Fundamental notions

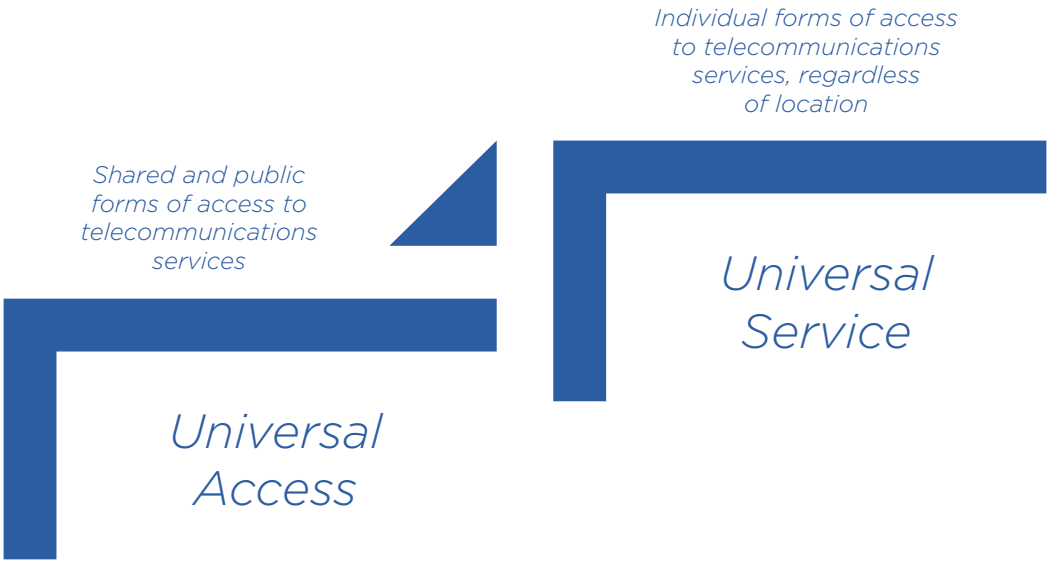
In the range of literature, two major concepts are often found which, although interrelated and sometimes used interchangeably, have a certain degree of autonomy. These are Universal Service and Universal Access.

In general, it can be said that the concept of ***Universal Access*** is more related to policies aimed at provision of infrastructure and telecommunications services through shared and public resources, such as public pay-telephones, Internet centres, libraries, schools, etc. As a result, ***Universal Access*** is also referred to as public, community or shared access. Meanwhile, the concept of Universal Service is more related to policies aimed at provision of telecommunications infrastructure and services *to anyone in all households*, regardless of location. It is also related to the provision of assistance to specific groups of people with special needs.

As can be seen from the point of view of the provisions involved, the concept of Universal Access is less demanding than the concept of Universal Service. For example, while the availability of telephones or access to the Internet in public/community sites may fulfil the concept of universal access, the concept of universal service would require such phones or services to be available for access in the user's private dwelling.

So while the concept of universal access, at its root, is more linked to the establishment of objectives in specific locations (e.g.: The installation of a telephone per ***X*** inhabitants or the provision of a means of communications for every ***X*** kilometres), the concept of universal service appears more linked to the consumer as a person, regardless of that person's location.

For these reasons, in a sense, the concept of Universal Access precedes the concept of Universal Service, insofar as — being traditionally less ambitious — some countries decided to start by focusing their attention on community and shared forms of providing telecommunications services before advancing to the more demanding objectives of universalisation:



Despite the differences in conceptual terms, both Universal Access and Universal Service can be characterised by their reference to three distinct and fundamental characteristics, although with different levels of intensity:

(i) *Universality*: The service in question is available throughout the national territory, whether by public, community or private means, and is available to any user, regardless of location, gender, etc.;

(ii) *Quality*: The service is available based on a framework of minimum quality;

(iii) *Affordability*: The service is provided at an affordable and equivalent price throughout the territory, particularly for certain groups of users or in determined regions with most need.

In the ICT Regulation Toolkit, the main differences and similarities which arise between the concept of Universal Service and the concept of Universal Access are summarised as follows:

Characteristic	Universal access	Universal Service
Universality	Focused Coverage	Blanket Coverage
	Public Access	Private Access
	Emergency Calls	Emergency Calls
Quality	Access at a Short Distance	Access at Home
	Measures for Users with Disabilities in Public Places of Access to Services	Measures for Users with Disabilities regarding Terminals or Services
	Adequate Quality of Service	Reasonable Quality of Service
Affordability	Payment by Cash or Card	Reduced Costs with Price Controls
	Payment per Use	Monthly payments

Although there are differences between the concept of Universal Access and the concept of Universal Service, the truth is that the two expressions are generalised and, as mentioned above, in many cases are used interchangeably. It is, moreover, common nowadays to allude to universal access in a sense that is very close to the meaning of universal service.

In fact, sometimes, the expression universal access is used to encompass realities that go beyond those that would fit into a narrower concept of universal service, which creates some ambiguity and can

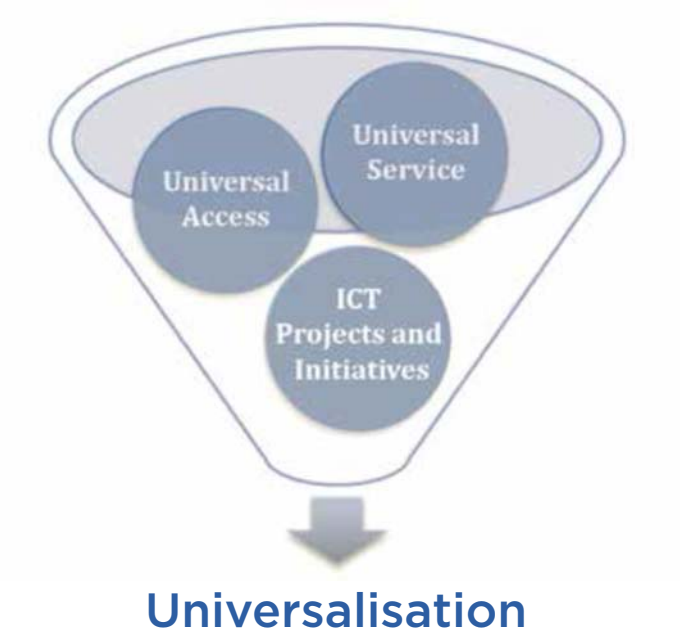
generate conceptual uncertainty. For these reasons, it is common to allude to the broader concept of Universal Access and Service.

In addition, the assessment carried out shows that there are a multitude of projects and initiatives which, among other objectives, seek to promote the universalisation of telecommunications services and applications more related to ICT, such as tele-education, tele-medicine, e-commerce and digital inclusion, entailing equipment and infrastructure subsidies and the promotion of literacy.

Such ***ICT Projects and Initiatives*** may appear (and often this is the case) dissociated from more traditional mechanisms of universal access and service, encompassing provisions which go beyond the boundaries traditionally associated with the universal service. Furthermore, the decision to engage specific projects and initiatives seems to result precisely from aims which go beyond the traditional scope of universal service, or in order to mix multiple realities not necessarily specific to the telecommunications sector.

Nevertheless, the fact that such projects and initiatives seek to promote the provision of services in situations where normal market dynamics do not enable a response to existing social concerns means that their objective is similar to those normally associated with universal service.

In schematic terms, with impact on the matter at hand, we are sometimes faced with the following realities:



These realities may have different legal frameworks and function independently or in conjunction, and may sometimes overlap. This conclusion also stems from the fact that, currently, many universal service or universalisation funds are used to subsidise projects and initiatives, services, platforms and/or infrastructures that go beyond the traditional minimum set of services made available under universal service, crossing over into the field of ICT applications and services.

In any case, the concept of universal access and service is commonly associated with the existence of universal service obligations, while ICT projects and initiatives tend to operate based on plans or development policies, although reality may reveal different situations.

Given this actual and conceptual approximation, throughout this study, the concepts of universal access and universal service will be used indifferently, unless the context indicates to the contrary, including reference to universalisation measures or projects, which, as a rule, have the same meaning.

2.3 Objectives

Since the universal service is a means of ensuring the availability, to the population in general, of certain socially relevant provisions, this service is underlain by a set of objectives that often have explanation and origin in the Constitutions of each State and in programmatic policy objectives.

Furthermore, it has been considered that connection to a telecommunications network is necessary to enable full participation in society, facilitating the exercise of social, political and economic rights and access to cultural activities that enrich each person's quality of life. For these reasons, some countries have considered the minimum set of services covered by universal service as a basic right of life in society.

Since this is the idea that is at the root of the universal service, it should be noted that the objectives to be pursued have always been defined with reference to social and economic concerns. *On the one hand*, the universal service should include provisions that are relevant to ensure social inclusion, improving quality of life for citizens and providing for more harmonious economic development. *On the other hand*, these provisions must be made available within the scope of the universal service only to the extent that normal market forces are not sufficient to ensure them.

In general terms, the following objectives can be highlighted, traditionally associated with the universal service:

(i) Reduction of asymmetries and prevention of social exclusion;

(ii) Increased social equity and ongoing availability of opportunities;

(iii) Strengthening cohesion and national identity;

(iv) Promoting economic development and social harmony and equilibrium;

(v) Protection of disadvantaged social groups;

(vi) Guarantee of provision of service to people with disabilities.

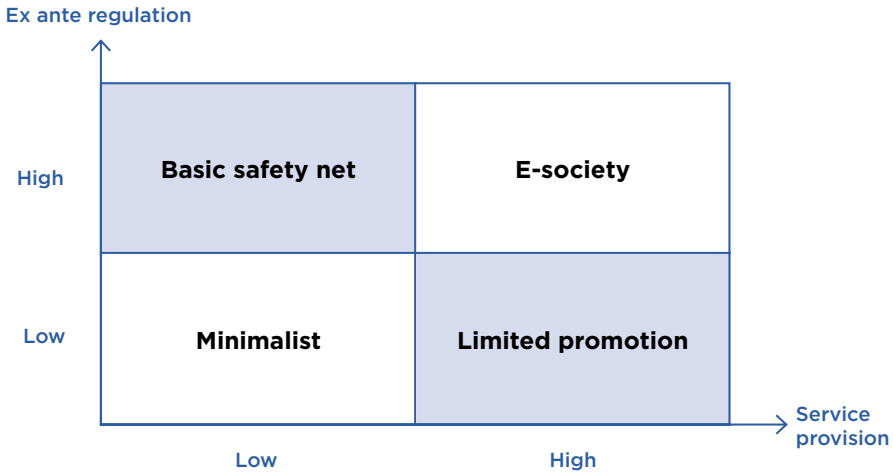
These objectives can be pursued in different ways and, depending on the economic and social development of each country, it is natural that there is some degree of hierarchy between them, starting with more general measures of universalisation of telecommunications services and advancing to more specific objectives seeking the protection of disadvantaged people.

In this context, it should be noted that the provision of public services connected to relevant social interests led the universal service becoming known as a form of social regulation, as opposed to economic regulation (focused on the establishment of pricing rules, etc.). In social regulation, the State controls the provision of certain services considered essential for life in society and adjusts the mechanisms of intervention according to social factors such as affordability, the availability of services throughout the territory and the provision of certain features to people with special needs.

2.4 Scope of Universal Service

2.4.1 General aspects

The scope of universal service depends heavily on the context in which it operates in each state, on the social and economic policies being promoted and also, given the respective geopolitical context, on the greater or lesser degree of freedom that each country has to define the services that must or may be available in this area. These aspects can be illustrated by the following matrix, which refers to the question of the scope of universal service and the ongoing role of the State:



Source: Broadband Universal Access and Services: Opportunities for Broadband for All

At a "*basic safety net*" level, there is intervention with limited scope, i.e., as a minimum set of services to be defined from the outset. It is the dominant model in the EU, where, as seen in Chapter 3.5, minimum universal service provisions are defined by law. At a "*limited promotion*" level, mechanisms are defined to encourage the availability of certain provisions. However, it does not assume a posture in terms of ensuring the existence of certain services.

With regard to the "*minimalist*" level, it is assumed that the market functions properly and, as such, there is no need for intervention, even indirectly, through promotional activities. Finally, at an "*e-society*" level of intervention, the State takes an active role in ensuring the rights of citizens, recognizing that their participation in the ICT sphere is fundamental to life in society.

In addition to this matrix, the inclusion of certain provisions in a policy of universalisation or within the scope of the universal service should be subject to a thorough and detailed evaluation of various social, legal and economic factors.

As is recognised in existing literature on the subject, extending the scope of this service may be very important from a social point of view, increasing the range of services available and mitigating any asymmetries. However, a proposal to extend the scope raises sensitive issues, primarily related to the financing of new services, and also concerns regarding the possible distortion of competitive conditions, considering the provision of services at low cost in parallel with services governed by commercial conditions.

Therefore, the decision on the type and number of provisions to be included within the scope of universal service or universalisation policies should be properly weighed.

In this regard, although there are no detailed rules on the matter, with different approaches noted from country to country, there are a number of important questions in this respect which need to be answered before a final decision on the matter is adopted; these questions include[3]:

(i) is the service in question essential, given the evolving economic, social and technological conditions, to ensure economic development and increase quality of life?

(ii) has the service in question been subscribed to by a substantial proportion of customers, so that the non-availability of the service to certain people or territories may generate a problem of social exclusion?

*3. For example, in **Japan** the essential criterion is whether the service in question is essential for the daily needs of users, in the sense that it covers services used by everyone which comprise social and economic activities. In the **USA** four key factors are defined in law for consideration in this regard: (a) whether the service is essential for education, health or public safety; (b) whether the service is subscribed to by a large majority of residential users; (c) whether the service is being provided by private companies and (d) whether the availability of the service is consistent with the principles of public interest, appropriateness and reasonableness. Finally, in the **EU**, analysis of the evolving social, commercial and technological conditions is required, whereby it is necessary to show that: (a) the candidate services are available in terms of coverage and use for a substantial majority of the population; (b) there is a risk of social exclusion for those consumers who cannot access/afford the services and (iii) that the provision of the service is reflected in a general benefit for all consumers, with necessary public intervention (Recital 25 of Directive 2002/22/EC).*

(iii) can the service in question be provided by traditional market forces?

(iv) is the inclusion of this service within the scope of the universal service the best way to ensure its promotion or are there alternative, less intrusive means?

Positive responses to these questions may motivate an expansion or reduction of the provisions included within the scope of universal service, in order to achieve a desirable balance between the promotion of socially important services and minimizing market distortions, in particular, the provision of services outside normal commercial conditions. It is also desirable that the scope of universal service be periodically reviewed and updated.

2.4.2 The evolution of the scope of the universal service

Chronologically, at an initial stage, coinciding with the period during which liberalisation of the market was being strengthened, the scope of universal service essentially covered provision of the national and international fixed voice telephone service. In this context significant investments were made aimed at providing a specific country with the necessary infrastructure to allow provision of such services.

In a second phase, data transmission/internet access services are added, but without any type of imposition in terms of speed, which is why it was held (and is still held in some regions, such as the EU) that only provision of narrowband Internet access services should be included in the universal service.

In addition to these basic services, the universal service may also comprise other ancillary services, such as subscriber information services and the publication and distribution of telephone directories, provision of public pay-telephones, additional mechanisms of response to emergency calls and facilities for people with disabilities or special needs.

More recently, a number of countries have been rethinking the traditional boundaries of universal service, questioning whether it should not cover the provision of other telecommunications services. In more developed countries, the accomplishment of the minimum goals of universal service (e.g., universal geographic coverage and provision of a minimum set of services) also made it possible to think of widening the scope and content of the universal service, covering new realities. In developing countries, the aim has been to skip some phases in the development of the telecommunications sector, taking advantage of mobile technology to include provisions which are more in line with the needs of modern society within the scope of the universal service.

Regardless of the reasons surrounding this issue, it is undeniable that currently, given the increasing convergence and integration of services, discussion is centred on the possible inclusion of mobile telephone services, broadband Internet access and even radio and television broadcasting services within the universal service.

In this context, it is made clear in the various existing studies that the most important question today concerns whether or not broadband is included in the universal service. This stems from the recognition that broadband networks support services and applications which are increasingly central and essential in every person's life to ensure social participation and inclusion, improving their well-being and quality of life. At the same time, it is clear that broadband is currently one of the engines of economic growth and innovation, with significant impacts in various sectors such as agriculture, banking, energy, education and health.

It's not so surprising that some countries (such as Spain, Finland, Cabo Verde and Brazil) have already decided to add some of the more basic and simple forms of broadband access to the universal service. In other cases, as is the situation in the USA, national programmes have been launched to stimulate broadband services. The same is true in Brazil, one of the countries of this study, which, in 2010, launched the *Plano Nacional de Banda Larga* (National Broadband Plan), which will be detailed below, and which covers a diverse set of initiatives designed to enable broadband access, both in terms of infrastructure and in terms of services.

This development is also linked to the fact that currently available technology allows access to broadband Internet (fixed or mobile) in remote areas and in areas lacking infrastructure. Therefore, it has been considered that the provision of services to these communities or to other population groups is crucial in any evolution of the concept of universal service.

On the other hand, it must also be asked whether realities not specifically related to telecommunications services should be part of universal service or at least figure in a general policy of universalisation. In this context, the concept of *digital Inclusion* has gained special prominence, with the aim of resolving shortcomings in digital inclusion for certain groups of people, such as people with disabilities and in some countries, women and children.

The concept of Digital Inclusion can cover various realities, from the availability of different electronic communications services to the provision of telecommunications equipment and the implementation of other measures promoting digital literacy.

2.5 Approaches to the Universal Service

The guarantee of access to services of public interest included in the universal service has historically been provided using the range of options of state intervention in the economy.

As mentioned, in the initial period of provision of telecommunications services, universal service obligations fell on the incumbent operator, so that they were confused with the obligations of public service to which the incumbent was also bound. At this stage, the universal service obligations were not explicit and found themselves incorporated into the incumbent's general obligations.

After market liberalisation, the question arose of how best to achieve the goals associated with universal service. There are several methods of ensuring compliance with the universalisation goals. Experience shows that, in most cases, these methods are used cumulatively; as such, it is important that any country has an adequate legal and regulatory framework which enables recourse to the various forms of universalisation to achieve the social and economic objectives targeted at any time.

Given present evolution, we can summarise some of the forms chosen as follows:

Market functioning

One accepted hypothesis is to let the proper functioning of the market achieve the goals of universalisation. Of course, this hypothesis is only configurable in highly developed markets where there are no shortcomings in infrastructure and services in any part of the territory. For this reason, it is not a common option, even though there are relevant examples.

Designation of universal service providers

The most common option over the last decades has been the designation of a particular undertaking to provide the various provisions of universal service throughout the territory of each country, tasking this undertaking with so-called *universal service obligations*.

Initially, the incumbent operator in each country was the ideal candidate to take on this responsibility, since, as the only provider with coverage of the entire territory, it could provide services across the majority of the territory without being required to undertake prohibitive investments. However, as competition increased and with technology allowing greater flexibility in the provision of services, the need arose to consider the use of more competitive procedures to designate universal service providers.

In order to encourage participation in tenders for the provision of universal service, it is common to divide a given territory into different geographic areas, to enable the designation of various providers across the territory, and also to distinguish the services that make up the universal service, thereby making it possible for interested parties to only apply to provide the services which they consider most attractive.

Imposition of universal service obligations

Another method used to achieve the goals of universalisation entails imposing obligations of this nature on operators authorised to exercise activity in a given territory. These obligations are imposed alongside other conditions which bind particular undertakings and which may entail, for example, requiring a particular undertaking to: (a) cover a certain percentage of the national territory; (b) provide certain services in specific areas; and (c) offer tariffs at reduced prices to certain population groups.

Where tenders are launched for new licenses, this procedure may still be used to achieve certain objectives of universalisation. In this case, the undertaking interested in obtaining the licence should propose a set of actions in the field of telecommunications (e.g. to provide specific equipment) and the information society (e.g. provide training or applications) to which it is bound upon winning the tender.

Finally, it is notable that the *obligations of universalisation* are generally distinct from universal service obligations, since universal service obligations are typically imposed on designated universal service providers, while obligations of universalisation may be imposed on any undertaking, regardless of whether it has the nature of universal service provider.

Universalisation projects

In some countries — regardless of whether or not there is a designated provider — the objectives of universalisation are pursued mainly through the launch of specific projects. These projects seek primarily to provide telecommunications services in the most deprived areas or groups, but also include ICT initiatives.

As a rule, these projects are launched by public tender, whereby any authorised/licensed undertaking may submit a proposal. Projects can be limited to a particular provision (e.g. supply of equipment or training) or last for several years, especially when they involve the ongoing provision of services in a particular area to a determined population.

2.6 Financing

The issue of universal service financing did not arise during the period that telecommunications services were reserved to a single operator. Typically, in this situation, the costs incurred by the provider through the provision of universal service were usually internalised, which meant that the operator in question could subsidise the negative margins[4], if any, using the positive margins generated by other customers or other services included in its concession (such as international or long distance calls).

Even in cases where only the provisions of universal service are considered, the designated provider could, in principle, offset the costs incurred through unprofitable customers with margins generated by profitable customers. In this case, it would only make sense to assign financing if prices have been set in order to prevent this cross-subsidisation in theoretical or practical terms.

With market liberalisation, and considering that any operator could provide the services which are included in the universal service — without the obligations/duties incumbent on the universal service provider — the conditions should be fulfilled to overcome the defects inherent to a universal service policy, which is established in order to eliminate asymmetries in the population's access to basic telecommunications services.

However, given that the instruments associated with liberalisation do not resolve the question of provision of such services in all areas and to all citizens without the State intervening to appeal to private sector investment, the question of how to finance the costs of universal service provision in these situations becomes more pressing. In this context, the funding is constituted in the form of compensation to a determined company for the assumption of obligations whose effects cannot be fully internalised, given the existence of competition and the possible loss of profitable customers.

4. In general terms, the concept of negative margins refers to the provision of services at a loss or outside normal market conditions.

The financing needs of the universal service vary substantially from one country to another and are influenced by several factors, such as:

(i) demographic, geographic and socio-economic factors of each country;

(ii) number of operators in the market;

(iii) legal and regulatory framework; and

(iv) existing universalisation policies.

However, in some countries, the financing of the costs incurred by the universal service provider is subject, as a rule, to the fulfilment of two requirements: (a) the costs incurred must be considered excessive and (b) there must be net costs, calculated according to a specific methodology. Alternatively, if the universal service provider is designated by tender, the value of financing is as determined under this procedure.

Compared to the previous framework, in general terms, the financing of universalisation measures derives from one or more of the following sources:

Financing using public funds

Compensation of the costs incurred by the universal service provider or as a result of universal service projects is provided by means of direct financing from public funds, usually through the general budget of the State or from surpluses arising in the budgets of regulatory authorities.

Certain projects may also be fully or partially funded by international funds, such as the European Union, ITU, or other organisations, as part of this category of financing from public funds.

Fees for interconnection services or charges on users

In these cases, the financing of the universal service is provided by means of fees imposed on interconnection services, including termination rates, or through a surcharge on all users, including through a percentage included in bills or through a specific minimum amount payable by all users.

Compensation fund

Another option for providing compensation of costs incurred through the provision of universal service is to create a compensation fund to which, as a rule, all electronic communications operators make contributions. The funds in question may be without separate legal personality, merely constituting autonomous assets, or may be set up as independent legal entities, with their own management.

Contributions made by operators is the most common way of financing universalisation goals, and this obligation may be imposed on all operators or only a few operators in line with their respective market positions. Furthermore, the contribution amount is typically defined as a percentage (e.g. from 1% to 5%) applied to the financial results reported by a market operator in the following calendar year. But the fund may also be financed by public funds or through private funding.

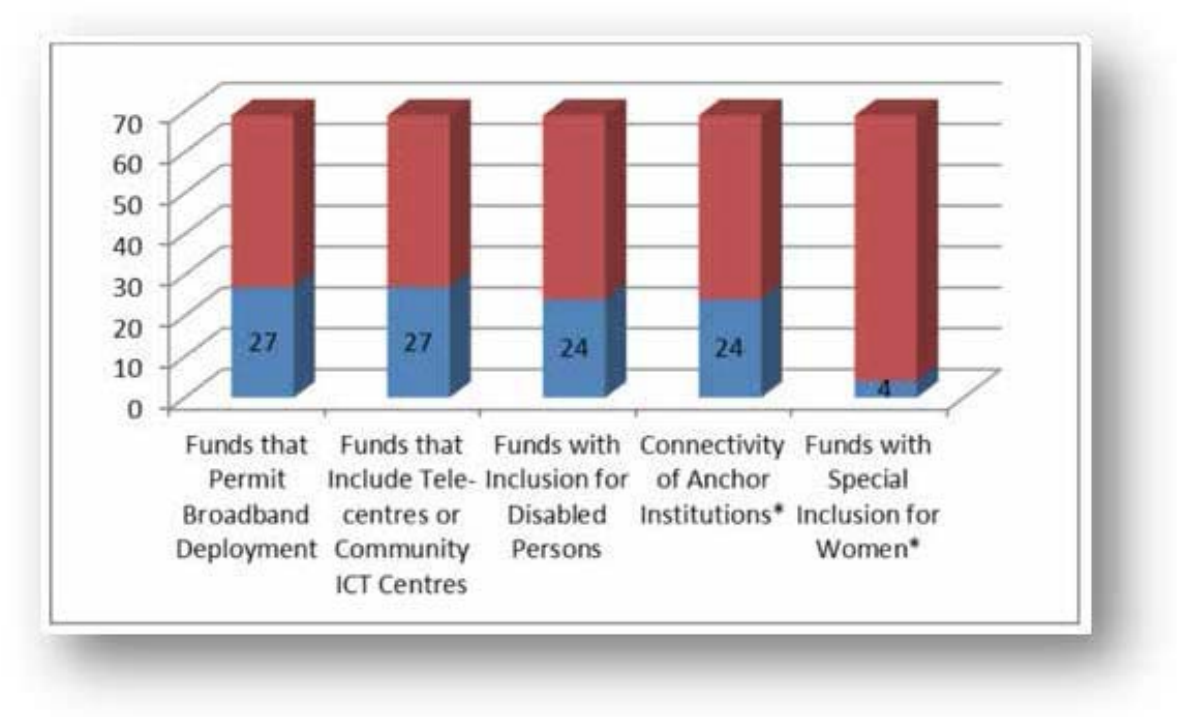
According to literature, funds are currently the most common form of universal service/universal project financing. According to ITU data[5], there are about 69 funds worldwide with objectives of universalisation — 22 of these funds in African countries:

Region	Africa	United States	Asia-Pacific	Europe and CIS	Americas	Total
Existing Funds	22	7	16	8	16	69

Source: Universal Service Fund and Digital Inclusion for All, 2013, ITU[6]

5. Universal Service Fund and Digital Inclusion for All, 2013, ITU, available at: https://www.itu.int/en/ITU-D/Conferences/GSR/Documents/ITU USF Final Report.pdf.

6. http://www.itu.int/en/ITU-D/Regulatory-Market/Documents/USF_final-en.pdf.



Source: *Universal Service Fund and Digital Inclusion for All, 2013, ITU*[7]

Some funds now provide support for broadband projects and others also finance digital inclusion projects for specific population groups.

Other sources of funding

Although less commonly employed than the previous options, it is also possible to finance universal service obligations through other sources, such as amounts received through licensing procedures and allocation of new frequencies.

During a tender or auction for the allocation of new frequencies, a condition may sometimes be defined relating to amounts to be spent by applicants for the financing of the universal service or it can be determined that a portion of the amount paid for the acquisition of new frequencies will be used to finance universal service projects.

This option must not be confused with the condition (also typical) whereby the applicants in the procedure take on universalisation obligations themselves, such as, for example, contributions to the information society in a country.

More recently, possibilities have also arisen for financing through arrangements such as Public Private Partnerships (PPP) in specific projects[8], and there are already many success stories worldwide. According to data provided by ITU[9], the following cases may be referred to:

7. http://www.itu.int/en/ITU-D/Regulatory-Market/Documents/USF_final-en.pdf.

8. According to the ICT Regulation Toolkit, there are two reasons to justify this form of financing: (a) the recognition that the private sector may be better placed to provide certain services and (b) the need to ensure an element of public interest in these projects.

9. Developing Successful Public-Private Partnerships to Foster Investment in Universal Broadband Networks, 2012, ITU: http://www.itu.int/ITU-D/treg/Events/Seminars/GSR/GSR12/documents/GSR12_BBReport_Yardley_PPP_7.pdf

Source: Developing Successful Public-Private Partnerships to Foster Investment in Universal Broadband Networks, 2013, ITU[10]

Furthermore, there are also relevant experiences with the financing of communications networks for the development of local/municipal administrations, as in Brazil, a country where the State decided to implement the Digital Cities project, which aims to modernise management, expand access to public services and promote the development of Brazilian municipalities using existing technology.

In order to achieve these objectives, the program provides for: (a) the construction of optical fibre networks that connect local public authorities; (b) the availability of *e-government applications* to municipalities, in areas of finance, tax, health, and education; (c) the training of municipal employees for the use and management of the network; and (d) the provision of Internet access points for open and free use in busy public spaces, such as squares, parks and roads.

2.7 Management of funding mechanisms

The necessity of financing universal service obligations poses the question of *Who* should manage them and how, especially when this mechanism takes the shape of a compensation fund, as currently occurs in most situations.

In this context, the question of *Who* should manage the funding mechanisms depends largely on the nature of the compensation fund, that is, whether it is independent merely in terms of assets or an entity with legal autonomy.

Where there is merely autonomy of assets, its management tends to fall to the regulator in each country, given that, as a rule, the regulator will enjoy some degree of independence from the government and

10. http://www.itu.int/ITU-D/treg/Events/Seminars/GSR/GSR12/documents/GSR12_BBReport_Yardley_PPP_7.pdf

operators, and shall have the technical and regulatory skills necessary. Even in this scenario, it may be appropriate to provide mechanisms which ensure capacity for the task, particularly in terms of the availability of human resources to enable proper management of the fund.

In cases where the fund is constituted as a separate legal person, it is common for the board of directors and management to be appointed from the regulatory authority's own management, for the reasons set out above.

In any of the above cases, it is deemed important that the fund's management is properly qualified, whereas advisory bodies may also be set up to bring in different relevant entities from the sector and issue opinions on the fund's management and the projects to be financed.

As regards the question of *how* the compensation fund should be managed, there are some best practices that can be identified:

(i) Development of a policy or annual or multi-annual plan of activities to determine the areas of preferential activity;

(ii) Annual production of a report and accounts, subject to auditing;

(iii) Annual production of an activity report, setting out how the fund's sums and reporting on the universal projects given finance;

(iv) Where applicable, administrative costs should be kept to a minimum, so as not to influence the contribution obligations of operators and not detract from the fund's remit.

This is just some of the best practice relevant to management of the compensation fund of the universal service.

2.8 The Universal Service and user's rights

The universal service includes provisions or services which should be made available to the general population. The question arises, however, whether users have a *specific and individual right* to these provisions or if instead these rights are general rights, without a specific link to each user.

The answer can only be given, for certain, in the light of specific data for each legal system and will depend heavily on the scope of universal service and the manner by which it is made available. In general, the existence of an individual right depends on normative rules, where a particular advantage may be derived for a user, which can be activated at a given time. The existence of advantages for a majority of people which ultimately safeguard certain interests cannot constitute a right in itself, but a mere reflex or indirect protection.

As regards the provisions included in the universal service, in principle, the less specific the scope of universal service and the less regulated its provision, the more difficult it becomes to establish the existence of specific rights of users in relation to the provisions of universal service.

In addition, to establish the existence of a right, it is always important to consider what means of recourse are available to users in the event of any refusal to provide the universal service. Can they enforce their claim directly before the courts or do they depend on the intervention of a third party, such as the regulator, for the satisfaction of their claim? It is also important to understand the user's specific position in the relationship construed between the universal service provider and the regulator, i.e. whether protection is direct or merely reflexive.

Although the question appears merely theoretical, it may have significant practical impact. In fact, where it is deemed that users have a specific right to the provisions included in the universal service, any undue refusal can lead to damages which may be compensated through traditional legal means. However, where it is deemed that such a right does not exist and that protection is only reflexive or indirect, attributable to users in general, any form of reaction should be through the regulator.

In general, everything indicates that the regulation of the universal service existing in the majority of CPLP countries do not enshrine specific user rights, but merely lay down reflexive or indirect protection, which aims to safeguard certain important public interests, without assigning individual legal status to each user.

2.9 OTT and projects of universalisation

Recently, a movement has emerged, led by some OTT operators (*over-the-top*), such as *Facebook* and *Google*, seeking to eliminate certain digital asymmetries through specific programs to develop communication networks in rural or remote areas, or via the subsidisation Internet traffic, in the sense that the use of certain applications, usually accessed via smartphones, has no impact on the user's account balance.

A notable example in this respect is the Internet.org project, an initiative of *Facebook*, which brings together technology leaders, local communities and non-profit groups to connect two-thirds of the world with no Internet access. One of the projects already launched permits the availability of free basic access, through this programme's application, especially access to websites on health, employment and local information, at no cost in terms of mobile data. The application is available in countries of Africa, Latin America and Asia, and will be launched in more countries around the world.

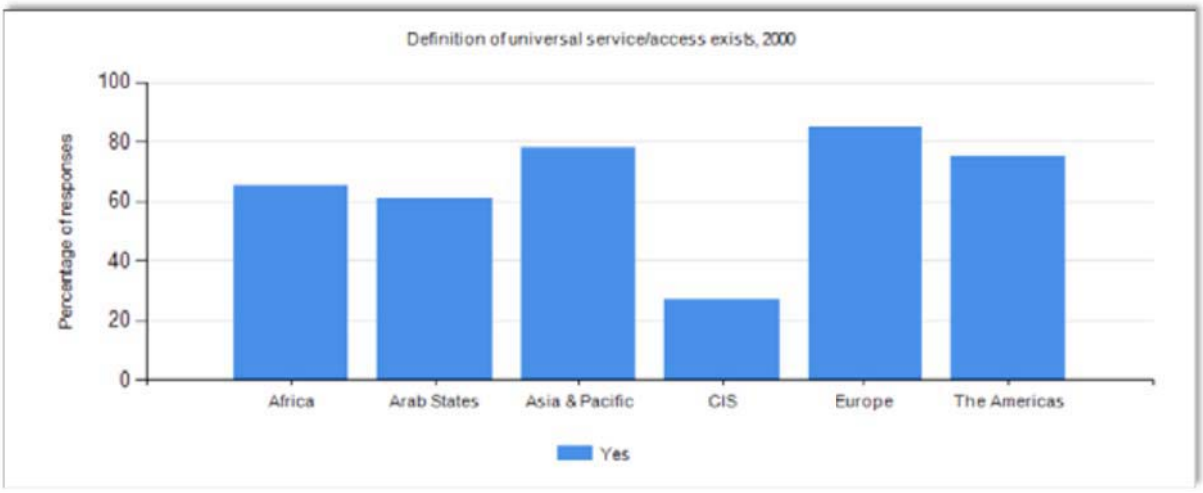
With a most commercial perspective, a number of examples are known in which the use of certain applications (*Facebook*, *Spotify*, etc.), do not incur any cost in terms of mobile data, which is specifically designed to encourage the use of these applications by users and thus create greater loyalty.

These initiatives can be included within the concept of the universalisation measures presented above with the difference that they are led by the private sector. Although relevant, such situations remain residual with minimal impact, and will not, therefore, be detailed in this study.

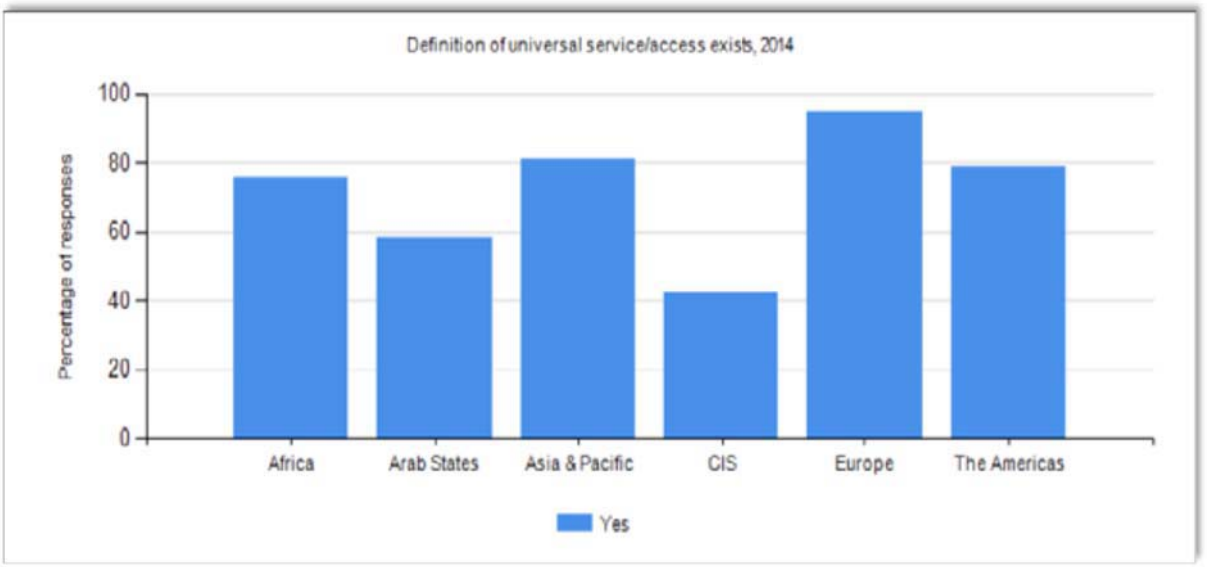
3. The Universal Service by regions

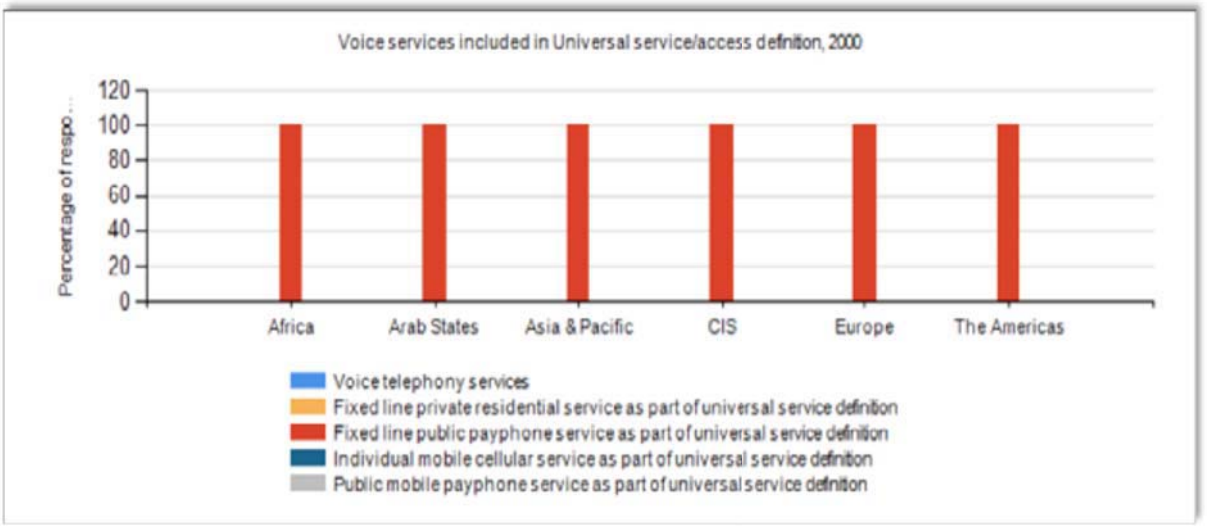
From the analysis, it appears that the large majority of countries have some concept or form of universal access or universal service in their legal systems. Furthermore, they are almost endless examples of universalisation projects and initiatives, and there are relevant cases in almost all countries in this area.

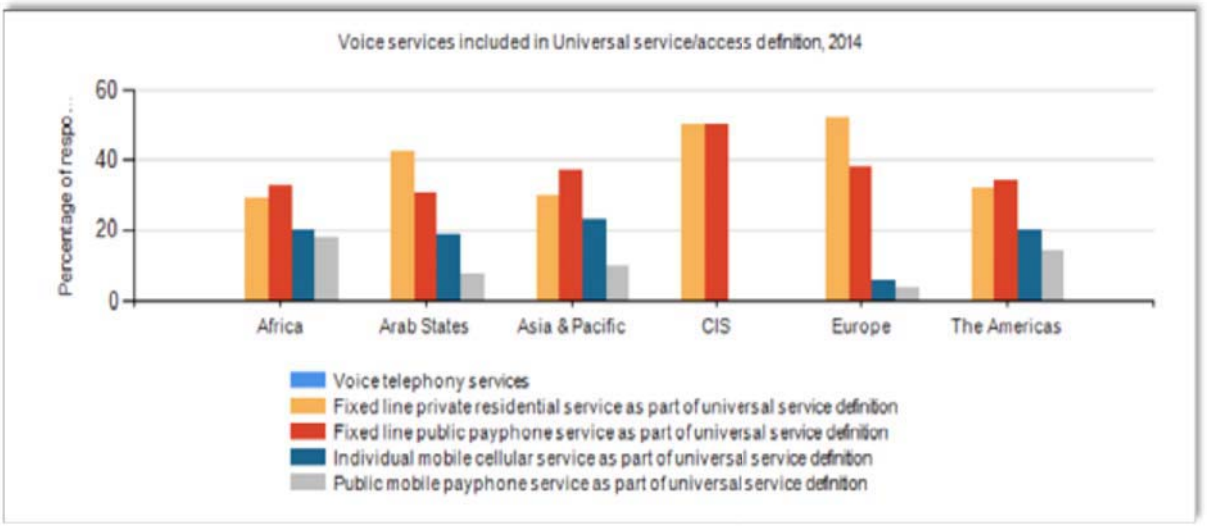
However, given the realities and distinct characteristics of each country, there are no detailed and current indicators on universal service in the different regions of the world. There is, however, an analysis from the ITU[11] from 2014 that allows some form of comparison:

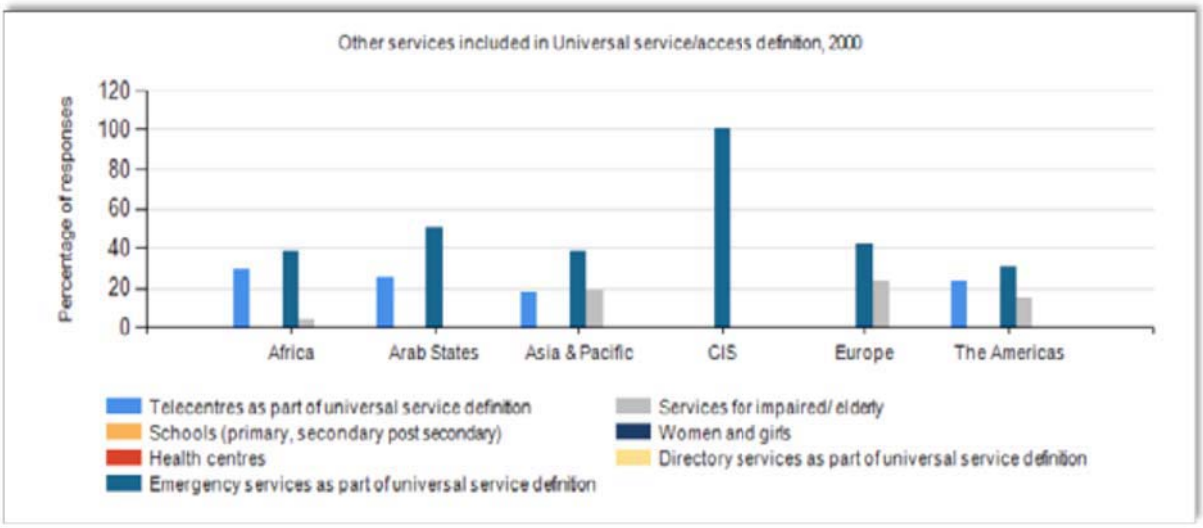


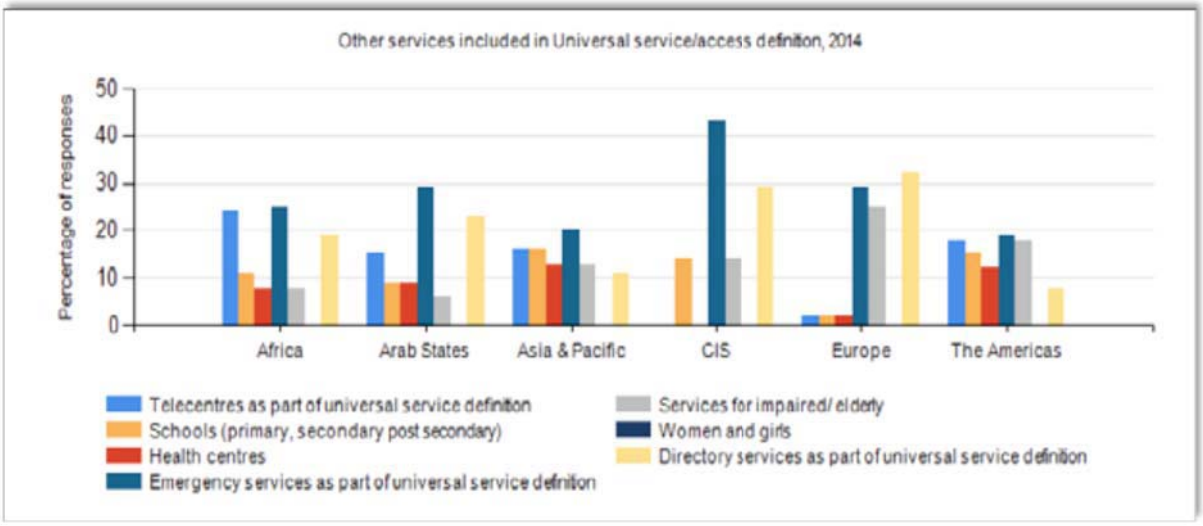
11. ITU World Telecommunications / ICT Regulatory Database 2014.











Source: *ITU World Telecommunications / ICT Regulatory Database, 2014*

The previous graphs provide some conclusions which are important to note here:

(i) Firstly, between 2000 and 2014, a significant increase was seen in the number of countries with a definition of universal access or service, which is growing evidence of the importance of this concept, especially in developing countries;

(ii) The services linked to the provision of services at a fixed location remain the majority, even though there is an increasing trend towards the inclusion of mobile services within the scope of the universal service, with a significant growth trend;

(iii) Calls to emergency services and services for people with special needs continue to fall within the scope of universal service with increasing relevance;

(iv) There is also a marked increase in the inclusion of other services, not necessarily related to telecommunications services, within the scope of the universal access service, particularly in relation to schools and health centres.

Since it is not the object of this study to analyse each country individually, it was considered appropriate and relevant to analyse the four major regions where the CPLP countries participating in this project are located, i.e. sub-Saharan Africa, Latin America, Europe (particularly the European Union) and Asia Pacific. It is also appropriate to consider the situation in the United States, which, as the European Union, has influenced various areas and countries in the world. The goal is to seek to understand, more precisely, the framework of universal service in these regions and then to derive more specific lessons for the countries of the CPLP.

3.1 Sub-Saharan Africa

As a result of its historical context (i.e. that, as States or Nations, many countries in sub-Saharan Africa emerged in the second half of the twentieth century), the region was strongly influenced by the European experience as regards the adoption of the concept of universal service into their law.

As a background, it should be noted that historically, Africa's telecommunications networks emerged to fulfil the communications needs of colonial administrations and, in small part, for some economic purposes, such as the implementation of telegraph services along railways, and as a result, there was no policy for the universal expansion of these networks. Moreover, in the period preceding independence, the telecommunications networks of many African countries were not interconnected, so international communications were conducted, for example, using rudimentary manual switching methods with little expression.

This situation did not change substantially in the post-independence period; however, in the 1970s and 1980s, the international community embarked on various cooperation initiatives for Africa's development, seeking cooperation in a set of projects aimed at expanding the region's telecommunications networks[12].

Because of the socio-political context in various sub-Saharan countries, in particular, situations of armed conflict which limited the State's capacity for intervention and action across the fullest extent of their territories, there was no implementation of policies aimed at universal access for the population until the mid-1990s.

Furthermore, owing to the geographical and economic conditions, including the very demographic conditions which stem from the capacity of existing infrastructure, population density in certain areas, access roads, etc., the expansion of fixed telecommunications networks is proving an onerous task that holds no appeal for market operators. Evidence of this fact persists today insofar as Africa remains the region of the world with the lowest penetration of fixed accesses.

It wasn't until the mid-1990s that significant changes were seen in the telecommunications sector with a substantial impact on the definition of policies aimed at providing universal access to networks and telecommunications services. These changes essentially entailed moves towards the sector's liberalisation and the emergence of new market operators, as well as the expansion of terrestrial mobile networks, which have reported rapid growth in penetration rates. So much so that the Africa region reports the most significant growth rates in mobile services.

In order to foster investment in ICT and access in remote areas, various sub-Saharan countries have adopted principles governing universal access, which seek primarily to enable access by populations located in uncompetitive or marginalised areas. As a rule, this responsibility falls to the governments and regulators, and while it is often accomplished by means of legal and regulatory rules, it is also accomplished by imposing universal service obligations in the licencing issued to operators intending to participate in the market.

As such, early examples of fixed universal service obligations in some countries in this region include[13]:

(i) Obligation of public network operators to provide services requested by users according to tariffs defined by geographical area;

(ii) Obligation of mobile operators to provide services with lower tariffs for certain categories of users, such as users on low incomes or in rural areas;

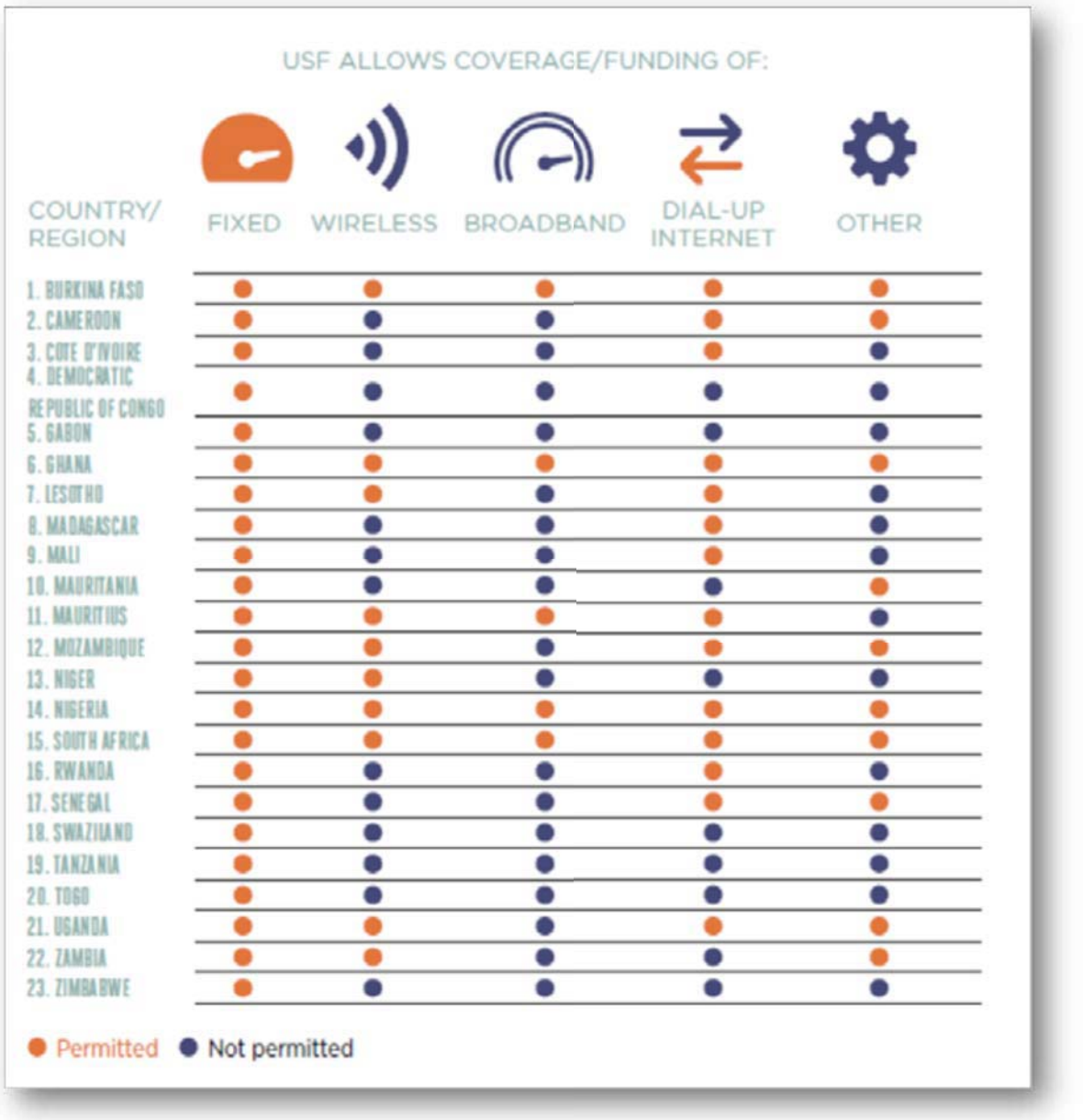
12. This cooperation was mainly led by institutions such as the ITU, UNDP, UNESCO, and implemented under the Bretton Woods Conference and through regional banks.

13. VdA analysis of publicly available information.

(iii) Obligation of operators with revenues above a certain threshold to make contributions to a fund for financing the universal service;

(iv) Network roll-out/development objectives in rural areas as specific conditions defined in operator privatisation processes or in the issuance of new operator licences.

Furthermore, as from the end of the 1990s and following the example started in Latin America, many sub-Saharan countries have already implemented funds to finance universal polices and projects, and have put them into operation.



Source: Sub-Saharan Africa - Universal Service Fund study, 2014, GSMA[14]

14. http://www.gsma.com/mobilefordevelopment/wp-content/uploads/2014/10/Sub-Saharan_Africa_USF-Executive_Summary-English.pdf

As regards the manner by which the universal service provider is designated, while the laws of some countries provide for designation by tender, in the majority of cases designation is made by the State through the conclusion of a concession contract. This is the case in most of the CPLP countries located in this region of the world, as illustrated in Chapter 5 below.

3.2 Latin/South America

Latin America is typically characterised by the inclusion of many rural areas, often with huge land area and very sparse population, many of which conform to the concept of remote areas, not only due to the physical distance that separates them from large urban centres, but also due to their insufficient coverage by telecommunications networks. Furthermore, this area of the world includes many developing countries, where the population's purchasing power is reduced. All this contributed to the existence of a digital divide between different geographical areas in the various countries of South America and the populations residing there, embodied in the lack of access to information society services.

In order to mitigate this gap, in Latin America, communications policies adopted in several countries sought to ensure universal access to basic telecommunications services. In many of the region's countries, this led to the provision of a telephone access to citizens (public or community) within a reasonable distance.

Several Latin American countries have defined innovative universal access policies[15], with their initiatives inspiring the definition of universal access/service policies in many countries of Africa and Asia. At the Second Summit of the Americas, held in 1998, the heads of state of various represented countries decided to define strategies to promote the expansion of telecommunications networks. Since then, all countries in the region[16] have adopted policies to promote universal access and service, often through initiatives based on private sector collaboration.

The most widely adopted policies entailed, in particular, the liberalisation of the telecommunications sector, the privatisation of former monopolies (with coverage obligations defined in the context of these processes) and opening the sector up to private investment, combined with the definition of regulatory policies. In almost all Latin American countries specific policies were promoted and strategies defined that aimed to increase universal access in remote areas and make it available to people on low incomes.

The various policies adopted essentially sought the implementation of funds to provide financing for projects to expand existing infrastructure, mainly aiming to ensure access to telephone services and in some cases also Internet access, with 85% of countries in the region adopting this model. About 14% of the region's countries, e.g. Cuba, Bolivia and Panama, opted to define universal service obligations imposed on the concessionaires of the telecommunications service[17].

In terms of universal service provider designation, this often occurs by assigning or granting concessions, as is the case of Brazil[18], and in the larger territories, there may be a number of different providers and different conditions associated with the provision of universal access or compliance with universalisation targets.

In recent years, in the context of the development of digital agendas and implementation of expanding infrastructure telecommunications projects, the countries of Latin America have imposed obligations on telecommunications operators with a view to the expansion of their networks to certain deprived geographic areas, in the context of spectrum licencing and payment of reduced fees.

Accordingly, in relation specifically to South America, countries such as Brazil, Chile and Colombia[19] are examples of where obligations of universalisation and expansion of access have been imposed[20] in return for granting of rights of use of radio spectrum.

15. Not only in the context of telecommunications, but also in the context of electricity and water supply networks.

16. Which includes the areas of North America, Central America, the Caribbean and South America.

17. VdA analysis of publicly available information.

18. Universal Service Fund Study, Ladcomm Corporation, GSMA, 2013, http://www.gsma.com/publicpolicy/wp-content/uploads/2013/04/GSMA-USF-Main-report-final.pdf

19. Universal Service Fund Study, Ladcomm Corporation, GSMA, 2013, http://www.gsma.com/publicpolicy/wp-content/uploads/2013/04/GSMA-USF-Main-report-final.pdf

20. In Brazil, in conceptual terms, the term universalisation applies only to the STFC concessionaires, as follows from the Plano Geral de Metas de Universalização (General Plan on Universalisation Targets).

For example, in Brazil, in the context of the auctioning of the 2.5 GHz frequency band, spectrum blocks in the 400 MHz band were included in the auctioned lots so that operators would be bound to provide coverage of rural areas with their networks. In Colombia, as part of spectrum auctions, obligations were imposed such as the distribution of tablets in schools, while in Chile operators were granted lower spectrum fees in exchange for the assumption of coverage obligations. Also, recent auctions in Colombia and Peru for the deployment of an optical fibre network with connectivity and capacity entailed coverage obligations with respect to municipalities and remote areas.

3.3 Asia - Pacific

In the Asia-Pacific region, the universal service development model has been much discussed at various international fora, and the need has been identified to create a common line of action that has so far been lacking.

Its non-existence is due, firstly, to the fact that the growth of telecommunications and its models of access differ greatly from region to region, especially because development in certain areas of Asia and the Pacific is currently exponential while lagging in other areas. Secondly, it results from the fact that the needs of countries in the region differ greatly; while it is possible to identify countries in which there are structured projects with active funds/financing of universal access or service, such as Australia, New Zealand, Japan, India, Thailand, Indonesia, Malaysia, Pakistan and Afghanistan, there also countries in which there are no universal service projects of any significance, such as the Philippines and Fiji.

In this sense, the scope of universal service cannot be characterised, as it was in the USA and the European Union, especially since in most countries this task is left to the responsible Regulator/Public Authority Public and accomplished through the design and implementation of projects.

As an example, in order to give a better understanding of the subject in this region, it is noted that in Afghanistan the universal service is developed through plans, with three projects currently ongoing: (a) services in rural and uncompetitive areas; (b) Internet service in public schools; and (c) services for people with disabilities and below the poverty line.

In Pakistan the universal service is also implemented through projects, which are, to date: (a) the provision of telecommunications in rural areas; (b) construction of optical fibre infrastructure; (c) broadband services in 284 identified cities; (d) the creation of telecentres set up for management by NGOs, local or development organisations and (e) projects for people with disabilities.

In the case of Vietnam, the scope was defined by objectives: 90% of villages/communities should have fixed telephone access, and 30% of villages/communities should have Internet access.

However, there has been an effort towards standardisation in these countries through meetings (including in 2015) of the ITU with their representatives, in order to create a coordinated policy or, at least, common guiding principles, goals to expand next generation services to all countries and within each country, including to rural/remote areas (with a special focus on broadband services), and to extend the cases of universal access into a concrete universal service, allocating resources needed for the implementation, development and monitoring of programmes and/or projects.

3.4 United States

The universal service concept was conceived in the USA in 1934, with the “Communications Act”, on the back of calls for a fast, efficient and global telecommunications service, available to all citizens, of specified quality and according to reasonable conditions of remuneration. With the 1996 amendment to the “Communications Act”, a set of principles governing universal service policy was enshrined into the law as follows:

(i) Promoting the availability of quality services at fair, reasonable and affordable prices to all consumers;

(ii) Development of universal access for advanced telecommunications services, such as broadband Internet access;

(iii) Promoting the availability of these services to all consumers, including those with lower incomes and those located in remote areas;

(iv) Increase access to telecommunications and advanced services in schools, libraries and rural health centres; and

(v) Ensuring that all telecommunications service providers make a fair and non-discriminatory contribution to the fund supporting universal service programmes.

In this context, the Federal Communications Commission (FCC) defined four universal service programmes that remain in place[21]:

(i) "Connect America Fund" programme[22] seeks to ensure that consumers located in rural areas or in unprofitable geographical areas in economic terms have access to communications networks (fixed or mobile), with sufficient capacity to provide voice and broadband services at prices which compare reasonably with those charged in urban areas;

(ii) "Lifeline" programme[23], in force since 1985, targets consumers with lower incomes and entails the offer of a discount on certain telephone services available throughout the country, initially on the fixed telephone service and since 2005 also on pre-paid mobile services. In 2012 the program was reformed and modernized by the FCT to adapt it to the new context of the market;

(iii) "Schools and Libraries" (E-rate) programme[24], related to the provision of telecommunications services (fixed and mobile voice and circuits) and Internet access to certain schools and libraries, including the provision of access equipment. Funding can be requested by schools or libraries which meet the application requirements, and financing discounts (between 20% to 90%) depend on the specific circumstances of the recipient and their location in urban or rural areas; The level of funding allocated by the FCC for this program has an annual limit of $3.9 billion, which was updated in 2014; and

(iv) "Rural Health Care" programme[25] aims to fund providers of healthcare and health services in the acquisition of telecommunications services and broadband necessary to increase the quality of their services in rural areas or communities. The funding provided for this program is $400 million annually.

These programs are funded wholly or partly by the Universal Service Fund, which is managed by an independent body — the "Universal Service Administrative Company" (USAC) — and there are a set of rules governing applications by active operators seeking to take part in projects.

The universal service fund is financed by contributions from telecommunications operators based on revenues, and it includes operators of fixed and mobile services, operators of voice and broadband services, etc.

Finally, by resolution of Congress in 2009, the FCC developed a National Broadband Plan which was published in 2010[26]. This plan aims to ensure the availability of access to data and broadband Internet services throughout the territory.

The National Broadband Plan is a long document, but the fundamental idea that underlies it is that broadband is the technology of the twenty-first century and, as such, should enjoy the same degree of universality as the voice service in the twentieth century. The Plan sets out an implementation schedule with various initiatives to stimulate economic growth, create businesses and empower citizens in the areas of education, health, security, etc. The Plan is based on four pillars:

21. More information about these programs can be found at: https://www.fcc.gov/encyclopedia/universal-service

22. https://www.fcc.gov/encyclopedia/connecting-america

23. https://www.fcc.gov/lifeline

24. https://www.fcc.gov/encyclopedia/e-rate-schools-libraries-usf-program

25. https://www.fcc.gov/encyclopedia/rural-health-care

26. More information at https://www.fcc.gov/national-broadband-plan

(i) Design policies to ensure robust competition, with a focus on the possibility of freeing up spectrum for free use and revision of competition rules in the wholesale segment;

(ii) Efficient use and allocation of scarce resources, with provision for the availability of 500 MHz of spectrum for broadband services within 10 years and the revision of rules to facilitate installation of new infrastructure;

(iii) Creating incentives for universal service and the mass roll-out of broadband, including the creation of various specific funds (such as the Connect America Fund and Mobility Fund) in order to finance new projects in this area, the expansion of the contribution mechanism for the universal service fund and the launch of a plan to promote digital literacy; and

(iv) Updating policies, defining standards and maximizing national priority policies, focusing on healthcare, education, energy and the environment, public safety and modernisation of State services.

3.5 European Union

The universal service development model in Europe followed a different path from that of the United States. Without seeking to present a detailed historical excursus on this issue, it should be noted that, unlike the United States, the European Union universal service always had a defined scope.

In the field of telecommunications, after a first legislative phase with special focus on defining the rules governing the sector's liberalisation (in particular Directive 90/387/EEC and Directive 90/388/EEC, both of 28 June 1990), the first directives on the issue of the universal service were Directive 97/33/EC of 30 June 1997 and Directive 98/10/EC of 26 February 1998.

In the latter directives, the concept of universal service is defined as "a defined minimum set of services of specified quality which is available to all users independent of their geographical location and, in the light of specific national conditions, at an affordable price". This definition covers the traditional features of the universal service that would shape all subsequent definitions. In Directive 98/10/EC, the universal service emerged with a closed scope, which is one of the features of this mechanism in the EU.

Currently, the concept of universal service, its scope and financing rules are laid down in Directive 2002/22/EC on universal service and users' rights relating to electronic communications networks and services of 07 March 2002, as amended by Directive 2009/136/EC of 25 November 2009. In terms of scope, Directive 2002/22/EC maintained the rules that resulted from Directive 98/10/EC and, therefore, the scope of universal service currently consists of:

(i) Offer of access to the public communications network at a fixed location and offers of telephone services, including functional Internet access;

(ii) Directories and directory enquiry services;

(iii) Availability of public pay-telephones; and

(iv) Measures for users with disabilities.

The scope of universal service is defined as a minimum, whereby Member States are free to impose measures besides those included within the scope of the universal service, although such measures may not be financed through contributions from operators.

The scope of universal service is periodically assessed by the European Commission based on three essential criteria which stem from Recital 25 of Directive 2002/22/EC:

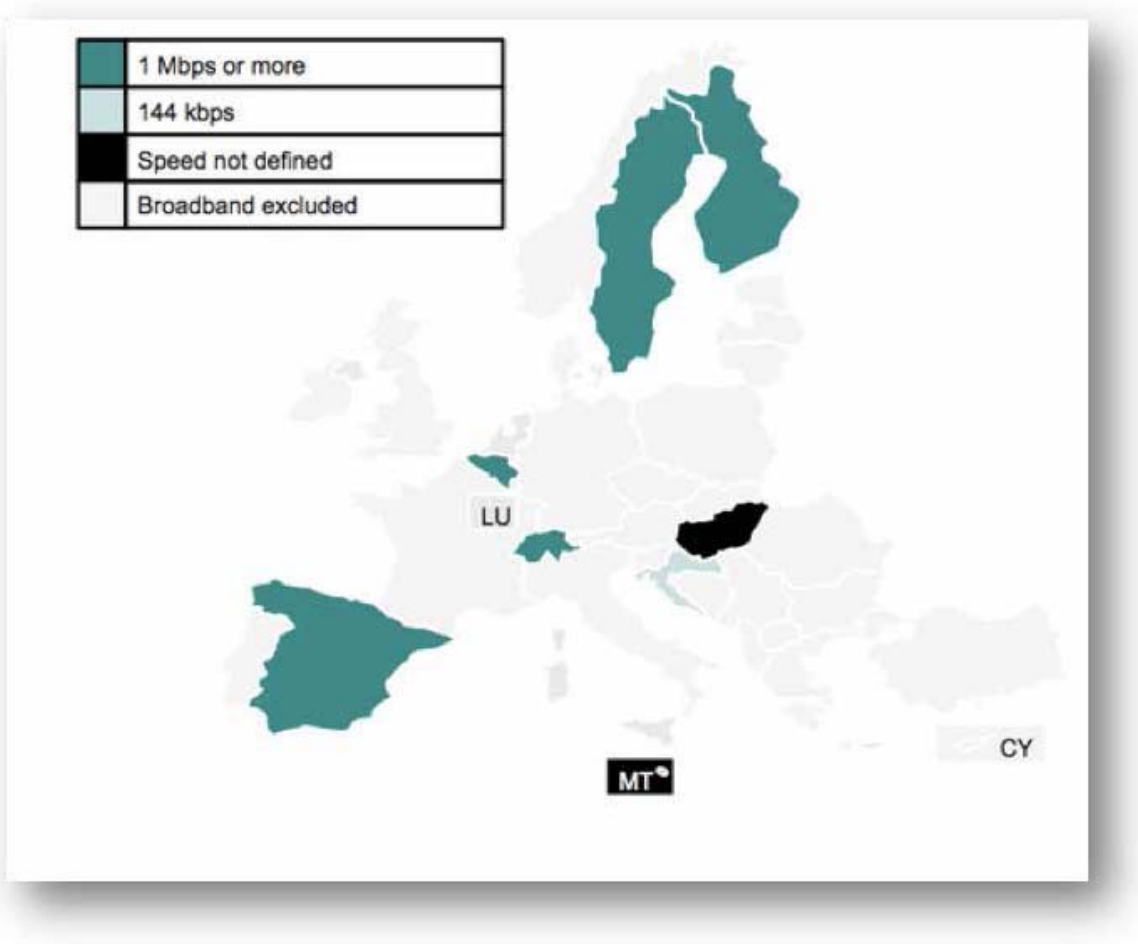
(i) Are services available, in terms of coverage and use, to a substantial majority of the population?

(ii) Is there risk of social exclusion for those who cannot access/afford the services?

(iii) Does the availability of this service reflect a general benefit for all consumers, with a necessity for public intervention?

Based on these criteria and in accordance with Article 15 of Directive 2002/22/EC, the Commission has completed periodic reviews of the scope of universal service (2006, 2008 and 2011), but none of these reviews changed the scope of universal service, particularly to include broadband access or mobile service. The Commission is currently preparing the fourth review of the scope of the universal service, which will focus on the impact of including a minimum quality broadband service within its scope.

However, as mentioned, it is possible for Member States to go beyond the scope set for the universal service, as is the case given that some states include broadband access as part of universal service, as is noted in the following chart:



Source: Analysis conducted by Cullen International, 2015

Countries such as Belgium, Finland, Sweden, Spain, Hungary and Malta have already included provision of the broadband access service within the universal service.

Another important feature of the universal service in the European Union is related to the form of provision. Unlike in the United States, where there is no operator designated, per se, to provide this service, in the European Union the most traditional approach is to designate one or more operators to ensure the availability of the provisions included in the universal service. However, there are some countries which

have not designated any specific provider, considering that the minimum provisions included within the scope of the universal service are already being made available efficiently and effectively by the market itself.

As a rule, universal service providers should be designated by means of a competitive procedure, although in some cases it is possible to designate an entity without recourse to this procedure, precisely because, as mentioned above, there is only one entity able to provide the services included in the universal service throughout a country's national territory. The following chart lists the European Union countries with designated universal service providers and shows the form of designation:

Source: Analysis conducted by Cullen International, 2015

As can be seen from the chart above, the financing of universal service obligations through a fund supported by the sector remains the most common mechanism in EU countries (e.g. Portugal, Spain, France, etc.). There are, however, alternative methods, such as financing through the State budget (e.g. the Czech Republic and Latvia) and funding through voluntary financing agreements (e.g. Austria).

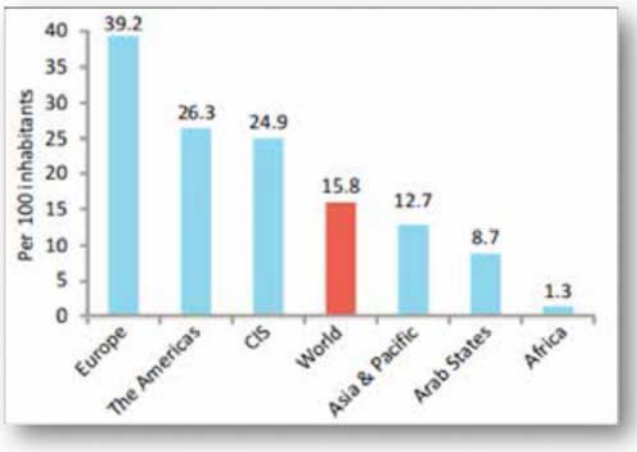
In any case, funding is dependent on the cumulative fulfilment of two conditions: (a) the conclusion that provision of the universal service represents an unfair burden on the respective provider and (b) the existence of net costs, which costs may be calculated using a specific methodology or indicated by the respective providers, provided that they are designated by a competitive procedure.

The non-fulfilment of these conditions makes funding unnecessary, which explains why the vast majority of EU Member States have not yet approved any mechanism to finance universal service obligations, as evident from the above chart.

3.6 Relevant general indicators

To end this chapter, it is important to make a brief overview of the main indicators of telecommunications services by region. This international context is relevant because it allows an understanding of the development phase of various telecommunications services in different regions of the world, therefore enabling a better understanding of the positive effects of universal service, while signalling options for future universal policies.

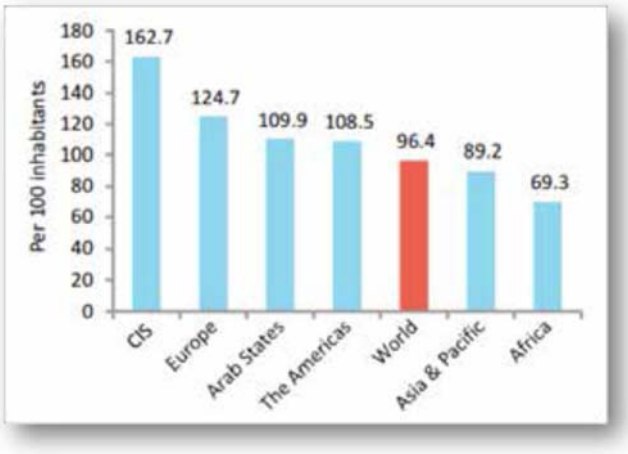
According to recent data from the ITU study "Measuring the Information Society Report"[27], penetration of the fixed telephone service in 2014 was reported as follows:



Source: Measuring the Information Society Report 2014, ITU[28]

As shown, as a result of universal service policies seen over the last decades in Europe — which, as mentioned above, especially focused on the fixed telephone service — this region continued to report the highest penetration rate, followed by the Americas. In the case of Africa, it is symptomatic to see that the penetration rate does not exceed 2 per 100 inhabitants.

As regards the penetration of mobile telephone services, there are significant changes, as illustrated in the following figure taken from the same study:



Source: Measuring the Information Society Report 2014, ITU[29]

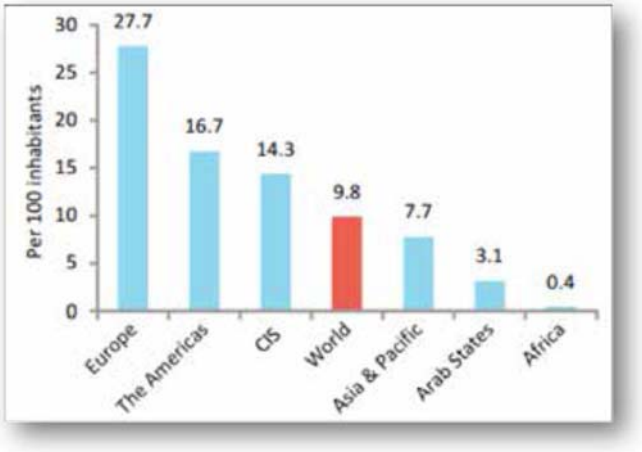
27. http://www.itu.int/en/ITU-D/Statistics/Documents/publications/mis2014/MIS2014_without_Annex_4.pdf

28. http://www.itu.int/en/ITU-D/Statistics/Documents/publications/mis2014/MIS2014_without_Annex_4.pdf

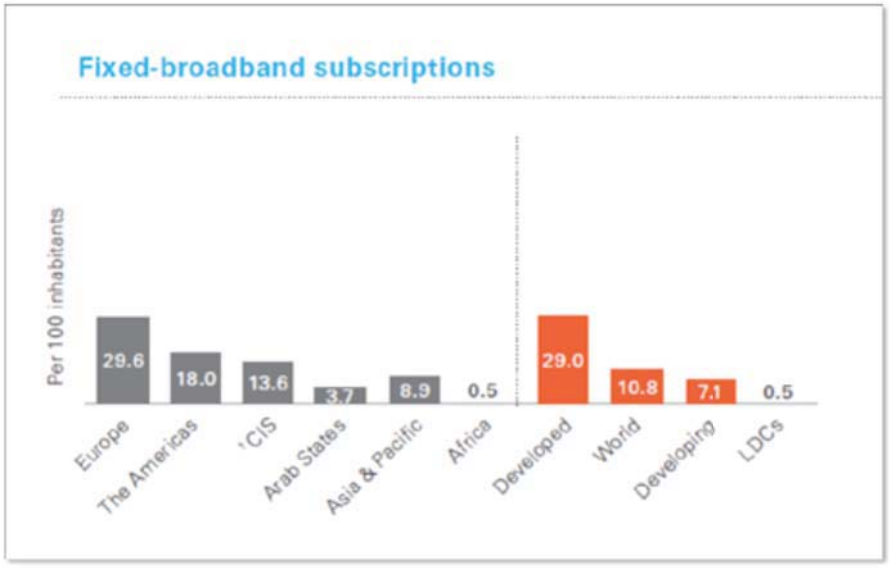
29. http://www.itu.int/en/ITU-D/Statistics/Documents/publications/mis2014/MIS2014_without_Annex_4.pdf

Europe continues to have a very high penetration rate in the mobile telephone service. The Asia-Pacific region is very close to the world average, and it is interesting to note that in Africa, the penetration rate in mobile services is almost 70%, which gives a good demonstration that the future of communications services on the African continent lies in the mobile segment.

In terms of broadband (fixed), the most recent statistics give the following indications:



Source: Measuring the Information Society Report 2014, ITU[30]



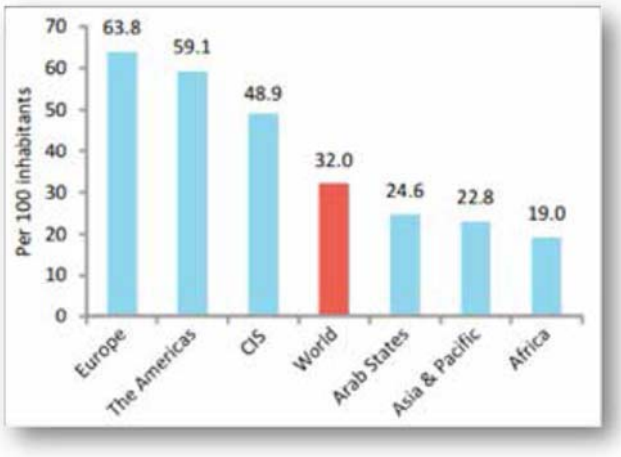
Source: ICT Facts & Figures 2015, ITU[31]

Penetration rates in this service, even in Europe and the Americas are much more modest than in the case of the fixed telephone service, which may be explained — at least somewhat — by the fact that the service is relatively recent and that availability of broadband (fixed) does not generally fall within the scope of universal service.

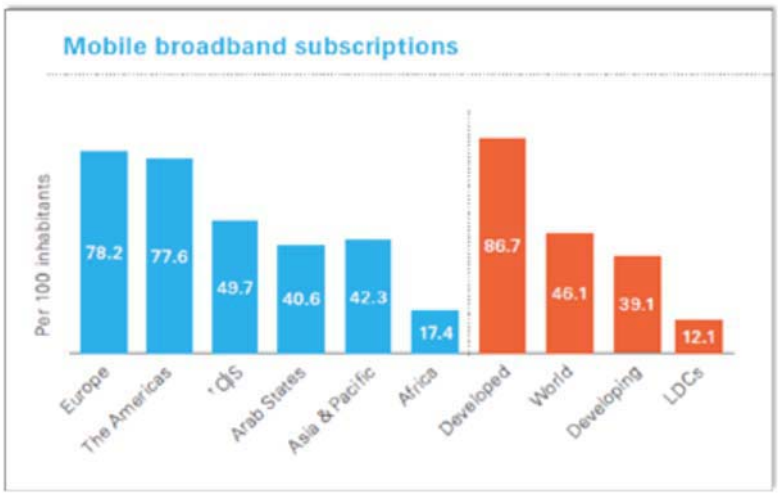
30. http://www.itu.int/en/ITU-D/Statistics/Documents/publications/mis2014/MIS2014_without_Annex_4.pdf

31. http://www.itu.int/en/ITU-D/Statistics/Documents/facts/ICTFactsFigures2015.pdf

Finally, as regards mobile broadband, existing indicators are more encouraging:



Source: *Measuring the Information Society Report 2014, ITU*[32]



Source: *ICT Facts & Figures 2015, ITU*[33]

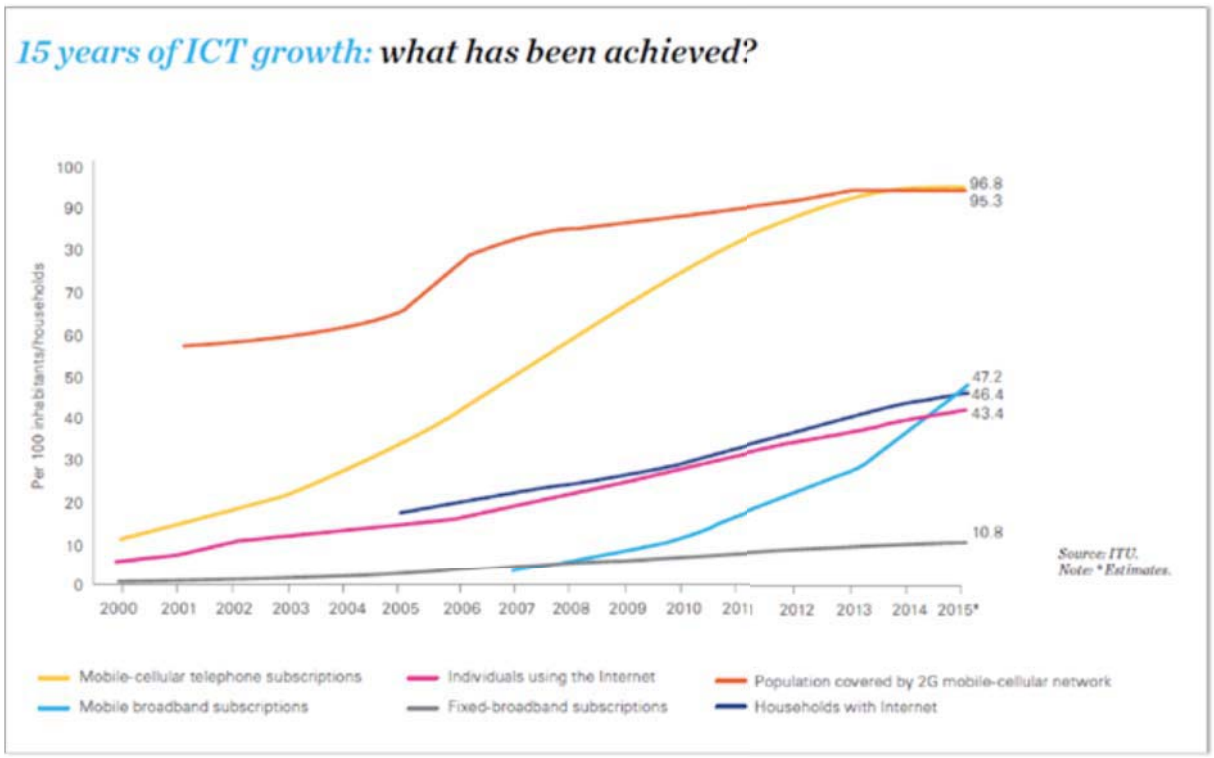
There has been strong growth in mobile broadband, with African countries habitually reporting high penetration rates. According to the latest data from the ITU, Africa leads in the growth of mobile broadband with an increase from 2% to 17.4% in less than four years.

Interestingly, the growth in mobile broadband continues at a sharp rate, rising to 2.3 billion users, with about 55% of users in developing countries, five times more than in 2008. Overall, the penetration of mobile broadband was 47% in 2015, a figure that has increased 12 times since 2007.

Furthermore, according to ITU data, the mobile broadband market continues to be the market segment with the highest growth (double-digits), and this growth is stronger in developing countries than in developed countries, as shown in the following chart:

32. http://www.itu.int/en/ITU-D/Statistics/Documents/publications/mis2014/MIS2014_without_Annex_4.pdf

33. http://www.itu.int/en/ITU-D/Statistics/Documents/facts/ICTFactsFigures2015.pdf



Source: *ICT Facts & Figures 2015, ITU*[34]

4. International trends

In terms of international developments, with relevance and impact on universal service, the following documents and projects should be given particular mention:

The World Summit on the Information Society Objectives

This conference first took place in Geneva (2003) and its work culminated in Tunis (2005), focusing on issues related to the information society, ICT development and digital inclusion. This conference resulted in two statements of great importance to universal service:

(i) recognition that access to communications is necessary to achieve basic human rights; and

(ii) the need to develop special measures to provide such access to groups of people in greatest need, particularly those living in rural areas and people with disabilities.

This conference also resulted in the ITU's "Connect the World" project[35], which aims to ensure global connectivity to any community in 2015.

The Millennium Development Goals

This United Nations project set up eight goals for the new millennium:

(i) Eradicate extreme hunger and poverty;

(ii) Achieve universal primary education;

34. *http://www.itu.int/en/ITU-D/Statistics/Documents/facts/ICTFactsFigures2015.pdf*
35. *http://www.itu.int/en/ITU-D/Partners/Pages/Connect/ConnectTheWorld.aspx*

(iii) Promote gender equality;

(iv) Reduce child mortality;

(v) Improve maternal health;

(vi) Combat HIV/AIDS, malaria and other diseases

(vii) Ensure environmental sustainability;

(viii) Global partnerships for development.

Criterion 8F of the 8th goal has particular relevance to the present study[36], which determines the need to make the benefits of new technologies universally available, especially in the area of ICT. Among the indicators presented, emphasis should be given to the importance of the Internet and mobile broadband use as a mechanism to achieve the goals of the new millennium.

EU Digital Agenda

In the European Union, the idea of a common approach was discussed and structured through a single digital strategy for Europe[37]. This strategy is based on seven pillars of the Europe 2020 Strategy[38], which established the growth objectives of the European Union and its main focuses. The main objective is to create inclusive growth that is also efficient and sustainable in the digital domain.

These pillars are:

- *To accomplish a true Digital Single Market* through increasing quality of services available in any country of the European Union, referred to in the digital agenda as a means of stopping geo-blocking. This pillar seeks to bring content and knowledge sharing, to develop the information society in Europe;
- *Improving interoperability between systems and technical standards*;
- *Strengthening security and trust online*. This pillar aims to focus primarily on combating cybercrime, illegal content and security incidents and data breaches;
- *Promoting fast and ultra-fast internet access*. This pillar is based on the need to achieve competitive pricing and to expand next generation networks across the European Union. In fact, given the importance of this pillar, the European Commission is channelling some of its funds through different instruments, into broadband infrastructure investment;
- *Investment in research and innovation*;
- *Promoting literacy, skills and digital inclusion*. It is recognised in this pillar that although the Internet is central to the lives of the majority of the population, a significant percentage does not have Internet access. Furthermore, given the challenges of the digital age, Europe currently lacks skilled professionals in this sector. As such, in order to promote this pillar, the strategy is to create a partnership between various stakeholders in order to facilitate cooperation between companies, providers of service in the area of education, public and private agents, for the purpose of establishing measures attracting young people into ICT training and training for unemployed people. Additionally, in order to overcome unequal access to digital literacy, Member States now have an obligation to promote electronic accessibility, including for people with special needs;

36. http://www.un.org/millenniumgoals/global.shtml

37. Previously, note should be made of the Ministerial Declaration of 2006 on e-inclusion, which focused on the use of ICT to achieve wider objectives of integration and inclusion. This Declaration relates to the participation of all individuals and communities in various aspects of the information society and seeks to reduce gaps and imbalances in the use of ICT to overcome situations of exclusion, promote economic development, create more jobs, improve quality of life, cohesion and social integration.

38. Approved by the Commission Communication of 06.05.2012 — COM (2015) 192 final.

– *Benefits of ICT development for European society*. Information technologies have enormous potential to improve the lives of populations and to address a range of social challenges and inequalities. The EU Digital Agenda is focused on the capacity of ICTs to reduce energy consumption, reduce isolation of the aging population and respond to their needs, revolutionise access to health services and health services themselves and improve delivery of public services.

Given the above, it can be concluded that the European trend evidently entails the expansion of existing infrastructure and incentives for the creation of necessary platforms, mainly to allow the population access to the resulting services, to enable a digital single market and a situation of global inclusion. At the European level, existing plans seek to promote widespread access to broadband services and thus allow a transfer of information which improves the existing services but, above all, prevents exclusion and boosts economic development by creating employment, improving social integration, cohesion and quality of life of citizens of EU Member States.

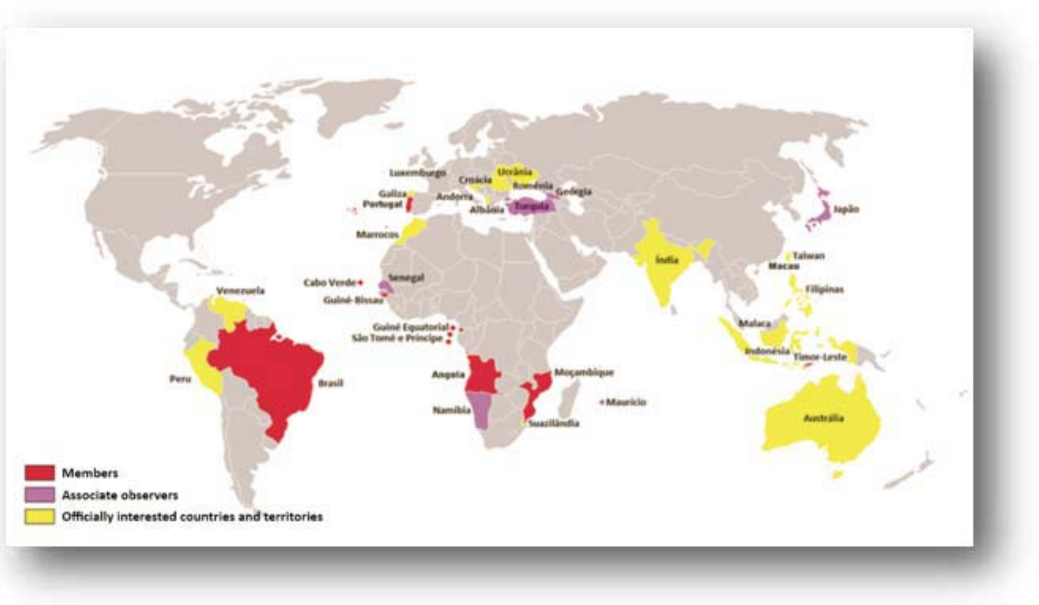
5. The Universal Service in the CPLP and in Macau, China

5.1 CPLP and ARCTEL

In July 1996, in Lisbon, a Summit of Heads of State and Government was held, marking the creation of the Community of Portuguese Language Countries (CPLP), an organisation that brings together Angola, Brazil, Cabo Verde, Guinea-Bissau, Mozambique, Portugal and São Tomé and Príncipe. Six years later, on 20 May 2002, with the recognition of its independence, Timor-Leste became the eighth member country of the Community. In 2014, Equatorial Guinea became the CPLP's ninth member.

The CPLP was a new political project whose foundation is the Portuguese language. This unitary factor, on the world stage, has given basis to joint action which is increasingly significant and influential. The general objectives of the CPLP are based on political coordination and cooperation in social, cultural and economic matters. To achieve these objectives, the organisation has promoted systematic coordination of the activities of public institutions and private entities engaged in increasing cooperation among its Member States.

In addition to its members, the CPLP has six associated observers: Georgia (2014), Japan (2014), Mauritius (2006), Namibia (2014), Senegal (2008) and Turkey (2014). There are also currently about ten countries seeking membership as observer members of CPLP, as shown below:



In the area of telecommunications, the cooperation of CPLP countries was strengthened in October 2008 with the establishment of ARCTEL - Associação de Reguladores de Comunicações e Telecomunicações da Comunidade dos Países de Língua Portuguesa (Association of Communications and Telecommunications Regulators of the Community of Portuguese Speaking Countries), a permanent forum for the exchange of information in the context of communications sector regulation.

ARCTEL has as a goal of cooperation in the communications sector between the countries of the CPLP. In this context, ARCTEL aims to strengthen the historical bonds of friendship and cooperation, the development of economic and business cooperation among its members through the definition and implementation of projects of common interest, to help create an institutional and regulatory environment conducive to strengthening sector cooperation and to be a stimulus for innovation and the development of communications.

According to its statutes, ARCTEL's main functions are:

(i) Promote the exchange of information in the context of its members' regulation of the sector's markets;

(ii) Constitute a forum for consultation and reflection;

(iii) Promote the adoption of best practices and harmonisation of sector regulation;

(iv) Promote analysis of strategic policy and regulatory issues in the sector;

(v) Develop studies and adopt positions on issues of common interest;

(vi) Analyse, coordinate and defend the interests of its members, seeking to create and defend common positions at international fora, within its respective competences;

(vii) Foster the exchange of staff and technicians between members, as well as the conduct of institutional visits between members;

(viii) Analyse issues relevant to the development and universalisation of communications and telecommunications services, in particular for members with most need or members which have recently been constituted; and,

(ix) Promote contacts and cooperation activities with other similar organisations.

5.2 Regional context

This point is intended as a brief review of the development policies pursued in the field of telecommunications in the different countries of the CPLP, taking into account the particularity of the respective Member States falling under the purview of different communities for economic development, given their geographical location[39]. In fact, according to the map below, each CPLP member country is part of a different economic organisation:

This analysis may help understand the priorities of each country in the development of the telecommunications sector, and signal the harmonisation needs that may be relevant in the ARCTEL framework.

Starting with **Angola** and **Mozambique**, it is important to point out that these countries are part of the SADC (Southern African Development Community), established on 17.08.1992 in Windhoek, Namibia:

39. The list of the international economic organizations in which the Member States of the CPLP are included is not exhaustive.

The objectives of SADC are to achieve development, peace, security and economic growth in its member states, through the development of strategic protocols and plans, such as the Regional Infrastructure Development Master Plan, 2012, focused on ICT. This plan, holding ICT access as a fundamental right, seeks to set out a raft of appropriate measures to ensure access to this fundamental right in each Member State, setting the year 2027 as a goal to achieve a digital SADC.

The plan's priorities entail ensuring better use of available infrastructure, including optical fibre backbones, extending their reach to cover more people and establish more reasonable pricing. In the first line, there are three important issues covered under this plan:

(i) Access to the electromagnetic spectrum for spread of broadband connections, reducing high licensing costs for use of the spectrum and ensuring availability of the best frequencies for broadband;

(ii) Access to optical fibre backbones by operators at market prices, to increase national network coverage and cross-border connections;

(iii) Opening up of markets and licensing for operators in the development of infrastructure in the area of ICT, increasing competition and encouraging investment in the intermediate and complementary phases to ensure the efficiency of services.

In the context of universal service, of particular note is the study *SADC Toolkit on Universal Access Funding and Universal Service Fund Implementation*, 2011, created under the HIPSSA framework (Harmonisation of ICT Policies in Sub-Saharan Africa). The report warns of the need to extend universal service to all SADC countries, especially in rural areas. Although the States are at different stages of growth, this report emphasises that all are able to liberalise their markets in telecommunications.

Meanwhile, **Brazil** is a member of MERCOSUR (Southern Common Market), established under the regional integration process which started on 26 March 1991 with the signing of the Treaty of Asunción by the governments of Argentina, Brazil, Paraguay and Uruguay:

In telecommunications, the Mercosur Digital project was created, in conjunction with the EU, with the aim of promoting technological training in specialised ICT resources and create the necessary conditions in order to develop an effective e-commerce sector, strengthening the digital economy and working for a structural symmetry between the four countries.

The project's main focus was on the areas of electronic commerce, continuing education, development of micro, small and medium-sized enterprises and themes of the Information Society, on two prongs:

(i) Electronic commerce — creating a common regulatory framework and technological infrastructure framework in MERCOSUR, with regard to digital certification, public key infrastructure, data protection for transnational negotiations and development of a common platform for the sale of products and services focused on micro, small and medium-sized enterprises; and

(ii) Continuing education — implementation of a virtual training network integrating the bloc's member states, taking advantage of existing institutional capabilities and ties to enhance skills and knowledge in ICT in the public and private sectors.

The results of the project were reported in 2013 and seem to be very positive, contributing to the rise of these countries from a technological point of view and allowing the performance of secure and efficient e-commerce in MERCOSUR. However, the main improvements took place in other countries (Argentina, Uruguay and Paraguay), since Brazil already had the necessary infrastructure to promote business on the Internet in MERCOSUR. However, this project has greatly contributed to improved integration between MERCOSUR countries in the area of ICT.

Nevertheless, within the scope of universal service, there no known initiative which seeks to achieve regulatory harmonisation within the MERCOSUR framework.

Cabo Verde, **Guinea-Bissau** and **Equatorial Guinea** are part of the CEDEAO (Communauté Economique des Etats de l'Afrique de l'Ouest) or ECOWAS (Economic Community of West African States), established in May 1975 by the Treaty of Lagos:

Within ECOWAS, a number of reforms have been carried out in the area of telecommunications, so that, by 2013, 11 of the countries along the coastline were linked to submarine cables. Ministers responsible for this area also adopted a protocol for the introduction of Digital Terrestrial Television (DTT) in ECOWAS countries.

Another important component of the programme relates to the implementation of the ECOWAS Wide Area Network (ECOWAN), and the creation of common operational rules for telecommunications infrastructure and services in the ECOWAS region.

São Tomé and Príncipe is not part of any economic community and was the last Portuguese-speaking African country to institute a regulatory authority, which, in addition to the communications sector also regulates energy and water. The case of **Timor-Leste** is similar, although it is an observer member of the Association of Southeast Asian Nations (ASEAN)[40].

Finally, **Portugal** is a Member State of the EU, which currently has 28 members, as shown in the following chart:

As already mentioned, in terms of universal service, currently, the most important instrument is Directive 2002/22/EC which sets the minimum scope of the universal service for the EU and the rules governing designation of the providers and their funding.

Among other things, this Directive aims to ensure the availability of affordable good-quality services to the public throughout the EU and to address situations where the needs of end-users are not satisfactorily met by the regular functioning of the market. However, as referred to above, there are EU countries which go beyond the minimum set of services stipulated in this Directive.

In terms of relevant projects of universalisation, see above with reference to the Digital Agenda for Europe.

40. Current ASEAN members are Thailand, The Philippines, Malaysia, Singapore, Indonesia, Brunei, Vietnam, Myanmar, Laos and Cambodia.

5.3 Analysis of the Universal Service in CPLP countries and in Macau, China

This chapter seeks to present the current state of the universal service in the various countries covered.

To this end, a socio-economic characterisation is made of the various countries considered under this study, together with analysis of the electronic communications market, indicating the sector's level of development, principal entities with intervention in the market's regulation and oversight, main services offered in the various countries, penetration levels of these services, as well as information about the existence of international interconnection and capacity available for the provision of broadband services.

Based on publicly available information and information provided by the respondents to the prepared questionnaire, a description is given of the specific regulatory framework governing universal access or service in CPLP Member States. The information is given in summary form in the various tables below, and also supplemented with more detailed information in the relevant chapter for each country.

It is also intended to contrast the prevailing regulatory framework with framework of actual provision of universal service, in order to make it possible to determine the forms in which the regulatory framework has been subject to effective implementation.

5.3.1 Angola

5.3.1.1 General data on the country and the electronic communications sector[41]

41. Data taken from the World Fact Book *and corresponding generally to estimates from 2014 and Observatory of ARCTEL-CPLP (2012 data), ARCTEL-CPLP 2012 Communications Yearbook, from MTTI/SIMTIC - data from the last Census of February 2015 and the research carried out by the VdA.*

Electronic Communications Sector

General information

The Republic of Angola is a country on the coast of West Africa, whose main territory is bordered to the north and northeast by the Democratic Republic of Congo, to the east by Zambia, to the south by Namibia and to the west by the Atlantic Ocean.

Official language: Portuguese

Total area: 1,246,700 km^2

Population: 24.3 million (Census 2014)

GDP (per capita): USD 8,185.00 (estimated 2014)

Major International Organisations[42]: CPLP, Southern African Development Community (SADC), Economic Community of West African States (ECOWAS), Economic Community of Central Africa States (ECCAS) African Union, ITSO (International Telecommunications Satellite Organization), RASCOM (Regional African Satellite Communication Organization), UN/ITU.

Overall Assessment: The communications sector in Angola is very dynamic, with huge potential in the mobile segment. INACOM and the Ministry of Telecommunications and Information Technologies are currently preparing a set of measures and strategic plans that will certainly be important prongs of the market's growth.

National communications: The fixed market currently has three main players: Angola Telecom (Concessionaire of the Public Telecommunications Service and undertaking responsible for managing the core network, Mercury/MSTelcom and Startel. The fixed market is unanimously recognised by all stakeholders as one of the markets where most intervention and investment is needed, in particular, to ensure better coverage of services and the existence of infrastructure to ensure quality of service.

The mobile market in Angola has experienced significant growth and is disputed by two operators: UNITEL and Movicel (UNITEL with over 70% market share).

Penetration rates (2015 data):

- Fixed telephone service: 1.12%
- Mobile service: 56.8%
- Internet: 15.1%
- Fixed broadband: 3.300 (2012 data)
- Mobile Broadband: n.a.

International communications infrastructure: Angola is served by four submarine cables: WACS ("West Africa Cable System"), ACE ("Africa Coast to Europe"), ADONES ("Angola Domestic Network System") and SAT-3/WASC. SACS ("South Atlantic Cable System") is under construction and is expected to be completed in 2016.

Capacity to offer broadband services (fixed and mobile): there is not yet optical fibre capacity installed nationally for the offer of fixed broadband services and radio spectrum has not yet been made available for the offer of 4G. It is expected that a 4G auction will be conducted during 2015. Additionally, UNITEL already makes mobile internet broadband available in large urban centres (on phones and pens/routers), and Movicel also offers 3G internet on mobile phones. meanwhile, TV Cabo Angola has optical fibre offers in Luanda and Benguela.

42. Not exhaustive.

5.3.1.2 Legislation / regulations with relevance to the characterization of universal service and universalisation projects

Angola - Relevant Legislation	
Scope of Universal Service	
Law no. 23/2011 of 20 June	Approves the Lei das Comunicações Eletrónicas e dos Serviços da Sociedade da Informação (Electronic Communications and Information Society Services Law), which sets out the relevant rules on Universal Service
Presidential Decree no. 225/11 of 15 August	Approves Regulamento Geral das Comunicações Eletrónicas (General Regulation of Electronic Communications), which determines the scope of the Universal Service
Financing	
Presidential Decree no. 261/10 of 26 November	Approves the Regulation governing FADCOM - Fundo de Apoio ao Desenvolvimento das Comunicações (Communications Development Support Fund)
Order no. 2656/13 of the Ministry of Telecommunications and Information Technologies	Indicates the members of the Board of Directors of FADCOM
Other Relevant Legislation/Documents	
Presidential Decree no. 166/14 of 10 July	Approves the Regulamento de Partilha de Infraestruturas de Comunicações Eletrónicas (Electronic Communications Infrastructure Sharing Regulation).
Presidential Decree no. 243/14 of 9 September	Approves the Organizational Statute of Instituto Angolano das Comunicações (INACOM), Public Institute of the economic or productive sector, created to regulate, supervise and oversee the market for electronic communications, defining its powers and regulating its organisational structure, the management of its assets and finances and personnel, and repealing Decree no. 115/08 of 7 October, which approved the previous Statute.
PNSI - Plano Nacional da Sociedade da Informação (National Information Society Plan) 2013-2017	Revises and updates the Action Plan for the Information Society developed in 2005 by the Government of Angola. The Plan aims to increase the impact of ICT on economic and social development to promote an inclusive country whose citizens are connected to the world, have access to education and health and have opportunities to develop their ideas and personal and professional skills.
Plano Nacional das Telecomunicações Rurais (National Rural Telecommunications Plan) - in preparation	Aims to bring electronic communications services to rural populations living in remote areas.
PEGE - Plano Estratégico para a Governação Eletrónica (Strategic Plan for Electronic Governance) 2013-2017	This plan presents the vision and strategy for the use of ICT as a tool for better governance in Angola.

5.3.1.3 Legal and regulatory framework governing the universal service and ongoing projects

Concept and Scope of the Universal Service

The universal service is defined in law as the minimum set of electronic communications services, including Internet services of specified quality, available to all users, regardless of their geographical location and, depending on national conditions, at an affordable price.

The minimum set of provisions which are to be available in the context of the universal service is as follows:

(i) Connection to the public telephone network and access to publicly available telephone services, through fixed or mobile terminals

In this context, universal service providers should meet all reasonable requests for connection to the public telephone network and access to publicly available telephone services, which should cover the following services: (i) connect and use appropriate terminal equipment, (ii) receive and make local, national and international calls, (iii) establish facsimile communications and (iv) establish data communications with sufficient speed for functional Internet access.

(ii) Access to Internet services

(iii) Providing a directory enquiry service

In this context, the universal service provider is required to make available to the public, through a short number with nationwide coverage and at an affordable price, a directory enquiry service with information on geographic subscriber numbers.

(iv) Provision of public pay-telephones

The provision of the universal service covers the sufficient and adequate provision of public pay-telephones.

Public pay-telephones to be made available by universal service providers must (i) allow free calls to emergency numbers defined in the National Numbering Plan, (ii) allow local, national and international calls, including calls to the directory enquiry service (iii) be available throughout the day, with minimum sufficient lighting during night hours, (iii) be sited in a visible place, with adequate and updated information on the basic conditions governing use of the service including applicable prices, (iv) have adequate security measures against vandalism and against misuse, with a guarantee of periodic maintenance of equipment and facilities, and (v) return the balance available at the end of the communication when this has been paid for using previously deposited coins.

(v) Adoption of special measures for users with disabilities

Universal service providers should make specific offers available in order to ensure that users with disabilities have access, on an equivalent basis with other users, to the public telephone network and publicly available telephone services, including access to public pay-telephones.

The specific offers may, inter alia, consist of the following: (i) provision of telephones and public pay-telephones with text or equivalent measures for people with hearing or oral communication disabilities, (ii) provision of directory enquiry services free of charge to blind or visually impaired people, (iii) provision of detailed billing in alternative formats upon request for people with visual impairments.

The Electronic Communications Authority may determine that other provisions be incorporated into the universal service.

Implementation of the guiding principles of universal service

The universal service is governed by the principles of objectivity, transparency, non-discrimination and proportionality.

The specific objectives of public intervention in the electronic communications sector comprise provision of the universal service throughout the national territory and the continuous adjustment of its scope to the technological, social and economic reality of Angola at all times.

Universal service providers and provider designation mechanisms

Under the law, the universal service may be provided by more than one undertaking, whether with distinction between the provisions that form part of this service or distinction between geographical areas of provision.

The process of designating the universal service providers is to be efficient, objective, transparent and non-discriminatory, ensuring that, in principle, any company can be designated.

The procedure for designating the universal service providers can be through competitive or comparison procedure, separately for each provision or combining some or all provisions if more efficient and effective in economic and technical terms.

The terms of the process shall, among other things, comply with the conditions set in the law on the scope and concept of universal service, provide quality of service and ensure an economically efficient and legally effective offer throughout the national territory, as well as mechanisms to adapt and review the

scope of the universal service in accordance with technological developments. The terms of the process shall also set out time periods and conditions governing the renewal of the licence to be allocated and the applicable technical, financial and legal conditions.

Notwithstanding the provisions of the law, there seems to be a tendency towards the development of the universal service based on three essential pillars: imposition of coverage obligations on mobile operators and Angola Telecom, the financing of specific projects through FADCOM and the promotion of infrastructure-sharing.

Universal service financing

The financial support to ensure the provision of universal service is provided by FADCOM — Fundo de Apoio ao Desenvolvimento das Comunicações (Communications Development Support Fund), which is financed by (i) a share of INACOM's revenues, as established by order of the Electronic Communications Authority, (ii) revenues derived from the annual financing of publicly available electronic communications operators, (iii) the product of interest rates on bank deposits and other investments, (iv) revenues obtained from loans and revenues from FADCOM, (v) the balances from previous financial years and (vi) any other income arising from its activity or which, by law or contract, may belong to it or be assigned to it, as well as any subsidies or other forms of financial support.

The financing of operators of publicly available electronic communications entails a compulsory contribution equal to 1% of gross revenues for the financial period of the previous calendar year.

FADCOM has the following objectives: (i) contribute to promoting access of rural populations to communications services, (ii) contribute to the promotion of the development of the basic network, (iii) contribute to the promotion of staff training and scientific research in the field of information and communication technologies and (iv) contribute to the availability of resources which ensure transparency and good quality of service by industry professionals. FADCOM benefits basic network expansion projects, public telecommunications operators engaged in universal access projects, institutions or entities whose activity is aimed at promoting access to communication services among the most disadvantaged populations, operators and agents involved in projects to expand cable networks, pay-telephones and telecentres to areas not served by telephony services as well as in places and areas inhabited by low-income citizens, and management of telecommunications and information technologies in terms of social support programmes and human resource development programmes.

Calculation of costs of universal service

There is no provision in the legislation.

Universal Service Pricing Regime

The prices of the provisions included in the universal service are, under the law, subject to regulation by INACOM, which shall strive for a guarantee of affordability the universal service, taking into account the consumer price index and national per capita income. For this purpose, INACOM shall evaluate and decide on the most appropriate means to guarantee affordability and may determine, among others: (i) the availability of tariff options or packages other than those provided under normal market conditions, (ii) the imposition of price caps and the application of common tariffs, including geographical averaging across the national territory.

Guarantee of quality of service

Under Angolan law, providers of public electronic communications services, including universal service providers, are required to publish comparable, clear, complete and up-to-date information on the quality of service they provide.

INACOM is responsible for defining and implementing a system to provide oversight and monitoring of quality of service provided by the operators present in the market.

Rights of consumers covered by the universal service

According to Angolan law, in order that subscribers can monitor and control charges for use of publicly available telephone networks and services and associated charges, the universal service providers shall provide the following minimum set of resources and mechanisms: (i) detailed billing with a level of detail defined by INACOM, (ii) selective and free call barring, upon subscriber request, with INACOM responsible for defining the types of call subject to barring, after hearing the service providers, (iii) prepayment of access to the public telephone network systems and use of publicly available telephone services to the public, (iv) payment of the price of connection to the public telephone network in instalments, and (v) other similar measures.

The universal service providers shall establish terms and conditions in order to ensure that users are not required to pay for facilities or services which are unnecessary for the requested service.

Projects and initiatives related to the universal service

There is no information currently available, although it is the intention of the Executive to prepare plans for the development of telecommunications network in more rural areas.

5.3.1.4 The current situation

Body responsible for ensuring provision of the universal service: Angola Telecom

Services included in universal service / universal access: Those listed in the law; although at the moment there is an ongoing reassessment of the scope of universal service and its relationship with universal access, and the Ministry of Communications is developing a strategic plan that aims to bring telecommunications services to rural areas — *Plano Nacional das Telecomunicações Rurais* (National Rural Telecommunications Plan) — and it will certainly have impact on the scope of universal access/universal service.

Additional requirements: see previous point

Form of designation: through the concession agreement

Financing and contributions to the fund: 1% of gross revenues of network operators and public use electronic communications service providers and public funding.

5.3.2 Brazil

5.3.2.1 General data on the country and the electronic communications sector[43]

Electronic Communications Sector

General information

The Federative Republic of Brazil is the largest country in South America and Latin America and is bordered on the east by the Atlantic Ocean, and in the north by Venezuela, Guyana, Suriname and the French overseas department of French Guyana; northwest by Colombia; west by Bolivia and Peru; southwest by Argentina and Paraguay and in the south by Uruguay. Several archipelagos form part of Brazilian territory, such as Atol das Rocas, Arquipélago de São Pedro and São Paulo, Fernando de Noronha (the only inhabited of these archipelagos) and Trindade e Martim Vaz.

Official language: Portuguese

Total area: 8,515,770 km²

Population: 202.656,788 (2014 estimate)

GDP (per capita): USD 15,200.00 (2014 estimate)

Major International Organisations[44]: CPLP, Mercosur; UN/ITU

43. Data taken from the World Fact Book *and corresponding generally to estimates from 2014 and Observatory of ARCTEL-CPLP (2012 data), ARCTEL-CPLP Communications Yearbook 2012, and research carried out by VdA*

44. Not exhaustive

Overall Assessment: The communications sector in Brazil is very dynamic and competitive, particularly in the mobile segment. In addition, the review of the regulatory framework that has been conducted in the market over the past 10 years has aimed to promote greater competition in the market and a reduction in communications prices. In addition, the Government has promoted a number of initiatives aimed at increasing access and improving fixed and mobile communications, and has determined the opening up of markets such as those of Internet access services and subscription television.

National communications: The fixed market currently has 5 major players, comprising the concessionaires of the switched fixed telephone service: Telemar/Oi, Telefónica, Sercomtel, Algar Telecom and Embratel. ANATEL undertakes constant intervention in the market, particularly in terms of price regulation, and operators are bound by various additional obligations, such as providing special tariffs for low-income users or fixed telephony service in rural and remote areas. Despite the socio-economic characteristics of the country, Brazil has one of the highest rates of fixed service penetration in Latin America, and the Government has been promoting a number of initiatives to extend fixed network coverage extension through the Plano Nacional de Banda Larga (National Broadband Plan). On the other hand, the implementation of the Plano Geral de Metas de Competição (General Plan of Competition Goals) has also contributed to enabling access by more entities to existing networks, which has allowed the spread of the provision of services by small ISPs.

The mobile market in Brazil is very competitive, demonstrated by the high penetration rate of these services in the country. Brazil has 3G technology and in 2014 the first LTE services were launched in the cities hosting World Cup games; these services are expected to be widespread by 2016. In addition, ANATEL has organised spectrum auctions, and in this context obligations have been imposed on operators in terms of coverage and quality of service. The main mobile operators are Vivo, Tim, Claro, Oi, Algar and Nextel.

Given the remote nature of many areas, satellite communications have played an important role in Brazil. The jungle of the Amazon in the north has the largest number of satellite communications due to the technical and financial impossibility of installing optical fibre in the dense vegetation.

Penetration rates (2015 data)[45]:

- Fixed telephone service: 22,1%
- Mobile service: 138%
- Internet: 85.6 million users (2013 data)
- Fixed broadband: 11.8%
- Mobile Broadband: n.a.

International communications infrastructure:

Brazil is served by submarine cables connecting the United States and the countries of South and Central America and the Caribbean, but no direct links to other continents. To overcome this obstacle, Brazil entrusted the public company Telebras with the construction of a submarine cable network — the Atlantic Cable System (ACSea) to link Brazil to the USA, Europe, Africa and other countries in Latin America. It also has satellite capacity, with a geostationary satellite of the Ministry of Defence due to be launched by Telebras by 2016[46] to be used for military purposes and to promote Brazil's PNBL — Plano Nacional de Banda Larga (National Broadband Plan)

Capacity to offer broadband services (fixed and mobile): Brazil has a network operated by Telebras, set up to enable broadband access, with provision of mobile broadband services based on authorised 3G and 4G operators. The PNBL provides for the retail provision of broadband services via fixed, mobile and satellite networks.

45. Data obtained from http://www.teleco.com.br/estatis.asp

46. information obtained from http://www.budde.com.au/Research/Brazil-Fixed-Line-Infrastructure-Overview-Statistics-and-Market-Forecasts.html. sthash.ZXmgAZze.dpuf

Relevant public bodies in the electronic communications sector:

ANATEL

Anatel is indirectly part of the Federal Public Administration, subject to a special regime under the Ministry of Communications, holding administrative and financial independence; its functions are to monitor the communications sector, for its regulation and supervision. Website: http://www.anatel.gov.br

Ministry of Communications

Its mission is to develop public policies, in a transparent and participatory manner, to promote access to communication services, contributing to economic growth, technological innovation and social inclusion in Brazil

Telecomunicações Brasileiras S.A. (Telebras)

Brazilian state company responsible primarily for the management of the National Broadband Plan and optical fibre infrastructure of Petrobras and Eletrobras.

5.3.2.2 Legislation/regulation with relevance to the characterisation of universal service and universalisation projects

Brazil - Relevant Legislation	
Scope of Universal Service	
Law no. 9,472 of 16 July 1997	*Lei Geral de Telecomunicações* (General Telecommunications Law), which provides for the organisation of telecommunications services, and defines universal service obligations
Decree no. 7,512 of 30 June 2011	Approves the PGMU — Plano Geral de Metas para a Universalização (General Plan for Universalisation Goals) of the Fixed Switched Telephone Service provided as a Public scheme. This plan provides for the right of access of all persons or institutions, regardless of their location, to the Fixed Switched Telephone Service
Resolution no. 598 of 23 October 2012	Approves the *Regulamento de Obrigações de Universalização* (Regulation of Universalisation Obligations), which sets out to establish the criteria and procedures for implementation, monitoring and oversight of Fixed Switched Telephone Service universalisation obligations
Financing	
Law no. 9,998 of 17 August 2000	Establishes FUST — Fundo de Universalização dos Serviços de Telecomunicações (Telecommunication Services Universalisation Fund)
Decree no. 3,624, of 5 October 2000	Regulates the FUST
Law no. 10,052 of 28 November 2000	Establishes FUNTTEL — Fundo para o Desenvolvimento Tecnológico das Telecomunicações (Telecommunications Technological Development Fund)
Decree no. 3,737 of 30 January 2001	Regulates FUNTTEL
Resolution GC/FUNTTEL no. 95 of 20 March 2013	Approves the Regulamento de Arrecadação da Contribuição para o *FUNTTEL* (FUNTTEL Contribution Collection Regulation)
Other Relevant Legislation/Documents	
Decree no. 2,338 of 7 October 1997	Approves the Regulation of the Agência Nacional de Telecomunicações (National Telecommunications Agency) and other measures; and Resolution no. 612 of April 29, 2013 (approves the Internal Regulation of ANATEL

5.3.2.3 Legal and regulatory framework governing the universal service and ongoing projects

Concept and Scope of the Universal Service

Brazilian law does not contain a definition of universal service, adopting instead the concepts of obligations of universalisation and continuity, which must be fulfilled by telecommunications service providers under the public scheme (currently concessionaires of the Fixed Switched Telephone Service)[47].

The obligations of universalisation are defined as those which "*aim to provide access to any person or institution of public interest to telecommunications services, regardless of their location and socio-economic status, as well as to allow the use of telecommunications in essential services of public interest*".

Meanwhile, obligations **of continuity** are defined as those designed to allow users of the services "*enjoyment without interruption, without undue downtime, whereby services are to be made available to users with appropriate conditions of use*".

The minimum set of provisions which should be available in the context of the universal service is as follows:

(i) Switched Fixed Telephone Service

In the context of the provision of the Switched Fixed Telephone Service, operators are required to provide user access to the following call types: local, long-distance national and long-distance international, including collective terminals adapted to each type of disability and specialised customer care centre for users with hearing and speech disabilities.

In the Brazilian market, there are also universalisation obligations with respect to broadband Internet. Decree no. 7512/2011 provides for the maintenance of the offer of backhaul as infrastructure supporting the Fixed Switched Telephone Service for the provision of broadband service, interconnecting the access networks to the operator's backbone[48].

(ii) Public pay-telephones

Under Brazilian regulations, the obligation to provide an offer of public pay-telephones comprises the activation by the Fixed Switched Telephone Service concessionaires of PSM — Posto de Serviço Multifacilidades (Multi-facility Service Points) to serve every UAC — Unidade de Atendimento de Cooperativa (Cooperative Service Unit) located in a rural area, upon request of the legal representative of the member cooperative or association, within one hundred and twenty days from the date of request[49].

(iii) Comprehensive Subscriber Telephone Directory[50]

The LTOG - Lista Telefónica Obrigatória e Gratuita (Compulsory Free Telephone Directory) is to be published in paper and electronic formats, with the specific purpose of disclosing information on subscribers. The LTOG is published and distributed on an annual basis, and should be updated with information collected up to 2 (two) months prior to the last day of the period of validity immediately preceding the current period[51].

47. See articles 63 paragraph 3, 64 and 65 of the LGT.

48. In the context of the obligation of fixed telephony service universalisation, the Regulation which addresses the issue of Backhaul in greater detail is Resolution no. 598 of 23 October 2012, available at http://legislacao.anatel.gov.br/legislacao.anatel.gov.br/resolucoes/2012/422-resolucao-598.

49. See articles 19 and 20 of Decree no. 7512/2011, available at http://www.planalto.gov.br/ccivil_03/_Ato2011-2014/2011/Decreto/D7512.htm). PSM - Posto de Serviço Multifacilidades (Multi-facility Service Point) means a set of installations for collective use which provide telecommunications facilities of voice access, internet access, scanning and transmission of text and image (item XVI of article 4 of Decree no. 7512/2011). UAC - Unidade de Atendimento de Cooperativa (Cooperative Service Unit) is the unit which effectively serves the members of a cooperative, engaging in specific activities, such as storage, packaging, refrigeration, credit and infrastructure, among others (item XVIII of article 4 of Decree no. 7512/2011).

50. Although this is a regulatory requirement for Fixed Switched Telephone Service concessionaires, this requirement is not in the PGMU, and is not therefore included in the list of universalisation obligations.

51. The offer of a complete directory of subscribers under universalization obligations stems from the provisions of article 213 of the LGT, whereas ANATEL Resolutions no. 66/1998, no. 357/2004 and no. 439/2006 govern the operational aspects of this component.

(iv) Additional provisions

Under Anatel Resolution no. 586 of 5 April 2012, the concessionaires are required to provide a specific service — AICE — *Acesso Individual Classe Especial* (Special Class Individual Access) for users on low incomes, governed by specific rules as regards installation times, pricing and service payment terms.

Furthermore, Decree no. 7512/2011 established that in regions with Fixed Switched Telephone Service with individual accesses, concessionaires must:

- prioritise service of individual access requests from certain establishments (schools, health institutions, public security services, public libraries and museums, Executive, Legislative and Judicial Authorities, offices of the State Prosecutor and consumer protection agencies); and

- make available individual access to regular educational establishments referred to above, to allow them to communicate through voice, other signals and internet connections by using the Fixed Switched Telephone Service itself or as a support for access to other services.

It is also set out that in locations served with individual Fixed Switched Telephone Service access, the Fixed Switched Telephone Service concessionaires shall, upon request, activate the Public Use Terminal (pay-telephones) in the indicated establishments, subject to the criteria set out in the regulations (Resolution no. 598 of 23 October 2012).

In addition, currently, ANATEL is working on a Regulamento Geral de Acessibilidade (General Accessibility Regulation), whose objective will be to incorporate the principles established in the International Convention on the Rights of Persons with Disabilities into the NRA's regulation[52], with the aim of establishing rules in order to allow people with disabilities enjoyment of telecommunications services and use of telecommunications equipment on an equal basis with others, by removing barriers to communication and information.

These rules are part of the universalisation goals of the Fixed Switched Telephone Service and the rules governing the provision of specific services, such as the Personal Mobile Service, subscription television (Restricted Access Service) and fixed broadband (Multimedia Communication Service).

Implementation of the guiding principles of universal service

The guiding principles in accomplishing the obligations of universality and continuity are those of universality, accessibility and continuity.

Universal service providers and provider designation mechanisms

Under the Brazilian regulatory framework, it is possible to designate providers of the various provisions of the universal service, with the option of designating various providers for different geographical areas.

The designation is performed based on the conclusion of concession contracts, whereas designation of the current providers took place by auction in the context of the industry privatisation process in the late 1990s; the maximum concession period was fixed at twenty years, renewable once for an equal period, provided that the concessionaire has fulfilled the conditions of the concession and manifested an expression of interest in an extension at least thirty months prior to the expiry of the contract. The concession presently expires on 31 December 2025.

52. Promulgated by Decree no. 6949 of 25 August 2009.

Universal service financing

The financing of the universal service may be effected employing the revenues generated by the operation of the service, or using a sector fund established by LGT and governed by Law no. 9,998 of 17 August 2000.

The Ministry of Communications is responsible for formulating policies, general guidelines and priorities which guide the applications of the FUST, and also for defining the programmes, projects and activities to be financed with these resources.

The administration and management of the FUST is the responsibility of ANATEL, which is required to publish, within sixty days of the end of each year, a statement of revenue and of the applications of the FUST with the names of the beneficiary organisations and the purpose of funding applications granted by the FUST.

The resources of the FUST may not be used to cover costs associated with the universalisation of the services which, under contractual arrangements governing the operation of telecommunications services, are to be supported by the Contracted Provider.

The revenues of the FUST derive from 1% (one percent) contributions on gross operating revenues, resulting from the provision of telecommunications services under the public and private regimes, excluding ICMS — Imposto sobre Operações Relativas à Circulação de Mercadorias e sobre Prestações de Serviços de Transporte Interestadual e Intermunicipal e de Comunicações (Tax on Circulation of Goods and Services for Interstate and Intercity Transportation and Communication), PIS — Programa de Integração Social (Social Integration Programme) and COFINS — Contribuição para o Financiamento da Seguridade Social (Social Security Financing Contribution). Other FUST revenues include:

(i) appropriations designated in the annual budget law of the Union and its additional credits;

(ii) public price charged by Agência Nacional de Telecomunicações (National Telecommunications Agency) as a condition for the transfer of concession, permission or authorisation of telecommunications services or use of radio frequencies paid by the concessionaire in the form of a fixed amount in one or more instalments, or annual instalments in accordance with regulations issued by the Agency;

(iii) donations; and

(iv) other payments due.

The Plans of Universalisation Goals funded using the FUST should include the following objectives:

(i) service of localities with low population density (less than one hundred inhabitants) and complement goals established in the PGMU in order to serve communities with low purchasing power;

(ii) implementation of individual access for the provision of telephone service under favourable conditions in schools, libraries and health institutions;

(iii) implementation of accesses for use of digital network information services for public access, including the Internet, under favourable conditions, at health institutions, schools and libraries and may include terminal equipment for operation by users;

(iv) reducing telecom bills of schools and libraries as regards the use of digital information networks services for public access, including the Internet, to benefit the greatest percentage of establishments frequented by population groups in need in accordance with the regulations of the Executive;

(v) installation of high-speed networks for the exchange of signals and deployment of teleconferencing services between educational establishments and libraries;

(vi) service of remote and border areas of strategic interest;

(vii) provision of individual accesses and interface equipment to institutions providing assistance to people with disabilities;

(viii) deployment of rural telephony.

Calculation of universal service costs

The concept of unfair burden is part of the Brazilian lexicon on universal service financing. In fact, the FUST aims to provide resources to cover the portion of costs exclusively attributable to the accomplishment of universalisation obligations of telecommunications services which:

(i) cannot be recovered through the efficient operation of the service, in accordance with the law;

(ii) under the concession contracts, are not the responsibility of the concessionaire (in accordance with the law).

Universal Service Pricing Regime

The pricing of basic Fixed Switched Telephone Service plans is set out in the service's concession contracts, according to a price cap regime. The basic plan can be readjusted, in periods of not less than 12 months, based on the variation of the inflation index of the period minus a productivity factor (Factor X[53]).

Alternative fixed telephone service plans must be submitted to ANATEL for approval[54].

Given the fact that zones have been defined for purposes of granting the Fixed Switched Telephone Service concession, the prices of this service can vary from region to region, but should be uniform in each of the PGO zones. Regulated tariffs should be uniform in the concession area, but vary between regions.

Guarantee of quality of service

The legislation applicable to the "RGQ-STFC" — Gestão de Qualidade da Prestação do Serviço Telefónico Fixo Comutado (Management of Quality of the Provision of the Fixed Switched Telephone Service) establishes a range of quality obligations regarding quality parameters, such as network performance, user response, customer service and perceived quality.

It is incumbent upon the regulator to monitor compliance with the rules which stem from the RGQ-STFC, and in case of non-compliance, the regulator has the authority to instigate appropriate administrative proceeding and to order operators to comply with the established quality parameters.

Rights of consumers covered by the universal service

In general terms, Brazilian law does not contain specific rules on mechanisms to control Fixed Switched Telephone Service subscriber costs.

Projects and initiatives related to the universal service

In the context of universalisation projects and initiatives which have been promoted in Brazil based on FUST financing, the following are highlighted: *Projeto de Atendimento às Instituições de Assistência às Pessoas com Deficiência Auditiva* (Customer Service Project for Institutions Providing Assistance with Hearing Disabilities), funded by FUST and aiming specifically to provide services and products suitable for telecommunications service users with hearing and speech disabilities.

53. The methodology used to calculate the X Factor adopted by ANATEL was established by Resolution no. 507 of 16 July 2008. The methodology entails definition of production factors and products used in the company's operations and the calculation mechanism, based on the total factor productivity methodology in order to calculate productivity in the provision of telecommunications services. To ensure the validity of the methodology, the resolution provides for a review of the methodology every 3 years or, on an extraordinary basis, in the event that significant changes are identified in economic conditions, as regards the risk of the business or with respect to the whole range of information available.

54. See STFC regulation approved by Resolution no. 426 of 9 December 2005.

5.3.2.4 Current situation

Entities responsible for ensuring provision of the universal service: Oi Telemar/BR Telecom (Regions I and II), Algar Telecom (Special sectors of Regions I, II and III), Sercomtel (Special sectors of Region II), and Telefónica (Region III); Embratel (Region IV) holds the long distance national and international concession.

Services included in the Universal Service / Universal Access: (I) fixed telephony (local, national and long distance national and international), (ii) public-pay telephones, (iii) backhaul of broadband.

Additional obligations: AICE — Acesso Individual Classe Especial (Special Class Individual Access), which is an offer exclusively for subscribers with low incomes and who are registered in the Federal Government's *Cadastro Único dos Programas Sociais* (Single Registry of Social Programs)[55]; priority in serving requests made by entities of public interest or for installation of STFC in places of public interest.

Form of designation: Universal service obligations are made incumbent upon operators by means of concession contract.

Financing and contributions to the fund: 1% of gross revenues reported by electronic communications network operators and providers of public use services and public financing.

5.3.3 Cabo Verde

5.3.3.1 General information about the country and the electronic communications sector[56]

55. See article 8 of Decree no. 7512/2011.

56. Data from World Fact Book and corresponding generally to estimates from 2014 and Observatory of ARCTEL-CPLP (2012 data), ARCTEL-CPLP Communications Yearbook 2012 and research carried out by VdA.

General information

Republic of Cabo Verde is a country made up of an archipelago of 10 volcanic islands, located in central region of the Atlantic Ocean, about 570 kilometres from the coast of West Africa.

Official languages: Portuguese

Total area: 4,033 km^2

Population: 538,535 (July 2014 estimate)

GDP (per capita): USD 6,300.00 (2014 estimate)

Major International Organisations[57]: CPLP, ECOWAS, African Union, Macaronesia, United Nations / ITU

Electronic Communications Sector

Overall Assessment: in Cabo Verde, the relevance of the communications sector has increased, on the one hand because it is an insular and archipelagic country, and on the other because it is a nation with a large diaspora spread over all continents. The country will remain focused on resolving barriers to competition in order to make services even more accessible to the general population, promoting national competitiveness[58].

National communications: The fixed telephone service market is relatively stagnant despite liberalisation of the sector in 2007, and currently there is only one fixed telephone service provider in the marketplace — CV Telecom — concessionaire company which has full control over the capital of CV Mobile and CV Multimédia.

There is some competition in the provision of mobile services, and as well as CV Móvel, authorisation to provide this service is granted to UNITEL T (with a market share of approximately 26.29% of subscribers, 20.85% of voice traffic volume and 20.17% of voice traffic revenues)[59].

Penetration rates (2012 data):

- Fixed telephone service: 14%
- Mobile service: 84%
- Fixed broadband: 4%
- Mobile Broadband: 23%

International communications infrastructure: Cabo Verde is served by two submarine cable services, WACS (*West Africa Cable System*) and Atlantis 2 and there is also available satellite capacity.

Capacity to offer broadband services (fixed and mobile): Cabo Verde has a national broadband network — and therefore inter-island network — based on optical fibre and capacity to provide 3G mobile service.

Frequencies have not yet been made available for the provision of 4G services.

Relevant public bodies in the electronic communications sector:

- National Regulatory Authority: ANAC — Agência Nacional das Comunicações Eletrónicas (National Electronic Communications Agency)

ANAC is an entity with administrative, financial and patrimonial autonomy, with the functions of technical/economic regulation, supervision and regulation of the electronic communications and postal sector.

57. Not exhaustive.

58. ARCTEL-CPLP Communications Yearbook in 2012.

59. Source: draft decision regulating the mobile market in Cabo Verde on 30 January 2014.

Website: http://www.anac.cv

- Núcleo Operacional para a Sociedade da Informação (Operational Unit for the Information Society)

Website: http://www.nosi.cv

- Ministry of Infrastructure and Maritime Economy of the Republic of Cabo Verde

5.3.3.2 Legislation / regulations with relevance to the characterisation of universal service and universalisation projects

Cabo Verde - Relevant Legislation	
Scope and Financing of Universal Service	
Legislative Decree no. 7/2005 of 24 November (amended by Legislative Decree no. 2/2014 of 13 October)	Establishes the legal regime applicable to electronic communications networks and services and associated services, and defines the powers of the national regulatory authority, including the scope of the Universal Service and the respective financing scheme
Other Legislation / Regulations and Relevant Documents	
Law no. 58/VIII/2014 of 21 March	Establishes the regime applicable to the construction of infrastructure suitable for carrying electronic communications networks and the installation of electronic communications networks, imposing sharing obligations
Concession Contract of 17 February 1997	Defines the terms and conditions under which the State of Cabo Verde grants the Concessionaire the right to operate the basic network for the provision of certain electronic communications services. This agreement lays down rules on the provision of universal service and the Universal Service compensation fund
Other Legislation / Regulations and Relevant Documents	
Decree-Law no. 31/2006 of 19 June	Sets up ANAC — Agência Nacional das Comunicações (National Communications Agency) and establishes its Statutes, as the entity responsible for technical and economic regulation, supervision, regulation and for representing the communications sector and supporting the government in the coordination, oversight and planning of the communications and communications and information technologies sector, dissolving Instituto das Comunicações e das Tecnologias da Informação (ICTI).
Law 63/VIII/2014 of 25 April 2014	Authorises the Government to legislate to amend Legislative Decree no. 7/2005 in order to extend the scope of the Universal Service through the provision of fixed or mobile Broadband internet
Decree Law no. 13/2014 of 25 February	Sets up NOSI — Núcleo Operacional da Sociedade da Informação, Entidade Pública Empresarial (Operational Nucleus for the Information Society)

5.3.3.3 Legal and regulatory framework governing the universal service and ongoing projects

Concept and Scope of the Universal Service

Universal service is defined in the law as "*the minimum set of services, defined (...), of specified quality, available to all users, regardless of geographical location and, depending on national conditions, at an affordable price.*"

The provisions which fall within the scope of universal service, in accordance with this law, are the following:

(i) Connection to the public telephone network at a fixed location and access to publicly available telephone services to the public at a fixed location

Universal service providers are required to meet all reasonable requests for connection to the public telephone network at a fixed location and for access to publicly available telephone services at a fixed location, allowing end-users to establish and receive local, national and international telephone calls, facsimile communications and data communications, with sufficient speeds to permit functional Internet access, taking into account the prevailing technologies used by the majority of subscribers and technological feasibility.

(ii) Provision of a comprehensive telephone directory and a comprehensive directory enquiry service

Constitute universal service obligations in respect of directory and directory enquiry service: (a) preparation, publication and availability to end-users of a comprehensive directory in print and/or electronic format which, subject to the provisions on privacy and personal data protection, covers all subscribers of publicly available telephone services; (b) annual update and provision of the telephone directory; c) provision to end-users of a directory enquiry service, through a short number, involving the disclosure of the data included in the telephone directory; and (d) the principle of non-discrimination in the treatment and presentation of information.

(iii) Adequate provision of public pay-telephones

It is incumbent upon the National Regulatory Authority to define, following consultation, the obligations of universal service providers which apply in the provision of public pay-telephones to ensure fulfilment of the reasonable needs of the population, including end-users with disabilities.

Public pay-telephones provided by universal service providers shall allow: (a) free access to various emergency services via the single national emergency number "112" or other emergency numbers and helplines defined in the *Plano Nacional de Numeração* (National Numbering Plan), without use of coins, cards or other means of payment; and (b) access to a comprehensive directory enquiry service under the terms defined in point c) of paragraph 1 of article 86.

In addition, pre-purchased telephone cards for access to publicly available telephone services through pay-telephones operated by universal service providers are required to conform to a single type, so as to enable their use in any public pay-telephone operated by these providers.

Also in this context, universal service providers are required to comply with technical standards on accessibility of urban buildings, set out in specific legislation, in order to ensure access to the service by end-users with disabilities.

(iv) Availability of broadband Internet regardless of the access technology

The designated universal service provider shall provide end-users with data speeds which allow secure access to the Internet, without regard to geography and at an affordable price. It is incumbent upon the NRA to define the minimum provision of Broadband internet, taking into account sufficient data rates provided by operators, technological progress, market growth and trends in user demand.

Under the law, the scope of universal service will evolve in line with the progress of technology, development of the market and changes in user demand, and its scope will be modified where this evolution warrants such modification.

On 25 April 2014, Law 63/VIII/2014 was published - authorizing the Government to legislate to amend Legislative Decree no. 7/2005, to extend the scope of universal service through the provision of internet Broadband on fixed or mobile networks, to amend the policy of Universal Service financing, constituting a Universal Service and Information Society development Fund (FUSI), and further to enable the Regulatory Authority to establish, by regulation of the Board of Directors, the minimum provision of the Broadband Internet service.

Finally, it should be noted that the Government may decide that other services should be made available, further to the universal service obligations, which may not however be offset by the distribution mechanism of the respective cost by undertakings providing electronic communications networks and services.

Implementation of the guiding principles of the universal service

The universal service is governed by the principles of universality, equality, continuity and affordability.

The key objectives of the universal service, in a fully competitive environment and in the context of the information society, are to ensure that all citizens can access a basic level of electronic communications services of general interest, and therefore also improve the technical conditions for the most disadvantaged areas.

Universal service providers and designation mechanisms

Under the terms of the law, the universal service can be provided by more than one undertaking, whereby the provisions of the universal service may be separated by provision or geographical areas, without prejudice to the provision of service throughout the country.

The provider designation process must be effective, objective, transparent and non-discriminatory, ensuring from the outset that all companies can be designated; it is incumbent upon the Government, by resolution of the Council of Ministers, to designate the company or companies responsible for providing the universal service, following a tender, whose regulation is approved by Administrative Rule of the members of the Government who have competence in the areas of finance and electronic communications.

The terms of the tender shall ensure the provision of the universal service in a cost effective manner and may be used as a means of determining the net cost of universal service obligations. The terms of the contract should also provide for the regime governing the maintenance of universal service obligations in case of spin-off, merger or assignment of the provider's contractual position.

Universal Service Financing

The mechanisms which are provided for under the law to finance the service consist of (a) compensation from public funds; and or (b) sharing the cost among other undertakings providing publicly available electronic communication networks and services in the national territory, in this case through the FUSI.

The objective of the FUSI is to ensure the provision of universal service, the financing of information society development projects and programmes in the national territory to be carried out by the designated universal service provider and also compensation of the net costs inherent to universal service provision by the designated provider.

Regulation to govern the FUSI is ongoing, and the terms of its management/governance are not yet known.

Companies which offer public communications networks and services or publicly available electronic communication services contribute to the FUSI with a percentage of net revenues in respect of the financial period of the previous year, under the terms to be established by Regulatory Decree.

The Government may choose to waive the requirement to contribute to the FUSI for companies that do not reach a certain turnover or are in the early stages of their business activities, according to a minimum limit which will be granted by specific legislation.

The terms applicable to any limits for the contribution of each undertaking shall also be stipulated in Regulatory Decree.

Whenever the NRA considers that the provision of universal service by the designated provider represents an unfair burden for the respective provider, it will calculate the net cost of universal service obligations according to one of the following procedures: (a) calculating the net cost of the universal service obligation, taking into account any additional market advantages from which providers obtain benefit; and (b) use the net costs of providing universal service identified under a designation mechanism provided for under applicable legislation. NRAs should define the concept of "unfair burden", and the terms governing its determination, in particular the frequency of evaluations and the criteria used.

Calculation of universal service costs

Where calculation is made of the net cost, the following assumptions apply: (a) analysis must be made of all means to ensure appropriate incentives so that providers comply with the universal service obligations in an economically efficient manner; (b) the cost of universal service obligations is calculated as the difference between the net cost for an organisation operating under universal service obligations and operating without the obligations, whether the network is fully developed or is still in phase of development and expansion, whereas it is necessary to correctly assess the costs which providers would have chosen to avoid in the absence of universal service obligation; (c) benefits must be taken into account, including intangible benefits obtained by universal service providers; (d) calculation of the net cost of specific aspects of universal service obligations is conducted separately and avoiding duplicate counting of any direct or indirect costs and benefits; and (e) the net cost of universal service obligations is calculated as the sum of the net costs of the specific components of universal service obligations.

The calculation is based on the costs attributable to: (a) the elements of the determined services which will be provided at a loss or under cost conditions falling outside normal commercial practice, which may include, inter alia, access to emergency telephone services, the provision of certain public pay-telephones or the provision of certain services and equipment to users with disabilities; and (b) end-users or specific groups of end-users who, taking into account the cost of providing the network and specified service, together with the revenues generated and any geographical averaging of prices imposed by the NRA, can only be served at a loss or under cost conditions falling outside normal commercial practice.

This category is considered to include end-users or groups of end-users who would not be served by a commercial operator which is not subject to an obligation to provide the universal service.

Universal Service Pricing Regime

The NRA is responsible for ensuring that universal service affordability is guaranteed, taking into account, in particular, national consumer prices and national income. To this effect, the NRA must evaluate and decide on the most appropriate means to ensure affordability and may determine: (a) the availability of tariff options or packages other than those provided under normal commercial conditions, in particular to ensure that consumers with low incomes or special social needs are not barred from accessing the telephone service or from its use; (b) the imposition of maximum price caps and the application of common tariffs, including geographical averaging of prices throughout the territory; and (c) other similar arrangements.

In Cabo Verde there is still no regulation of pricing within the scope of the universal service, but according to information provided by the NRA, this subject may be the object of regulation in the near future.

Guarantee of quality of service

The universal service providers are required to provide end-users, and also the NRA, with appropriate and timely information on their performance in providing the universal service, based on the parameters of quality of service, definitions and methods of measurement that may be defined under specific legislation.

The NRA may specify in particular: (a) additional quality of service rules to evaluate the performance of the universal service providers in the provision of services to end-users and consumers with disabilities, where relevant parameters have been defined; (b) the content, form and how the information should be made available in order to ensure that end-users and consumers have access to information which is clear, comprehensive and comparable.

The NRA may determine independent audits or other mechanisms to verify the performance achieved by universal service providers, at providers' own expense, to ensure the accuracy and comparability of the data made available by the providers.

Rights of consumers covered by the universal service

The legislation of Cabo Verde already contains specific provisions to ensure certain rights of users of electronic communications services subject to the universal service regime.

As such, in order that subscribers are able to verify and control the charges incurred in using the public telephone network and associated publicly available telephone services, universal service providers shall make available the following minimum set of resources and mechanisms: (a) itemised billing; (b) selective and free barring of outbound calls made from or to defined types of numbers, upon subscriber request; (c) pre-payment systems giving access to the public telephone network and use of publicly available telephone services; (d) payment for connections to the public telephone network in instalments; and (e) measures governing non-payment of telephone bills under applicable law.

Projects and initiatives related to the universal service

Currently and without prejudice to the universal service obligations to which CVTelecom is bound under the Concession Contract, the following are examples of projects and initiatives related to the universal service:

(i) Tender for Sponsorship of Social Projects (2013): had as its object the award of sponsorship to social projects related to information and communication technologies, totalling 4,000,000$00. This tender sought support for projects under the responsibility of non-governmental and community institutions, organised under the national laws, which are non-profit making and operating in the third sector; and

(ii) Tender for the Sponsorship of Social Projects (2015): following the tender held in 2013, ANAC launched another public tender in 2015 for the allocation of sponsorship to social projects, also with sponsorship totalling 4,000,000$00. However, this tender is limited to projects to provide accessibility to ICTs for persons with disabilities.

With this tender, ANAC is specifically seeking to promote the creation of projects which benefit people with special needs, reducing the digital divide and promoting the use of resources and actions whereby technological benefits may be extended across the whole of society, regardless of place of residence and work, or respective socio-economic and cultural conditions. The results of this tender are not yet known.

5.3.3.4 The current situation

Body responsible for ensuring provision of the universal service: Concessionaire of the Public Telecommunications Service — CVTelecom — under the concession contract

Services included in the universal service[60]: Fixed telephone service, fixed telex service, switched data transmission service

Additional requirements: The grantor may impose other obligations on the concessionaire involving the provision of profitable services, where justified by the public interest

Form of designation: CVTelecom has been designated as universal service provider under the Concession Contract

Financing and contributions to the fund: to date no fund has been set up and no contributions to the universal service fund have been required from operators/service providers

60. However, the contract is not absolutely clear in the distinction between the concepts of: universal service, public service and essential services.

5.3.4 Guinea-Bissau

5.3.4.1 General data on the country and the electronic communications sector[61]

General information

Guinea-Bissau, located in West Africa, is bordered by Senegal to the north, Guinea to the south and east and the Atlantic Ocean to the west. The country's capital is the city of Bissau.

Official languages: Portuguese / Guinea-Bissau Creole

Total area: 36,544 km²

Population: 1 0704 000 (2013 estimate)

GDP (per capita): USD 598.00 (2014 estimate)

Major International Organisations[62]: CPLP, African Union, Economic Community of West African States (ECOWAS), Organisation of Islamic Cooperation, the Latin Union, the Francophonie and the South Atlantic Peace and Cooperation Zone; UN/ITU

61. Data taken from the World Fact Book *and correspond generally to estimates from 2014 and Observatory of ARCTEL-CPLP (2012 data), ARCTEL-CPLP Communications Yearbook 2012 and research carried out by VdA.*

62. Not exhaustive.

Electronic Communications Sector

Overall Assessment: In Guinea-Bissau, the communications sector was inevitably affected by the political instability that marked the twentieth century and early twenty-first century in the country, in particular the military coup that took place in 2012. However, telecommunications have been and continue to be one of the factors of economic and social growth, and were recognised by the country's Prime Minister in 2015 as one of the main sources of income in the country.

In fact, Guinea-Bissau has reported a solid increase in access to and spread of telecom technologies and services among the population, whereby the number of active mobile phones cards in the country has more than tripled in five years (rising from 332,000 in 2007 to 1.1 million at the end of 2012).

National communications: The national communications market suffered considerable damage in terms of equipment and infrastructure as the country achieved independence. According to data from 2012, only 1 in 100 people have access to fixed telephony services, with a mobile penetration rate of around 50%.

The market is led by South Africa's MTN, with more than half the market share of the three operators in the country. The second largest operator is Orange Bissau, owned by Orange Senegal.

The government of Guinea-Bissau controls the Telecommunications Company of Guinea-Bissau, Guinetelecom, and its subsidiary for the mobile sector, Guinetel. Given the degradation of networks and services, these companies are currently inactive in the market and the sale of all or part of the company is expected and/or business partnerships between the government and third parties for the management of the operator. To this end, the Secretary of State for Telecommunications established a Commission for the Restructuring of Guinetel and of Guinetelecom, which, in turn, from March 2015, promoted an event to collect expressions of interest from potential investors in both companies and present the proposal of workers for the privatisation model of the two companies.

Penetration rates:

- Fixed telephone service[63]: 0.3% (2010 data)
- Mobile service: 65% (2012 data)
- Fixed broadband[64]: 0.0024% (2012 data)
- Mobile Broadband: n.a.

Relevant public bodies in the electronic communications sector:

- **National Regulatory Authority:** ARC — Autoridade Reguladora Nacional das Tecnologias de Informação e Comunicação da Guiné-Bissau (National Regulatory Authority of Information and Communication Technologies of Guinea-Bissau)

ARC is a public institution with legal personality and administrative and financial autonomy, an independent budget and its own assets, whose purpose is to exercise the functions of regulatory authority in the telecommunications sector.

Website: https://www.facebook.com/AutoridadeReguladoraNacional

63. According to information available in the 2012 ARCTEL Report.

64. According to information available online, 75% of this market segment is controlled by MTN, which had about 1,000 subscribers in 2008.

5.3.4.2 Legislation / regulations with relevance to the characterisation of universal service and universalisation projects

Guinea-Bissau — Relevant Legislation	
Scope of Universal Service	
Law no. 5/2010 of 27 May 2010	Basic law of information and communication technologies (establishes the concept of universal service and basic telecommunications service)
Decree no. 16/2010 of 22 September 2010	Regulation of offer of information and communication networks and services
Decree no. 17/2011 of 25 February 2011	Approves the Regulation of the Universal Access Fund (defines the concept of universal access)
Financing	
Decree no. 17/2011 of 25 February 2011	Approves the Regulation of the Universal Access Fund
Other Legislation / Relevant regulations	
Law no. 5/2010 of 27 May 2010	Basic law of information and communication technologies (establishes the concept of universal service, establishes the sector's Regulatory Authority)
Decree no. 8/2012 of 23 October 2012	Regulation on access to and offer of networks and services transmitted by optical fibre submarine cables

5.3.4.3 Legal and regulatory framework governing the universal service and ongoing projects

The current legal framework of the universal service in Guinea-Bissau is laid down in the Lei de base das tecnologias de informação e comunicação (Basic law of information and communication technologies), which constitutes a transposition of the framework adopted at ECOWAS level[65]. In particular, Additional Act A/SA 6/01/07 on universal access/universal service, adopted in Ouagadougou on 19 January 2007, and Directive no. 04/2006/CM/UEMOA, signed in Abidjan, on 23 March 2006, on universal service and network performance obligations.

Concept and Scope of the Universal Service

Guinea-Bissau legislation applies the concepts of universal access and universal service, with the first, by its nature, aimed at specific programmes and projects.

However, both concepts are aimed at the satisfaction of the population's basic needs and have virtually the same definitions in the law. To this end, universal service is defined as "*minimum set of services of specified quality, available to all users regardless of their geographical location and at an affordable price set by the Government*." Meanwhile, universal access is defined as the "*set of specific obligations inherent to the penetration of basic telecommunications services for public use, including advanced telecommunications services at affordable prices seeking to satisfy the communication needs of communities in rural and urban periphery areas, as well as the economic and social activities of the country, through the Universal Access Fund*"[66].

65. See Chapter 4.2 above.

66. This concept of universal access, which stems from the Regulation governing the Universal Access Fund (see point d) of article 1), is much more comprehensive than the concept laid down in Lei de Bases das Tecnologias de Informação e Comunicação *(Basic Information and Communication Technologies Law), which defines universal access more broadly as the "*minimum set of services of specified quality, accessible to all users regardless of their geographical location and, in accordance with specific national conditions, at an affordable price."

The definition of universal access and universal service policy falls to the Cabinet member responsible for the information technology sector, whereas the NRA is called on to collaborate with the Government in the development of this policy and ensure compliance with the obligations inherent to the universal communications service. Meanwhile, it is incumbent upon both parties, in the pursuit of their respective remits, to adopt the most efficient and appropriate solutions to ensure the achievement of universal service.

The minimum set of services to be provided under the universal service is as follows:

(i) Connection to the public telecommunications network and access to publicly available telecommunications services

The universal service provider must meet all reasonable requests for connection to the public telecommunications network and access to publicly available information and communications services.

This connection and access should allow end-users to make and receive local, national and international calls, facsimile communications and data communications and functional Internet access, taking into account the prevailing technologies used by the majority of subscribers and technological feasibility.

(ii) Provision of a comprehensive telephone directory and a comprehensive directory enquiries service

In this regard, universal service obligations comprise obligations to (a) prepare and publish a printed telephone directory and make it available to end-users, free of charge, without prejudice to the privacy and protection of personal data; (b) update and make this telephone directory available on an annual basis; (c) provide end-users with a directory enquiry service, involving the disclosure of data from this telephone directory; and (d) respect the principle of non-discrimination in the treatment and presentation of information supplied to it.

(iii) Adequate provision of public pay-telephones

Public pay-telephones shall allow (a) free access to the various emergency services through the national emergency and assistance number defined in the Plano Nacional de Numeração (National Numbering Plan), without use of coins, cards or other means of payment; and (b) access to a comprehensive directory enquiry service.

The NRA is responsible for defining the obligations of the universal service provider which apply in the provision of public pay-telephones, to ensure fulfilment of people's needs, taking into account the availability of comparable resources and services and with a view to the needs of end-users in terms of geographic dispersion, population density and quality of service.

Implementation of the guiding principles of the universal service

The guiding principles of universal service are not set out in national legislation, however Directive no. 04/2006/CM/UEMOA states that ECOWAS Member States shall ensure that the provision of universal service respects the principles of equality, continuity, universality and adaptability.

Universal service providers and provider designation mechanisms

Currently, there is no operator designated as universal service provider in Guinea-Bissau, and there are no formally defined mechanisms for such designation.

Universal service financing

The legislation adopted at national level only addresses the funding of universal service through one of the following mechanisms or through both: (a) compensation from public funds, specifically the surplus of funds generated by the NRA under the basic telecommunications law; and (b) sharing of costs by the companies that offer publicly available networks and information communications services in the national territory. The NRA may determine other criteria for allocating the cost of universal service between companies required to contribute, while respecting the principles of transparency, non-discrimination and proportionality.

It is also worth pointing out that the regulatory framework set out by ECOWAS[67] stipulates that national regulatory authorities shall assess whether the provision of universal service represents an unwarranted cost to companies designated as providers, and, if so, Member States should undertake to promote the adoption of a methodology to calculate the net cost of universal service.

FAU — Fundo de Acesso Universal (Universal Access Fund) is intended to finance programs, projects and activities in the context of the fund, as set out in the plans approved pursuant to the Regulation, giving priority service to rural and urban periphery areas. The allocation of FAU funds among operators is through public tender.

The FAU is a public fund with administrative and financial autonomy, and its management is given to the President of the NRA; the compensation fund operates in accordance with the principles of transparency, non-discrimination, proportionality and minimal market distortion.

With regard specifically to its governance, (I) the fund has accounting which is independent and separate from the NRA's accounting; (Ii) the NRA is responsible for organising the fund's accounting in accordance with the management principles which govern the budgets and accounting of state institutions; (Iii) the accounting of the Fund is subject to annual auditing to be carried out by national or foreign offices or individual consultants recruited by means of public tender, whereas the results of the audit are to be included in the annual report of the Fund's activities and finances and (iv) these documents are published and are submitted to the assessment of the members of the Government responsible for the areas of telecommunications and finance.

Contributions to the FSU are required from licensed or registered undertakings in exercise of the activity of operator and provider of public-use telecommunications services, with a value equivalent to 1% of gross revenue in respect of the previous year, taking into account the sharing of basic infrastructure among operators.

Contributions are to be paid in a lump sum, no later than the end of the first half of the year, after notification to this effect.

Calculation of universal service costs

In Guinea-Bissau, there has been no exercise for the calculation of net costs of universal service.

In the regulatory framework of ECOWAS, it is established that the net costs are the difference between investment and operating costs required for the provision of universal service and the relevant revenues (the direct revenues or revenues indirectly derived from the universal service), as determined by a body which is independent of the fund's management; the results of the calculation of net costs and the conclusions of this verification are to be made public[68].

Universal Service Pricing Regime

In Guinea-Bissau, there isn't yet a regulatory regime to govern universal service pricing. However the regulation of ECOWAS establishes that the NRA shall ensure that the universal service is made available with pricing conditions which are accessible to the general population, whereas the NRA may, at the request of the minister responsible for the sector, impose an obligation on the designated undertaking(s) to provide users on low incomes or in social need with specific tariff options or other pricing formulas which differ from the normal conditions of the service with the primary purpose of guaranteeing universal service.

Guarantee of quality of service

The universal service provider is obliged to make available to end-users, as well as to the NRA, appropriate and timely information on their performance as regards provision of the universal service, based on the parameters of quality of service, definitions and measurement methods set out by the NRA.

67. See Article 19 of the Additional Act A/SA 06/01/07.

68. See article 7 of Directive no. 04/2006/CE/WAEMU.

Under the rules of ECOWAS, the NRA shall establish performance objectives to be met by undertakings designated for provision of the components of the universal service, whereas authorisations granted for the provision of communications services and the information society may provide for quality targets to be met by registered entities.

Rights of consumers covered by the universal service

This matter is not covered by current legislation and regulations.

Universalisation obligations, projects and initiatives

The NRA is also preparing a project of development programmes and projects related to universal access, due for completion in 2013; however, there is currently no official information on its implementation. The objectives of these documents are to define the guidelines and priorities of the Government's policy on the universal telecommunications service and govern the universal service strategy, with regard to (a) establishing the obligations of operators in terms of provision of the universal telecommunications service; (b) determining the means of extending the coverage of the universal service in rural or urban areas; (c) organisation of the financing of the Universal Telecommunications Service Development Fund via financial contributions from telecommunications network and service operators and via tender from other interested parties.

In any case, the NRA has already funded, over recent years, multifunctional Internet centre projects in some schools in the country to promote the use of ICT.

In addition, in January and February 2015, 2 public squares with free Internet access were inaugurated in Bissau. The company Orange is contracted by the Government through the FAU — Fundo de Acesso Universal (Universal Access Fund) to ensure coverage of free and open Wi-Fi internet in Praça dos Heróis Nacionais and the company in MTN Praça Titina Sila. The Government aims to develop similar initiatives in 28 locations around the country.

5.3.4.4 Current situation

Body responsible for ensuring provision of the universal service: N/A

Services included in the universal service: connection to the public telecommunications network and access to publicly available telecommunications services; provision of a comprehensive telephone directory and a comprehensive directory enquiry service; and adequate provision of public pay-telephones

Additional requirements: obligations to citizens on low incomes and other special needs

Method of designation: Public tender

Financing and contributions to the fund: Financing through the FAU set up by the government and managed by the NRA. In 2011, the Executive Secretary of the Universal Access Fund was formally appointed, in order to determine the methods of operation and use of Fund resources, without prejudice, however, to the obligations imposed on operators by the respective specifications and NRA powers to set the execution of tasks and obligations relating to the development of the universal service, in respect of: (a) compensation of costs incurred by operators with universal service obligations, which are not covered by the revenues of that service; (b) subsidy or funding for the extension of universal service/ access coverage.

5.3.5 Equatorial Guinea

5.3.5.1 General data on the country and the electronic communications sector[69]

General information

Equatorial Guinea is a country divided into seven provinces (island and mainland), bordering Gabon, São Tomé and Príncipe, Cameroon and Nigeria. The country's capital is the city of Malabo.

Official languages: Portuguese / French / Spanish

Total area: 28,051 km^2

Population: 757,000 (2013 estimate)

GDP (per capita): USD 25,700.00 (2014 estimate)

Major International Organisations[70]: CPLP, the African Union

69. Data taken from the World Fact Book and correspond generally to estimates from 2014 and Observatory of ARCTEL-CPLP (2012 data), ARCTEL-CPLP Communications Yearbook 2012 and research carried out by VdA.

70. Not exhaustive.

Electronic Communications Sector

Overall Assessment: Equatorial Guinea has a very recent telecommunications market, and the construction and development of basic infrastructure is still ongoing. The country has been taking important steps in the development of technologies and services available to the population, but there are still many challenges ahead in order to ensure growth of the mobile, fixed and internet market, according to the objectives established by the Government under the Government "Horizon 2020" Programme.

National communications: The market for national communications was subject to a monopoly until market liberalisation in 2008 and has since grown at a regular but restrained rate. Both the fixed and mobile market currently have a lot of room for development and growth, particularly in view of the demographic picture of the country (with approximately 40% of the population made up of young people under 25 years of age).

According to data from 2012, only 1 in 100 people have access to fixed telephony services, with the mobile market more widespread and a mobile penetration rate of around 70%. The market includes three mobile operators (Orange, Hits and Muni) and in 2014, the Minister for Telecommunications declared that for the moment the country did not need more operators, but development of infrastructure, equipment and services.

Penetration rates:

- Fixed telephone service: 14%
- Mobile service (pre-paid and post-paid): 70%[71]
- Fixed broadband: 0.07%
- Mobile Broadband: n.a.

International communications infrastructure: from Bata and Malabo, the country is linked to networks that allow international communications with Africa and Europe, as well as a link to the Intelsat satellite, with its own station on the ACE submarine cable, which links France to South Africa.

Capacity to offer broadband services (fixed and mobile): Equatorial Guinea enjoys an international submarine cable connection to the ACE (Africa Coast to Europe) cable, installed and operated as a result of a consortium of 16 international operators. ACE has a potential capacity of 05.12 Tbps supported by WDM technology with 40 Gbps wavelengths and allows for increased capacity in line with needs and adaptation to the latest technological innovations.

Relevant public bodies in the electronic communications sector:

- **National Regulatory Authority:** Oficina Reguladora de Telecomunicaciones (ORTEL)

Website: http://www.ortel-ge.org/

71. According to information provided at hitstelecom.com, on the ITU website and www.gsma.com

5.3.5.2 Legislation/regulation of relevance to the characterisation of the universal service and universal projects

Equatorial Guinea — Relevant Legislation	
Scope of Universal Service	
Ministerial Order no. 1/2008 of 15 April	Regulation of the Universal Service
Financing	
Ministerial Order no. 3/2008 of 15 April	Regulation of the Telecommunications Development Fund
Other Legislation / Relevant regulations	
Law no. 7/2005 of 7 November	General Regime Governing Telecommunications

5.3.5.3 Legal and regulatory regime governing universal service and ongoing projects

The regime applicable to the universal service is laid down in a separate regulation, which contains general principles applicable to the universal service. However, the Regulation contains only very general provisions, which shall, in principle, be detailed pursuant to the public tender which will be held in order to designate the provider(s) of the universal service as well as in any licence or authorisation as a result of the tender. In fact, the regulation governing the universal service sets out that authorisations to be issued in the context of the universal service reflect, among other conditions, the methods to be used for the calculation of universal service costs and associated conditions of payment and penalties for non-compliance by the universal service provider.

Concept and Scope of the Universal Service

Universal service is defined as a minimum set of quality services accessible to all people, irrespective of their geographical location and at a reasonable price.

The universal service includes the following services (this framework should be reviewed within 3 years):

(i) Connection to the public telephone network in response to justified requests and to allow users to make/receive local, national and international telephone calls;

(ii) Installation of telephone booths, on terms that ensure access by the population at a distance not exceeding 1 km;

(iii) Access to emergency services;

(iv) Possibility of access to information services through mobile or fixed network, and a telephone directory (which should be published under terms to be approved by ORTEL);

(v) Adoption of special measures for certain social groups — operators with universal service obligations are to ensure that users with disabilities or similar conditions and with specific social needs should make use of telephone services included in the universal service under terms of equality.

Implementation of guiding principles of universal service

The guiding principles of universal service shall lay down the rules related to the public tender to be performed and authorisations issued as a result of it.

Universal service providers and provider designation mechanisms

Currently, there is no operator designated as universal service provider in Equatorial Guinea, although it is expected that a provider will be appointed through public tender.

Universal service financing

The financing of universal service (whose management is the responsibility of ORTEL along with the General Treasury of the State) will be provided through the Telecommunications Development Fund, the regulation of which sets out that the resources to be allocated will be derived from allocated budget funds, received donations, loans and grants from public or private entities, fees for services rendered by ORTEL's Technical Office and applicable fees.

Calculation of universal service costs

The universal service costs are calculated taking into account the difference between the operating costs associated with the provision of universal service and the revenues resulting directly or indirectly therefrom. For this purpose, only the net costs will be taken into consideration for the purpose of allocating financial compensation through the Universal service financing fund. In order to control the calculation of costs and avoid financial imbalances, strict control mechanisms will be established for the purposes of the annual assessment of the costs associated with universal service. Separate accounts will be allocated to each universal service provider, to be audited annually by ORTEL.

Universal service pricing regime

There is no provision in legislation.

Guarantee of quality of service

There is no provision in legislation.

Rights of consumers covered by the universal service

There is no provision in legislation.

Universalisation obligations, projects and initiatives

There is currently no information available as to any projects being carried out by the Government or by ORTEL in the context of universal service.

5.3.5.4 Current situation

Body responsible for ensuring provision of the universal service: There is currently no operator designated for the provision of universal service

Services included in the universal service: connection to the public telephone network; installation of telephone booths; access to emergency services; possibility of access to directory enquiry services and a telephone directory

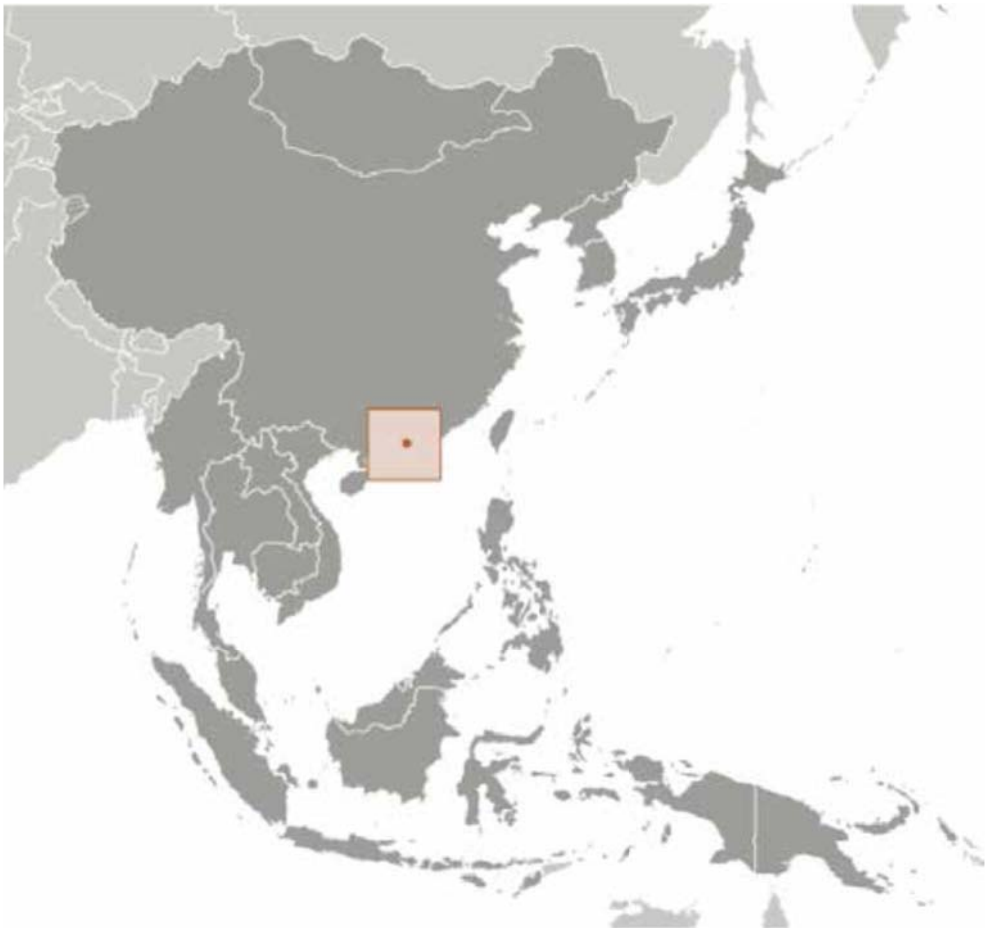
Other additional obligations: adoption of special measures for certain social groups

Form of designation: through public tender

Financing and contributions to the fund: currently, provision for the existence of a telecommunications development fun is made under a separate regulation.

5.3.6 Macau, China

5.3.6.1 General data on the country and the electronic communications sector[72]



General information

The Macau Special Administrative Region, located on the southern coast of the People's Republic of China, borders Guangdong Province and, more precisely, the Zhuhai Special Economic Zone. Macau is one of the two special administrative regions of the People's Republic of China (the other being Hong Kong). Since Macau is not an independent country, it does not have its own capital, although enjoying special status gives it a high degree of autonomy in determining an economic-financial, social and cultural system, a tax system, and over security, immigration and border control.

Official languages: Portuguese/Chinese (Mandarin)

Total area: 30.3 km^2

Population: 636,200 (2014 estimate)

GDP (per capita): USD 91,376.00 (2014 estimate)

Major International Organisations: United Nations, Asia-Pacific Telecommmunity (APT) ; United Nations/ITU

Population: 636,200 (2014 estimate)

72. Data taken from the World Fact Book and corresponding generally to estimates from 2014 and Observatory of ARCTEL-CPLP (2012 data), ARCTEL-CPLP Communications Yearbook 2012 and research carried out by VdA.

GDP (per capita): USD 91,376.00 (2014 estimate)

Major International Organisations: United Nations, Asia-Pacific Telecommmunity (APT)[73]; United Nations/ITU

Macau is not a member of the CPLP.

Electronic Communications Sector

Overall Assessment: The electronic communications market in Macau is necessarily marked by the small of size its territory and population, as well as by the region's peripheral and insular location. The sector was a monopoly of Companhia de Telecomunicações de Macau ("CTM") until December 2011. In early 2012, DSRT announced a public tender to award a further fixed license but only one tenderer submitted a proposal — MTel Telecommunications Co Ltd (MTel).

The new licences for the provision of fixed services were awarded in June 2013 to CTM and to MTel. The mobile service market was liberalised in 2001.

The mobile market has enjoyed significant growth, and the current penetration rate of mobile services in Macau is one of the highest in the world. For its part, the fixed service reached saturation several years ago, and this type of service is currently reporting a decline in take-up.

National communications: Macau already enjoys modern telecommunications infrastructure suitable for the provision of sophisticated communications services. There are two fixed operators — CTM and MTel Telecommunications Co Ltd ("MTel"). In the mobile market, there are four mobile operators — CTM, China Telecom (Macau), Limitada; Smartone — Comunicações Móveis, S.A.; Hutchison — Telefone (Macau), Limitada. There is also an MVNO (Kong Seng Paging Limited), twenty providers of Internet access services, one provider of cable television signal distribution services and four providers of satellite broadcasting services.

Penetration (2014 data)[74]:

- Fixed telephone service: 26%
- Mobile service: 262%
- Fixed broadband: 27%
- Mobile Broadband: 65% (approx.)

International communications infrastructure: Macau has its own station for the SEA-ME-WE-3 cable, which connects a total of 33 countries and regions in Europe, Africa and Asia.

Capacity for Offer of Broadband Services (fixed and mobile): The high-speed broadband service to homes (Fibre to the Home) was launched in October 2010, and the region had the infrastructure necessary for the provision of broadband services. With regard to mobile broadband, in March 2015, the entity responsible for the regulation of telecommunications in Macau announced the allocation of 4G licensing to four operators.

The rules for the allocation of this licencing stipulate that the operators chosen provide at least 50 percent coverage in 2015, a level that should be surpassed over the eight years of the contract.

Relevant public bodies in the electronic communications sector:

- **DSRT** — Direção dos Serviços de Regulação de Telecomunicações (Bureau of Telecommunications Regulation).

Website: http://www.dsrt.gov.mo/

73. The "Asia-Pacific Telecommmunity (APT)" was established in May 1979 and now has 32 Members, 4 Associate Members and 96 Affiliate Members. The main objective of the "APT" is to contribute to the development of telecommunications services and information society resources in the region and in particular to the expansion of these services in less developed countries.

74. Information obtained in http://www.budde.com.au/Research/Macau-Telecoms-Mobile-Broadband-and-Forecasts.html

5.3.6.2 Legislation/regulation of relevance to the characterisation of the universal service and universal projects

Macau, CHINA — Relevant Legislation	
Scope and Financing of Universal Service	
Law 14/2001 of 20 August	Basic Telecommunications Law
Other Legislation / Relevant regulations	
Conclusion of the Concession Contract of Public-Use Telecommunications Services with CTM (August 1981)	Concession Contract of the Public Telecommunications Service (valid until 31 December 2016, renewable for a further five years).
Interim Review of Concession Contract of Public-Use Telecommunications Services (November 2009)	Regulation governing the Organisation and Functioning of the Bureau of Telecommunications Regulation

5.3.6.3 Legal and regulatory framework governing the universal service and ongoing projects

Concept and Scope of the Universal Service

Universal service is defined in the Lei de Bases das Telecomunicações (Basic Telecommunications Law) as "*the set of specific obligations inherent to the provision of public-use telecommunications services (aimed at the general public) which seek satisfaction of the population's communication needs and the communication needs of economic and social activities, in conditions of equality, continuity and affordability, with appropriate remuneration*"[75].

According to the principles laid down in the law, the concept of universal service is determined in an evolutionary manner, taking into account factors such as technological progress, market development and changes in user demand. The Government is responsible for approving the rules which govern the Universal Service for telecommunications.

The Concession Contract[76] concluded between Macau, China and CTM assigns responsibilities to this company for the provision of universal service and establishes the scope of the universal service. In this respect, the universal service covers the fixed telephone service (i) local (fixed telephone service, telegraphic service, fixed telex service and switched data transmission service); and (ii) international (fixed telephone, telegraphic service, fixed telex service, where entailing addressing of calls established in real time and fixed data transmission service).

Guiding principles of the universal service

Under the legal framework, the universal service is guided by principles of equality, continuity and affordability, in order to meet the needs of the population and economic and social activities.

Universal service providers and provider designation mechanisms

The law provides for the possibility of designating one (or more) provider(s) of the universal service, whereas it is incumbent upon the government to designate the relevant organisation(s) through the Bureau of Telecommunications Regulation, the government agency responsible for the regulation, supervision, promotion and coordination of all activities related to the telecommunications sector.

75. See. Article 3

76. Originally concluded in 1999, the Contract was subject to interim reviews, the latest of which, conducted in 2009, extended the term of the Contract until 31 December 2016, renewable for another 5 years.

To date, this issue has not been made object of separate regulation by the Government, and the services included within the scope of universal service in the region are provided by CTM pursuant to the Concession Contract.

In any event, and despite a lack of specific regulations in this regard, licences issued by the Government refer to the obligation of the operators in order to "fulfil the universal service obligations and support the respective costs, according to the specific applicable regulation" (for example, see Licence 2/2007 issued to the Hutchison Telephone (Macau) Company Limited" and Licenses 1/2007 and 3/2007 issued to "China Telecom (Macau) Limitada").

Universal Service Financing

Since the universal service is not yet regulated, there are currently no rules in this regard.

Calculation of universal service costs

Since the universal service is not yet regulated, there are currently no rules in this regard.

The regime governing universal service/universal access pricing

The prices associated with the universal service are established under the Concession Contract and may be amended by mutual agreement between CTM and the Government.

The tariff review will take place in accordance with the provisions specifically set out in articles 35 et seq. of the Concession Contract, in which it is stipulated that there must be reasoned motives for such a review. For this purpose, the following factors should be taken into consideration: (i) the rate of inflation and trends in production costs, as correspond to an efficient service with prudent management; (Ii) fees and tariffs charged by other telecommunications operators in the territory and countries with characteristics similar to those in Macau, China (specifically Hong Kong and Singapore); (Iii) reductions in costs due to technological development; (Iv) the obligation imposed on CTM to promote the proper development of the service in terms of quality, quantity and diversity and to ensure continuous updating; and (v) the impossibility of achieving productivity gains to absorb the increase in costs that is the basis of the application for review.

The Bureau of Telecommunications Regulation has, in accordance with Regulation 5/2006, competence to enforce compliance with the obligations applicable to operators in this regard, given that it is responsible for ensuring the existence and functioning of the universal service.

Guarantee of quality of service

Under the Concession Contract, CTM is bound by general obligations with regard to quality of the services provided.

First, the law states that the government has the right to take all steps which it deems necessary to enforce compliance with the Contract and to check, whenever and in the manner it sees fit, the accuracy of the data and information provided by CTM.

Rights of consumers covered by the universal service

There is no provision in legislation.

Projects and initiatives related to the Universal Service/Universal Access

The context of Macau, China, the particular characteristics of the region — in particular, its small size, high average standard of living and economic capacity and the fact of there is a public telecommunications service concession, means that there has been no need to develop the universal service.

Nevertheless, note is made of the WI-FI Go initiative, which allows free access to the wireless broadband service. This service is provided free of charge by the government, enabling access to the Internet at specific locations in the region (for example, government offices, public facilities and tourist sites). On 1 January 2015, the number of hot spots covered by this service reached 164, in contrast to 486 hot spots provided in total by operators.

5.3.6.4 The current situation

Organisation(s) responsible for ensuring the provision of universal service/universal access: CTM — Companhia de Telecomunicações de Macau

Services included in the Universal Service/Universal Access: fixed telephone service (i) local (fixed telephone, telegraphic service, fixed telex service and switched data transmission service); and (ii) international (fixed telephone, telegraphic service, fixed telex service, where entailing addressing of calls established in real time and fixed data transmission service)

Other additional obligations: N/A

Form of designation: Concession contract

Financing and contributions to the fund: N/A

5.3.7 Mozambique

5.3.7.1 General data on the country and the electronic communications sector[77]

77. Data taken from the World Fact Book and corresponding generally to 2014 estimates (reported in May 2015) and ARCTEL-CPLP Observatory (2012 data), ARCTEL-CPLP Communications Yearbook 2012 and research carried out by VdA.

General information

The Republic of Mozambique, is a country located in southeast Africa, bordered by the Indian Ocean to the east and Tanzania to the north; Malawi and Zambia northwest; Zimbabwe to the west and Swaziland and South Africa to the southwest.

Official language: Portuguese

Total area: 799,380 km^2

Population: 24,692,144

GDP (per capita): USD 1,100.00 (2014 estimate)

Major International Organisations[78]: CPLP, African Unionm CRASA, SADC, UPU, United Nations/ITU

Electronic Communications Sector

Overall Assessment: Mozambique has one of the lowest telecom indicators in sub-Saharan Africa[79], however, the country's wealth is expected to grow sharply over the coming years, which, of course, will impact this sector and even the capacity of the population to acquire new electronic communications services. The electronic communications sector is — and has the potential to be even more — crucial in the socio-economic development of the country and has been seen as a priority.

National communications: The fixed telephone service market is incipient in Mozambique — about 0.3 phones per 100 inhabitants[80] — with only one fixed-line operator, Telecomunicações de Moçambique (TDM).

Although the market has been liberalised since 2007, this is the only operator in the market and no other has shown an interest in providing this service.

Even in the case of mobile telephony, penetration has not reached the values achieved in some other African countries. The market has been liberalised since 2001, with three operational service providers — Moçambique Celular (Mcel), in operation since 1997 with the largest market share, Vodacom Moçambique since 2003 and Movitel since 2012 — which has boosted the market, while by 2014, no network operator was yet willing to cover the whole country and the prices of mobile telephony remained high given the population's standard of living.

Penetration (2013 data):

- Fixed telephone service: 0,3%
- Mobile service: 48%
- Fixed broadband: 0,08%
- Mobile Broadband: 1,78%

International communications infrastructure: Mozambique is served by two submarine cables — the Eastern Africa Submarine System (EASSy) and SEACOM/TATA TGN-Eurasia, and there is also available satellite capacity.

Capacity to offer broadband services (fixed and mobile): The broadband network in Mozambique still has little expression in terms of coverage but is an area of current focus by the sector and the area that has seen most demand by the population, so that significant growth is expected in the coming years.

78. Not exhaustive.

79. November 2014 data.

80. Data obtained from the Eaglestone Securities report on the Mozambique telecommunications market, May 2014.

Relevant public bodies in the electronic communications sector:

- **National Regulatory Authority:** Instituto Nacional das Comunicações de Moçambique (INCM)

INCM is a public institution with legal personality and administrative, financial and asset management autonomy; its principal functions are the regulation and supervision of the postal and telecommunications market, as well as oversight of spectrum management and radio broadcasting frequencies.

Website: http://www.incm.gov.mz/

- Ministry of Transport and Communications that oversees INCM

Website: http://www.mtc.gov.mz/

5.3.7.2 Legislation/regulation of relevance to the characterisation of the universal service and universal projects

Mozambique — Relevant Legislation	
Scope and Financing of Universal Service	
Law no. 8/2004 of 21 July	Approves the Lei das Telecomunicações (Telecommunications Law), defining the general bases of the telecommunications sector in order to ensure market liberalisation and a competitive regime, providing for the universal access service. This law was the subject of a draft revision put to public consultation in 2014. The new version aims to develop the electronic communications sector, especially changing the provisions on upholding competition, the efficient use of infrastructure, infrastructure-sharing and quality of service.
Decree no. 69/2006 of 26 December	Approves the Regulation governing the Universal Access Service Fund, establishing the rules for the fund and the financing of telecommunications programmes and projects in the territory of Mozambique
Ministerial Decree no. 79/2007 of 4 July	Sets the value which all undertakings licensed or registered in the exercise of the activity of provision of public telecommunications services are required to contribute to the Universal Access Service Fund
Resolution no. 54/2006 of 26 December	Approves the Telecommunications Strategy and the specific strategy applicable to the service of universal access to telecommunications
Other Legislation / Relevant regulations	
Decree no. 33/2001 of 6 November, as amended by Decree no. 44/2004 of 29 September	Approves the Regulation on the regime governing licensing and registration for the provision of public telecommunications services and the establishment and use of public telecommunications networks
Decree no. 32/2001 of 6 November	Defines the form of organisation and operation of Instituto Nacional de Comunicações de Moçambique
Decree no. 6/2011 of 3 May	Approves the Regulation on Quality of Public Telecommunications Services

5.3.7.3 Legal and regulatory framework governing the universal service and ongoing projects

Concept and Scope of the Universal Service

Universal service[81] is provided for in *Lei das Telecomunicações* (Telecommunications Law)[82] and in the Telecommunications Strategy, which define it as a "*set of specific obligations inherent to the penetration of basic public-use telecommunications services, including advanced telecommunications services, at affordable prices, with a view to the fulfilment of the communication needs of rural communities and of the economic and social activities in the country, through the Universal service Fund*".

81. In fact, Mozambique legislation defines the concept of access and not of the universal service.

82. See articles 38 et seq.

Under the Telecommunications Law, INCM is required to establish annual objectives for the services to be offered, in order to ensure that the public telecommunications service (particularly the basic telephone service) is accessible to the greatest number of users. For this purpose, the law states that the scope of universal access encompasses fixed telephony and mobile telephony services, as may be operated by public or private companies.

INCM is called on to devise specific projects for universal access, at least every two years, taking into account the following assumptions:

(i) The installation of telecommunications systems in geographic areas where their operation is not economically viable, in order to achieve a higher level of penetration in the provision of telecommunications services in all rural communities;

(ii) Public access to telecommunications services throughout the national territory through telecentres and other means of access;

(iii) Projects to make access to telecommunications services available to users with physical disabilities or other special needs;

(iv) Creating conditions for training to ensure the maintenance of equipment and infrastructure of such projects.

In the 2006 Telecommunications Strategy, it is stated that the Government will develop a universal access programme for telecommunications, whose main objective is to ensure that all citizens are able to benefit from access to basic communication services and to promote progressive access to a wide range of information communication services; this is supplemented by specific obligations imposed on operators in the context of universal service obligations.

Regardless of the legal requirements, this Strategy defines telephone and internet services (not provided directly by law) as basic services for the purpose of universal access programmes, as follows:

(i) Telephone services

These services will be made available at two levels, (a) direct public access in all rural areas and population centres of the villages above the specified minimum of 500 inhabitants and (b) public access achievable within a maximum distance of 5 kilometres, for all population centres. In addition, the strategy provides for the creation of a National Emergency Telephone Service to facilitate best response in cases of disaster and emergency at national level. INCM is responsible for facilitating the planning and practical implementation of this system in coordination with network operators and defence and security institutions;

(ii) Internet Services

Public Internet and information access services will be available through the establishment of Internet Points of Presence in all district capitals and at least one public access facility. INCM is responsible for defining indicators and appropriate targets for achieving universal access across the country within a reasonable time and eventually accomplishing the universal access service.

As such, the services to be provided in the context of the provision of universal access will be provided on a project/programme/activity basis, provided they meet the scope of requirements and are encompassed within these provisions.

Implementation of the guiding principles of the universal service

The key goals of universal service are to ensure that all citizens can access a basic level of electronic communications services and promotion of progressive access to a wide range of information communication services.

Universal service providers and provider designation mechanisms

Under the law, the universal service, set out through processes/projects/activities, can be provided by more than one company.

The process of designating providers is carried out through a public tender, without discrimination, and the licenses awarded to telecommunications operators include the conditions governing the provision of the universal access service, provided that these obligations are proportionate, transparent and non-discriminatory.

Universal service financing

Financing of the universal access service projects is ensured by the *Fundo do Serviço de Acesso Universal* (Universal Access Service Fund).

The Universal Access Service Fund has the sole purpose of financing the net costs of providing services in the context of mandatory provision of universal access service and the offer of special tariffs for certain categories of users, in order to ensure their accessibility to services.

All companies which are licensed or registered in the exercise of the activity of provision of public telecommunications services are required to contribute to the Fund with up to 1% of gross revenues in respect of the previous year (some entities are exempted from this percentage).

The Fund's resources will be applied in programmes, projects and activities included in the plans approved as universal access service, with priority given to projects for rural areas.

The following operators and telecommunications service providers are eligible for financing through the Fund: those which (i) have made the necessary contributions, (ii) comply with the conditions set out in the telecommunications licence or registration granted by INCM and (iii) do not repeatedly violate regulatory standards. Young people who initiate activities in this area are likewise eligible where duly licensed or registered. The network that is built by these providers exclusively with the amounts of the Fund will be considered property of the Mozambican State, with the operator enjoying the rights of concessionaire.

The revenues of the Fund comprise (a) the contributions made by telecommunications operators and service providers; (b) appropriations designated in the State Budget; (c) interest on deposits; (d) the balances derived from the previous accounting year; (e) other donations granted to the fund.

Calculation of universal service costs

Legislation does not establish rules for calculating the costs of the universal access service, mentioning only that they will be covered by the Universal Access Service Fund.

Universal service pricing regime

Legislation states that the universal access service is provided at affordable prices, but does not specify the mechanisms that will be used for the definition and control. However, the law establishes that the tariffs charged under the universal access service will be the responsibility of the Government and that operators and providers when providing services under the universal access telecommunications service may not provide services without submitting the respective tariffs to INCM for analysis and recommendation to the Government for approval.

It is also stated that the regime governing the tariffs of the universal telecommunications access service will be made subject to specific regulation (although this has not happened to date).

Guarantee of quality of service

The universal access service is to be provided with the quality of service required under the respective licences and specific regulation.

In any case, at a general level, obligations are defined as regards information on performance levels; these obligations are applicable to the providers of the universal access service when providing this service, both under the Lei das Telecomunicações (Telecommunications Law) and under the Regulamento sobre Qualidade de Serviços Públicos de Telecomunicações (Regulation on the Quality of Public Telecommunications Services).

Rights of consumers covered by the universal service

Mozambique legislation already lays down specific provisions to ensure certain rights of users of electronic communications service covered by the universal service regime - regulations to govern the telecommunications service provided as part of the universal access service are adopted following a hearing of organisations representing consumers, as a measure to protect user rights.

Moreover, provision of a universal access service is subject to compliance with the general rules of consumer protection.

Projects and initiatives related to the universal service

For the purposes of this study, the following projects are highlighted:

(i) Internet pilot service (POPs) in Zambézia and Nampula executed by INTRA, Lda.;

(ii) Mobile telephone project for satellite transmission with 5 km coverage from Matchedje district to the border with Tanzania ($ 200,000 allocated to this project);

(iii) Pilot project for tele-centres and Internet Community Access Points (funded by the World Bank).

5.3.7.4 The current situation

Body responsible for ensuring provision of the universal service: Mcel is responsible for provision of certain services under the universal access regime. Universalisation obligations have been imposed in the context of the 2012 tender won by Mcel for construction of BTS sites in 14 locations for the provision of voice, data and Internet, and construction of public pay-telephones, a project of approximately $4,000,000, financed by the Fund.

Services included in the universal access service: Telephone service in certain parts of the country, national emergency telephone service and internet services available through the establishment of Internet Points of Presence in all district capitals and at least one public access facility.

Form of designation: through public tender

Financing and contributions to the fund: The Universal Access Service Fund is being implemented and in operation, whereby revenues of the universal service fund comprise contributions made by operators and telecommunications service providers, the appropriations designated in the state budget, interest on deposits, the balances derived from the previous accounting year and other donations granted to the fund.

Other entities which have obligations/powers in respect of the universalisation of telecommunications **services:** N/A

5.3.8 Portugal

5.3.8.1 General data on the country and the electronic communications sector[83]

General information

Portugal is a country located in southwestern Europe, whose territory is located in the western part of the Iberian Peninsula and with archipelagos in Macaronesia (North Atlantic). The Portuguese territory is bordered to the north and east by Spain and to southwest by the Atlantic Ocean; it comprises the Portuguese mainland and two autonomous regions: The Azores and Madeira.

Official language: Portuguese

Total area: 92,090 km^2

Population: 10,375,800[84]

GDP (per capita): USD 18,585[85]

Major International Organisations: EU, CPLP, United Nations, NATO, ITU, OECD, UNESCO, WTO.

83. Data taken from the World Fact Book and corresponding generally to estimates from 2014 and Observatory of ARCTEL-CPLP (2012 data), ARCTEL-CPLP Communications Yearbook 2012 and research carried out by VdA.

84. Resident population, according to information reported on 10 July 2015 by Eurostat.

85. Data published in May 2015 by Eurostat

Electronic Communications Sector

Overall Assessment: In the context of the EU region, Portugal has a medium-sized telecommunications market, characterised by a very strong mobile segment, and in recent years, steady growth in the fixed broadband subscriber base (supported by coaxial cable, optical fibre and DSL). The relevance of this sector is evidenced by the fact that it is contributing about 3% to GDP[86].

The liberalisation of fixed and mobile networks and the market entry of new telecom operators contributed to increased competition, improved quality of service and a reduction in tariffs.

Optical fibre Next Generation Networks (NGN) were considered by the government in 2008 as a strategic priority in the electronic communications sector; Fibre to the home (FTTH/B) network coverage has increasingly expanded, by which Portugal was able to reach third position in the ranking of EU28 in 2013 (fourth position in 2012).

National communications: Resulting from the consolidation operations seen in Portugal between 2013 and 2015, there are currently three large telecommunications groups/companies in the market (Grupo Altice[87], NOS, Vodafone)[88] — two of these have both fixed and mobile networks. The provisions of universal service are provided by MEO[89] and by NOS. Portugal has fixed networks that enable coverage of almost the entire country and most of these networks enable high speeds.

After a period of decline following market liberalisation and the emergence of new competitors, the fixed access market grew from 2008. This trend is due mainly to an increase in bundled offers, driven by the offer of subscription television services, which have high penetration rates in Portugal. However, and in line with the rest of the world, Portugal has also seen a decline in the use of fixed telephone services, especially as a result of cannibalisation by mobile voice services (and more recently also by OTT[90] services which allow voice communications).

Portugal was the first country in Europe to launch the concept of pre-paid mobile services and has one of the world's highest penetration rates (nearly 160%) and a very competitive market. There are three operators with their own infrastructure (MEO, NOS and Vodafone) and three MVNOs (CTT, Lycamobile and Mundio Mobile), with talk of the possibility of another virtual mobile operator (ONI/Cabovisão).

Penetration rates (data from 1st quarter of 2015)[91]:

- Fixed telephone service: 44.6%
- Mobile service (prepaid and post-paid): 157.8%
- Fixed broadband: 27.8%
- Mobile broadband: 47.6%

International communications infrastructure: Portugal is served by several international and national submarine cables, and also has satellite capacity.

Capacity to offer broadband services (fixed and mobile): Portugal has several networks allowing fixed and mobile broadband access, including high-speed networks supported over optical fibre, DOCSIS 3.0 and LTE.

86. Data taken from ANACOM's study of the communications market in the national economy (2009-2013), published in October 2014.

87. In March 2015, the European Commission stated its non-opposition to the sale of PT Portugal Oi, S.A. to Altice, while imposing a commitment entailing the sale of Altice's holdings in ONITELECOM and Cabovisão.

88. In data released on the subscriber shares in 1st quarter of 2015 (see http://www.anacom.pt/render.jsp?contentId=1361319&languageId=1), ANACOM identifies the following groups/companies: MEO, Grupo NOS (NOS, NOS Madeira and NOS Açores), Vodafone, Grupo Altice (Cabovisão and Onitelecom) and others

89. Currently part of Grupo Altice.

90. Over the Top Services.

91. Data available at http://www.anacom.pt/render.jsp?contenId=1359494

Relevant public bodies in the electronic communications sector:

- Autoridade Nacional das Comunicações (ANACOM) (www.anacom.pt)

  ANACOM is a legal person governed by public law, construed as an independent administrative entity with administrative, financial and managerial autonomy and its own assets. It is responsible for technical and economic regulation, supervision, regulation of the electronic communications and postal sector and provides assistance to the Government in these areas.

- Autoridade da Concorrência (Portuguese Competition Authority) http://www.concorrencia.pt
- Ministry of Economy and Employment, responsible for defining the communications policy for the country
- European Commission http://ec.europa.eu
- DG Connect
- DG Competition

5.3.8.2 Legislation/regulation of relevance to the characterisation of the universal service and universal projects

Portugal — Relevant Legislation	
Scope of Universal Service	
Law no. 5/2004 of 10 February, amended and republished by Law no. 51/2011 of 13 September, and subsequently amended by Law No. 10/2013 of 28 January, by Law no. 42/2013 of 3 July, by Decree-Law no. 35/2014 of 7 March and Law no. 82-B/2014 of 31 December 2014.	Establishes the legal regime applicable to electronic communications networks and services and associated facilities, and defines the powers of the national regulatory authority provided for in the Directives of the European Union on such matters.
Administrative Rule no. 318/2012 of 18 October	Approves the component documents of the procedures for the selection of the provider or providers of the three components of the universal electronic communications service
Resolution of Council of Ministers no. 50/2012 of 22 May, as amended by Resolution of Council of Ministers no. 66/2012 of 6 August	Resolution on the decision to select the provider or providers of the universal electronic communications service by means of three tenders limited by prior qualification.
Resolution of Council of Ministers no. 66-A/2013 of 18 October, and Resolution of Council of Ministers no. 70-B/2013 of 8 November and Resolution of Council of Ministers no. 32-B/2015 of 22 May 2015	Legislation which, in relation to the provisions of the three components of the universal service — FTS, public pay-telephones and comprehensive telephone directory and directory enquiry service, — set out to designate the respective providers
Resolution of Council of Ministers no. 7 B/2015 of 20 February	Decision to open the procedure for the selection of the undertaking to be designated for the provision of the universal service provision of a comprehensive telephone directory and a comprehensive telephone directory enquiry service, by public tender
Administrative Rule no. 50-A/2015 of 25 February	Approves the schedule and specifications of the public tender for the selection of the undertakings to be designated for provision of the universal service provision of a comprehensive telephone directory and a comprehensive directory enquiry service
Financing	
Law no. 35/2012 of 23 August	Constitutes the Universal Service Compensation Fund of electronic communications and establishes determination of the contributing entities and their contributions, as well as the criteria for allocating the net costs of universal service among companies required to contribute to the Fund
Other Legislation/Relevant regulations	
Determination of ANACOM of 09 June 2011	Determination on the concept of unfair burden and the methodology for calculating the net cost of universal service to be applied from 2007 until the end of the provision of the universal service occurring prior to the designation of providers of the universal service by tender

ANACOM Determination of 07 February 2012	Establishes the manner in which the values of the net costs of universal service which result from tenders associated with the FTS and public pay-telephone component are considered unfair burdens and object of financing
E-escolinha Programme, 2008	Project which involved subsidising the purchase of portable computers by people in most financial need
Public Tender for high-speed electronic communications networks in the North, Alentejo, Algarve, Azores and Madeira	Five tenders were launched in 2009 for the installation, management, operation and maintenance of high-speed electronic communications networks in "remote areas" of the country, financed by Community aid
Decree-Law no. 39/2015 of 16 March	Approves the new statutes of ANACOM

5.3.8.3 Legal and regulatory framework governing the universal service and ongoing projects

The current legal framework of the universal service in Portugal is laid down in the *Lei das Comunicações Eletrónicas* (Electronic Communications Law), which constitutes a transposition of the regulatory framework adopted at European Union level[92]. It is also laid down in the components which comprise the tender procedures launched in 2012, culminating in the designation of then three different providers (currently 2, NOS and MEO)[93] for the various components of the universal service[94], and in a series of ANACOM determinations, as regards matters within its competence, which regulate and/or specify certain areas of universal service; these include the conditions and specifications to be observed in the offer of the various components of the universal service, as incorporated into contracts concluded with providers designated by the Government at the end of 2013, the definition of unfair burden for the purposes of net calculations of universal service and the respective calculation methodology for the period from 2007 to mid-2014 (date on which the providers designated by tender commenced universal service provision).

Concept and Scope of the Universal Service

The universal service is defined in Lei das Comunicações Eletrónicas (Electronic Communications Law) as *a set of defined benefits* [in the LCE], *of specified quality available to all end-users, regardless of their geographical location and at an affordable price*.

Under the current regulatory framework in Portugal, the universal service has the *objective* of ensuring that all end-users have access to a predefined set of minimum provisions. This objective makes up a core task of the Portuguese State, constitutionally enshrined and embodied in the promotion of the population's well-being and quality of life[95]. In this context, access to the provisions which are part of the universal service is of particular importance in promoting balanced socio-economic development, enabling correction of regional imbalances. So much so that, in pursuing these goals, it is also ensured that the universal service is provided with a minimum guarantee of quality of service which is binding upon its provider.

In Portugal, the universal service includes the following provisions, to be provided as follows:

(i) Access/connection to the public communications network at a fixed location and telephone services at a fixed location

The universal service providers are required to meet all reasonable requests for connection to a public communications network at a fixed location and provision of publicly available telephone services through that connection, which should enable end-users to establish and receive

92. See chapter 4.2 above.

93. In 2012, ZON and Optimus were the companies designated as providers of the universal service component comprising the telephone service at a fixed location, in the south and islands (ZON) and northern and central areas (Optimus). Following a merger process in 2013, ZON and Optimus combined to form a single company (NOS). MEO was the company designated as provider of the universal service component comprising provision of public pay-telephones and also for the offer of comprehensive telephone directory and directory enquiry services.

94. On 26 February 2015, a tender procedure was announced for the conclusion of the contract for provision of the universal service provision of a comprehensive telephone directory and directory enquiry service. Under this procedure, the contract was awarded to MEO.

95. See Point d) of Article 9 of the Constitution of the Portuguese Republic

voice communications, fax communications and data communications, with speeds sufficient to permit functional Internet access, taking into account prevailing technologies used by the majority of subscribers and technological feasibility. The provided telephone service shall allow subscribers and users to make and receive national and international calls and access the various emergency services through the national emergency number defined in the *Plano Nacional de Numeração* (National Numbering Plan).

This provision can be made either using fixed electronic communications networks or mobile electronic communications networks, provided that the respective providers are legally authorised to offer electronic communications networks and services at a fixed location and fulfil requirements to meet all reasonable end-user requests for access thereto.

In the context of this provision, the universal service provider must also allow narrowband Internet access enabling a 56 Kbps data rate. This access to the Internet should be available at no additional fixed cost in terms of network access over the monthly subscription charge for connection to the communications network.

(ii) Provision of public pay-telephones

Under the law, providers of this universal service component are required to install and provide a specified stock of public pay-telephones, which are to allow:

• establishment of local and national telephone calls involving geographic and non-geographic numbers, in accordance with the *Plano Nacional de Numeração* (National Numbering Plan), and international telephone calls;

• free access to the different emergency services, using the single European emergency '112' number or other emergency and helpline numbers defined in the National Numbering Plan, without use of coins, cards or other means of payment; and

• access to a comprehensive telephone directory as defined in paragraph c) of paragraph 1 of article 89 of the LCE.

Provision of comprehensive telephone directories and directory enquiry services

The availability of this full universal service component includes the following provisions/ obligations:

• Preparation, publication and availability to end-users of a comprehensive telephone directory (printed and/or electronic) which, subject to legal provisions on personal data privacy and protection, includes data on all subscribers to publicly available telephone services;

• Update and provision of the directory referred to in the previous paragraph on an annual basis;

• Providing end users with a directory enquiry service, through a short number, involving the disclosure of the data from the telephone directory referred to in point (a);

• The principle of non-discrimination in the treatment and presentation of information that is provided to the universal service provider, including information provided by other companies.

Recently, on 30 January 2015, ANACOM approved a set of specifications on this component of the universal service, whereby it the obligation of the designated provider of telephone directory services was determined as entailing provision of the directory in electronic format and in printed from (according to an *opt-in model*). As such, with the entry into force of the contract governing provision of this universal service component, users would be provided with a comprehensive telephone directory in electronic format but would only receive a printed version of the directory upon request to the universal service provider; this request must be made within the period allowed for this purpose, each year with regard to the directory of the following year.

In addition, the universal service providers may also be required to make specific offers available in order to enable access for people with special needs, under terms equivalent to those of other users in each of the components that make up the universal service. These special offers mainly target groups of users with disabilities or impairments of a physical nature and groups of low-income users.

It should also be noted that, under the LCE, "*the scope of the universal service shall evolve in line with advances in technology, market developments and changes in user demand, which scope shall be modified where justified by such evolution*". Accordingly, where there is a need to carry out a review of the scope of universal service, and since this scope emanates from legislation, the review may only take place pursuant to legislative act, and, given Portugal's regional status, in line with solutions defined in law at European Union level.

The Government and the NRA may, in pursuit of their respective responsibilities: (i) adopt the most efficient and appropriate solutions to ensure the achievement of universal service in accordance with the principles of objectivity, transparency, non-discrimination and proportionality; and (ii) consider that this is essential to minimise market distortions, in particular the provision of services at prices or subject to terms and conditions which depart from normal commercial conditions, while safeguarding the public interest.

Implementation of the guiding principles of the universal service

The entities that intervene as regards provision of the universal service should conduct their activities taking into account the following principles and the respective definitions laid down in legislation and in the determinations of ANACOM governing the matter:

(i) Universality — the universal service shall be available to all end-users regardless of their geographical location;

(ii) Accessibility — ensure that pricing conditions are affordable by the population;

(iii) Non-discrimination — ensure that the same conditions are given to all citizens without prejudice to the application of specific measures for certain groups of end-users / specific groups (e.g. retirees and pensioners, people with special needs).

Universal service providers and provider designation mechanisms

Under the law, the universal service can be provided by more than one company; the provisions may be differentiated by what they include or by geographical areas, without prejudice to the possibility of provision throughout the national territory. The provider designation process must be effective, objective, transparent and non-discriminatory, ensuring, from the outset, that all companies have an opportunity to be designated.

The providers are designated by Resolution of the Council of Ministers, following a tender procedure organised for the purpose; the designation is then formalised in a contract[96].

The designation of new providers is always preceded by the launch of new tender procedures with a view to choosing new providers.

Universal service financing

The universal service provider is entitled to receive compensation for costs incurred by the provision of universal service where two cumulative conditions are met: (i) the provision of universal service constitutes an unfair burden on the respective providers(s) and (ii) there are CLSU — Custos Líquidos do Serviço Universal (Net Costs of Universal Service) which are deemed excessive.

96. In the contracts concluded in 2014, providers were designated for five years for the FTS and public pay-telephone components and a period of 1 year, renewable for a further 6 months (unless stated otherwise by the public contractor) for the component of the provision of comprehensive telephone directories and directory enquiry services. More recently, in the context of the tender procedure for the designation of the new universal service provider for the provision of comprehensive telephone directory and directory enquiry services, the designation was made for a period of three years.

When there are Net Costs of Universal Service which are deemed excessive by the NRA, the LCE establishes that the Government is responsible for arranging compensation, alternatively or cumulatively through: (i) public funds and/or (ii) the allocation of costs among the companies which offer public communications networks and publicly available electronic communications services in the national territory.

The concept of *unfair burden*, which should take into account the relationship between the net cost of universal service and the viability of the business of the provider(s) of the universal service, is also enshrined in national legislation, and ANACOM approved a decision on the concept of unfair burden on 09 June 2011.

The provision of the universal service of electronic communications constitutes an unfair burden for the respective provider where market share, in terms of the universal service provider's FTS revenues, calculated on an annual basis, is less than 80% and the value of the calculated net costs of universal service equal or exceed 2.5 million euros. In the context of universal service provision by undertakings selected by tender, by determination of 07 February 2012, ANACOM established that the values of the net costs of universal service resulting from the tenders would be considered an unfair burden and, as such, subject to financing.

Law no. 35/2012 of 23 August, established the universal service compensation fund for electronic communications, as provided for in the LCE, for the financing of net cost of universal service, including in the period prior to the designation of the universal service provider by tender[97].

The compensation fund is intended exclusively for the financing of the net costs of the universal service of electronic communications[98], whereby the only entities authorised to receive sums from the compensation fund are the providers of the universal service which, due to their provision of this service, are entitled to reimbursement. The values in the period prior to the designation by tender are those calculated for and from 2007 in terms of net costs of universal service and as audited and approved by ANACOM; in the period subsequent to designation by tender, the values correspond to those applied for in the tender.

The fund is a public asset without legal personality and under the referenced law, its *management* is entrusted to ANACOM; operation of the compensation fund is subject to the *principles* of transparency, non-discrimination, proportionality and minimal market distortion.

With regard specifically to its *governance*, (i) the fund is not liable in any circumstance for the debts of the entity which manages it, nor is this entity in any way liable for claims against the fund; (Ii) its accounting is independent and separate from that of ANACOM; (iii) ANACOM is responsible for organizing the accounting of the compensation fund in accordance with the rules of the SNC — Sistema de Normalização Contabilística (Accounting Standardisation System); (iv) the compensation fund's annual report and accounts are subject to an opinion formulated by the auditor or by a company of auditors and (v) these documents are published and sent to the ministry with oversight over ANACOM.

Contributions to the compensation are required from companies which offer public communications networks or publicly available electronic communications services in the national territory and which, in the calendar year to which the net costs relate, reported an eligible turnover in the electronic communications sector giving them a weight equal to or greater than 1% of the sector's total eligible turnover. For this purpose, any set of undertakings which, albeit legally distinct, are an economic unit or maintain bonds of interdependence under this law, as of 31 December of the calendar year to which the net costs relate, are considered a single company.

The company or companies responsible for providing the universal service are also counted as companies required to contribute to the compensation fund if they register eligible turnover equal to or exceeding 1% of the sector's total eligible turnover.

For the purpose of determining the contribution, this exercise is conducted annually, in line with the time limits established under Law no. 35/2012 as regards contributions paid by contributing entities and transfers to the universal service providers.

97. http://www.anacom.pt/render.jsp?contentId=1136652&languageId=1 .

98. As set out in paragraph 2 of article 1 of Law no. 35/2012.

For the purpose of determining eligible turnover in the electronic communications sector, the values of sales and services in the country are taken into account, less the amounts corresponding to: (a) revenues from activities unrelated to the offer of public communications networks and or publicly available electronic communication services; (b) revenues derived from transactions between entities belonging to the same company; (c) sales of terminal equipment.

The value of the amount payable by contributors is determined considering the net cost value to be compensated, which is distributed annually among companies required to contribute to the compensation fund, in accordance with and in proportion to the respective eligible turnover reported in the civil year to which the costs refer.

There is also an upper limit corresponding to 3% of annual eligible turnover of each entity for the value of the extraordinary contribution relating to the net costs of universal service in the period prior to commencement of provision of universal service by the providers selected by tender procedure.

Calculation of universal service costs

Under the law, there are two ways to calculate the net cost of universal service where ANACOM considers that the provision of universal service may represent an unfair burden on the respective providers: (i) calculating the net cost of the universal service obligation taking into account any additional market advantages that benefit providers; (Ii) use the net costs of providing universal service identified pursuant to a designation procedure.

As regards the net costs related to the period prior to the designation of the universal service by tender, these are calculated considering any market advantage which benefited the providers and in line with the methodology defined by ANACOM.

By determination of 09 June 2011, ANACOM defined the methodology to be used for calculating the net costs of universal service, based on the following assumptions and criteria:

(i) Analysis should be made of all means to ensure appropriate incentives so that providers comply with the universal service obligations in a cost efficient manner;

(ii) the cost of universal service obligations is calculated as the difference between the net cost, for an organisation, of operating with the universal service obligations and operating without the obligations, whether the network is fully developed or is still in a development and expansion phase; it is also necessary to correctly assess the costs that providers would have chosen to avoid had there been no universal service obligation;

(iii) it is also necessary to take benefits into account, including intangible benefits obtained by universal service providers;

(iv) calculation of the net cost of specific aspects of universal service obligations is conducted separately and in order to avoid duplication of any direct or indirect benefits and costs;

(v) the net cost of universal service obligations is calculated as the sum of the net costs of the specific components of the universal service obligations.

(vi) calculation is based on the costs attributable to:

- The determined elements of the services which can only be provided at a loss or under cost conditions which deviate from normal commercial standards; these may include access to emergency telephone services, the offer of certain public pay-telephones or the offer of certain services and equipment for users with disabilities;
- End-users or specific end-user groups, which, given the cost of providing the network and specified service, the revenues generated and any geographical averaging of prices imposed by the NRA, can only be served at a loss or under cost conditions which deviate from normal commercial practices[99].

99. For the purposes of this requirement, this category is deemed to include end-users or groups of end-users who would not be served by a commercial operator who did not have an obligation to provide the universal service.

Universal service providers are to make available all accounts and information relevant to the *above calculation*, which are to be audited by the NRA or another independent body of interested parties and subsequently approved by the NRA, whereas the NRA is responsible for maintaining availability of the results of calculations and auditing.

As regards the net costs of providing universal service by providers designated by tender, by determination of 07 February 2012, ANACOM established that the values of net costs of universal service resulting from the tenders associated with the FTS component and the offer of public pay-telephones would be considered an unfair burden and established that the ese will be the object of financing under the terms and conditions set out in the tender documents and the compensation fund's constituting instruments. In this respect, the contracts concluded with the new providers establish the amount to be financed and the form of payment.

Under the law, compensation of the net costs of universal service is transferred to the universal service providers no later than 15 months following the end of the calendar year to which the costs relate, notwithstanding any delay resulting from the late payment of contributions.

Universal service pricing regime

In order to ensure that provision of universal service is provided taking into account the need to ensure affordability of pricing for end-users of the service, ensuring that they are not barred from accessing a public communications network at a fixed location or accessing publicly available telephone services through that network, universal service prices in Portugal are regulated and subject to the principle of non-discrimination in their application, ensuring equal treatment to all users on equal terms, and the principle the geographical uniformity (*i.e.*, prices do not vary between different geographical areas).

Affordability of prices charged by universal service providers stems from the LCE[100] and it is ANACOM's responsibility to assess and decide on the most appropriate means to ensure that affordability.

ANACOM determination of 07 February 2012 defines the conditions governing the pricing of the universal service providers for the fixed telephone service and public pay-telephone components[101], and it is important to note that the starting point for pricing was established as the prices as in force on 12 October 2012 (date of publication of the tender documents).

Accordingly, in the context of providing the offer of access to the public communications network, the telephone service at a fixed location and public pay-telephones, the universal service providers are required to comply with an *annual price cap* not exceeding the consumer price index minus 2.75% applicable in conjunction to the components of the services provided[102].

ANACOM can control the prices charged by the universal service providers insofar as it periodically receives information about prices in accordance with the determinations approved for the purpose and as set out in contracts concluded with the universal service providers; ANACOM and may also request information under its general supervision powers.

Guarantee of quality of service

The Portuguese regulatory framework contains mechanisms that allow the definition of quality parameters and targets to be accomplished in the context of universal service provision.

100. See paragraph 1 of article 93

101. In the case of the telephone directory service and directory enquiry service, these conditions were amended by determination of 30 January 2015, although the new conditions will only take effect upon commencement of the service by a new universal service provider.

102. As regards the FTS, the basket includes components comprising installation, monthly subscription fee and the prices of communications to the same network. With respect to the provision of public pay-telephones, the basket includes the cost of communications to the same network and to other fixed and mobile networks.

Accordingly, determination of 07 February 2012, which comprised component documents of the tender procedures and was as such reflected in the contracts, determines the parameters and targets to be accomplished by universal service providers in the provision of services which are established in the contracts concluded between the Portuguese State and the undertakings selected for provision of the universal service.

ANACOM also monitors compliance with the service quality obligations[103].

As regards the obligations of the universal service provider in terms of quality, ANACOM determination of 07 February 2012 defines the conditions in terms of quality of service to be applied by universal service providers selected through tender and commencing respective provision in 2014 for the components of the fixed telephone service, public pay-telephones and telephone directory and directory enquiry service. ANACOM's determination of 30 January 2015 established new rules to be observed by the universal service provider for the component of telephone directory and directory enquiry services.

The quality of service provided under the universal service regime is monitored by ANACOM, which, in order to guarantee observation of established quality rules, periodically receive information from the universal service providers on defined parameters and indicators; the regulator may conduct audits as it sees fit. In addition, on an annual basis and within one month following the end of each year of provision, and in the format specified in the contract governing provision of universal service, providers are required to publish the objectives effectively completed in the year earlier on their website.

Rights of consumers covered by the universal service

Portuguese legislation sets out that the universal service provider is obliged to make available to all customers of the Universal Service Tariff a set of features and functionality, such as (a) detailed billing with a level of detail as defined in the law and without prejudice to rules governing the protection of privacy of electronic communications service users; (b) selective and free barring of outbound calls by type or to defined types of numbers and premium SMS or MMS premium tariff or other message-based value-added service upon subscriber request; (c) systems of pre-payment for access to the public communications network and for use of the publicly available telephone services (d) payment of the connection price to the public communications network in instalments; (e) measures applicable to non-payment of telephone bills in accordance with the law; (f) tariff advisory service that allows subscribers to obtain information about possible lower rates or more favourable alternatives; (g) mechanisms to control costs of telephone services, including free of charge alerts to consumers with unusual consumption patterns which reflect a significant increase from their usual average consumption values.

Projects and initiatives related to the universal service

No information was obtained on the existence of obligations of universalisation and, as far as can be ascertained, there is no provision for the implementation or design of projects and initiatives of this nature in respect of universal service.

However, there are initiatives promoted by the Portuguese Government seeking mass deployment of Information Society Services, as well as the expansion of next generation networks into remote areas of the Portuguese territory.

Accordingly, note is made of the obligations on mobile operators to which licences of spectrum use were granted following the UMTS tender launched in 2000; these operators accepted to promote initiatives of equipment allocation (computers) and a commitment to subsidise mobile broadband internet access equipment (*e-escolas* and *e-escolinhas* (e-schools) programme).

Additionally, through Resolution of Council of Ministers no. 120/2008 of 30 July, the Government defined promotion of investment in next generation networks as a strategic priority for the country. To this end, it became necessary to equip Portugal with more advanced communications networks, more innovative services and diversified modalities, which allow access to the information society.

103. See paragraph 6 of article 92 of the LCE, under which the NRA may determine independent audits or other mechanisms to verify the performance accomplished by the universal service providers, at providers' own expense, to ensure the accuracy and comparability of data offered by the providers.

Subsequently, five tenders were launched in 2010 for the deployment of optical fibre networks in rural/remote areas of Portugal (Azores, Madeira, North, Centre and South). In these areas, the free functioning of the market has revealed great difficulty in ensuring a broad offer of electronic communications services, a scenario which is not expected to change in these areas.

Under these tenders, obligations were imposed in terms of coverage and the offer of wholesale and retail services on the operators awarded the projects in question. These projects were financed with recourse to European Union funds.

Contracts governing next generation networks, as concluded between the Portuguese State and the successful tenderers (DSTelecom Algarve and Alentejo, DSTelecom Norte and Fibroglobal), were signed on 31 January 2011.

5.3.8.4 The current situation

Entities responsible for ensuring universal service provision: NOS Comunicações, S.A. ("NOS") for the FTS, and MEO — Serviços de Comunicações Multimédia, S.A. ("MEO") for the offer of public pay-telephones and provision of a comprehensive directory and directory enquiry service, under administrative contracts concluded with the Portuguese State.

Provisions included in the universal service: access to the public communications network at a fixed location and provision of publicly available telephone service through that connection, public pay-telephone service, comprehensive telephone directory and directory enquiry service.

Other additional obligations: The following are currently provided, free of charge, as part of the fixed telephone service component: (a) handset amplifying equipment, consisting of an amplifier which can be used with any terminal equipment to increase the volume of the earpiece, by up to a factor of 10, for people with hearing disabilities (telephone service); (b) call warning light, consisting of a device which provides a visual signal when a call is received on the terminal equipment; (c) simple bills in Braille; (d) fixed destination lines, enabling the automatic establishment of calls to a destination defined by the customer, whenever the key is pressed to establish a call or when the handset is lifted, and no number is dialled within 10 seconds (telephone service). In addition, the provider of this universal service component is required to offer retiree and pensioner subscribing to a single analogue network line a discount of 50% on the network line rental where the household's monthly income does not exceed the minimum wage.

In the context of the provision of directory enquiry service, the universal service provider shall ensure free availability to users with disabilities. In the context of the public pay-telephone service, the universal service provider must ensure (a) a proportion of the total number of public pay-telephones installed are adapted to wheelchairs — 5% of the total installed in each geographical area and (b) availability of 1,993 public pay-telephones in places of social interest (with specific obligations by geographical area).

Form of designation: NOS and MEO were designated universal service providers following the tender procedure established for this purpose.

Financing and contributions to the fund: the net costs of providing the universal service are financed by a public fund which is managed by ANACOM and which is funded by contributions paid by electronic communications companies which, in the calendar year to which the net costs relate, reported eligible turnover in the electronic communications sector giving them a weight equal to or greater than 1% of the sector's total eligible turnover.

5.3.9 São Tomé and Príncipe

5.3.9.1 General data on the country and the electronic communications sector[104]

General information

São Tomé and Príncipe, officially the Democratic Republic of São Tomé and Príncipe, is an island state located in the Gulf of Guinea. It consists of two main islands (Sao Tome Island and Principe Island) and several islets. It has no land borders but is situated relatively close to the coasts of Gabon, Equatorial Guinea, Cameroon and Nigeria.

Official language: Portuguese

Total area: 964 Km²

Population: 190,428 (July 2014 estimate)

GDP (per capita): USD 3,100.00 (2014 estimate)

Major International Organisations: CPLP, United Nations/ITU, African Union, Economic Community of Central African States (ECCAS)

Electronic Communications Sector

Overall Assessment: In São Tomé and Príncipe, the communications sector is particularly important because it is an island and archipelagic country. The country and the sector are of small size, which, coupled with reduced income levels among the population, poses great challenges to operators.

104. Data taken from the World Fact Book and corresponding generally to estimates from 2014 and Observatory of ARCTEL-CPLP (2012 data), ARCTEL-CPLP Communications Yearbook 2012 and research carried out by VdA.

The telecommunications sector of São Tomé and Príncipe underwent considerable changes in 2012, resulting from (a) the accession of São Tomé and Príncipe to the ACE — African Coast to Europe, Optical Fibre Submarine Cable Consortium, a process started in 2010; (b) the launch of a Public Tender within the framework of the telecommunications sector's liberalisation for the establishment and operation of a telecommunications network open to the public; (c) a study of connectivity options for the autonomous region of Príncipe Island; (d) the preparation of a strategic plan for ICT[105].

National communications: The communications market in São Tomé and Príncipe has a reduced structure. The main operator is CST (Companhia São Tomense de Telecomunicações) which provides fixed and mobile services, including Internet access. In addition, a licence was granted to Unitel STP in 2013 for provision of mobile services.

Penetration (2012 data):

- Fixed telephone service: 4.7%
- Mobile service: 71%
- Fixed broadband: 900 subscribers
- Mobile Broadband: 3,565 subscribers

International communications infrastructure: Since 2012, São Tomé and Príncipe has been connected to the submarine cable deployed under the *Africa Coast to Europe project*, which extends along the African coast and ends in South Africa.

Capacity to offer broadband services (fixed and mobile): CST has a 3G mobile network that covers 90% of the population and 80% of the territory[106].

Relevant public bodies in the electronic communications sector:

- Autoridade Geral de Regulação (AGER)

AGER is a public institution with legal personality and administrative and financial autonomy, its own budget and assets, whose purpose is to exercise the functions of regulatory authority in the telecommunications sector.

Website: http://www.ager-stp.org/

5.3.9.2 Legislation/regulation of relevance to the characterisation of the universal service and universal projects

São Tomé and Príncipe — Relevant Legislation	
Scope of Universal Service	
Law no. 3/2004 of 2 July	*Lei de Bases das Telecomunicações* (Basic Telecommunications Law) which defines the rules governing the establishment, management and operation of national telecommunications networks and the provision of telecommunications services, and defines the concept of universal service
Decree-Law no. 19/2012 of 20 August	Decree Law that defines the scope of the universal service and sets out the applicable pricing and financing regimes

105. Data taken from the ARCTEL-CPLP Communications Yearbook 2012.

106. Source: Presentation of CST "Broadband costing and pricing — The case of São Tomé and Príncipe" at ITU-D Regional Economic and Financial Forum of Telecommunications / ICTs for Africa, of 03.02.2015.

Financing	
Decree no. 27/2007 of 4 September	Grants licencing for the establishment and operation of a fixed telephone network to CST, and defining the contributions of CGT to the costs of access and universal service, as well as restrictions on the freedom to set tariffs in the context of the provision of services where on a non-competitive basis
Decree-Law no. 19/2012 of 20 August	Decree Law that defines the scope of the universal service and sets out the applicable pricing and financing regimes
Other Legislation/Relevant regulations	
Decree-Law no. 14/2005 of 24 August	Sets up AGER - Autoridade Geral de Regulação da República Democrática de São Tomé e Príncipe (General Regulatory Authority of the Democratic Republic of São Tomé and Príncipe) and approves AGER's Statutes

5.3.9.3 Legal and regulatory framework governing the universal service and ongoing projects

Concept and scope of the Universal Service

Universal service is defined as the supply to all of a quality telephone service at an affordable price, and ensures the routing of telephone communications made by or made to subscribers, as well as free routing of emergency calls, the provision of a directory enquiry service and a directory of subscribers and connection of telephone booths installed in locations open to the public.

The following services are therefor included within the scope of universal service (this minimum content should evolve where justified in line with technological progress, market development and changes in user demand):

(i) Connection to the fixed telephone network at a fixed location and access to the fixed telephone service for all users who request it;

(ii) Offer of public pay-telephones in sufficient numbers, on public roads and in public places, according to established criteria published annually by AGER for each geographical area (while considering that public pay-telephones are not widely available);

(iii) Provision of telephone directories and a directory enquiry service, including the numbers of fixed telephone and mobile telephone subscribers.

(iv) Adoption of special measures for certain social groups — operators with universal service obligations shall ensure that users with disabilities have access to the public pay-telephone service as included in the universal service.

Implementation of the guiding principles of the universal service

The universal service should be governed by principles of universality, equality, continuity and affordability, and should constitute, in an environment of full competition and in the context of the information society, a guarantee that all citizens have access to a basic level of telecommunication services of general interest, while improving the technical conditions for the most disadvantaged areas. The law gives special focus to universal access in disadvantaged areas, while AGER is responsible for defining the terms of obligations in order to ensure coverage of the country.

In addition, AGER can draw up a list setting out needs which identifies the locations of the country, in order to be able to identify those who do not yet enjoy universal service (wholly or partially). AGER may prepare a three-year coverage plan that can be submitted to compete for available or anticipated resources of the FSUT — Fundo do Serviço Universal (Universal Service Fund).

Universal service providers and respective designation mechanism

CST is currently designated as the universal service provider for the period of validity of the public telecommunications service concession contract (until 1 March 2017).

After the deadline mentioned above, the universal service provider will be designated by tender, and it is for the Government member responsible for communications to designate the person or persons responsible for providing the universal service following a tender.

Universal service financing

There is no fund for the compensation of universal service costs implemented in São Tomé and Príncipe.

The Law sets out that, for the purpose of offsetting the negative margins resulting from the universal service, a Universal Telecommunications Service Fund may be constituted; this will be managed by an independent body appointed by the minister responsible for communications.

FSUT — Fundo do Serviço Universal (Universal Service Fund) is to be funded by undertakings operating public-use telecommunications networks and fixed and mobile telephone service providers, including CST. These undertakings may be subject to an annual financial contribution of up to 1.5% (one and a half percent) of gross revenue reported in the previous year's financial period and as obtained in the exercise of the activity covered by their license or registration, less fees and or charges levied by AGER and other fees and/or charges paid to other operators or telecommunications service providers, in particular interconnection or similar fees.

Contributions from the Fund may also be obtained from (a) public or private donors interested in contributing to the development of telecommunication services in disadvantaged areas, etc.; (b) local authorities seeking promotion of the local development of telecommunications; (c) donations designated in the OGE — Orçamento Geral do Estado (State Budget); (d) interest earned on deposits; and (d) other donations granted to the fund.

The FSUT's resources will be applied, to the extent that funds are available, to programmes, projects and activities set out in the plans approved under the FSUT regulation; allocation of FSUT resources will be awarded by public tender.

Calculation of universal service costs

The costs of the universal service obligations will be calculated taking into account the difference between the net cost for an organisation operating with the universal service obligations and operating without the obligations. For this purpose, the elements of services considered shall be those elements offered on a mandatory basis and services provided to end-users or specific end-user groups that can only be served at a loss or under cost conditions which deviate from normal commercial practice, given the cost of the offer of specified network and service, the revenues generated and any geographical averaging of prices imposed by the State.

Universal service pricing regime

Taking into account the progressive adjustment of prices to costs, the adopted pricing regime shall ensure the affordability of the universal service and is established by means of convention to be concluded between the central government, represented by AGER - Autoridade Geral de Regulação and the universal service provider(s). The agreement may establish a price cap system or geographical averaging or similar.

Guarantee of quality of service

It was not possible to obtain information about possible quality levels to be guaranteed in the context of universal service.

In any case, the law requires universal service providers to accomplish the quality indicators and performance objectives applicable to the respective provisions and as defined and published by AGER on an annual basis.

Rights of consumers covered by the universal service

There is no provision in legislation.

Universalisation obligations, projects and initiatives

There are no known cases where universalisation obligations have been imposed, and no known universalisation projects and initiatives.

5.3.9.4 The current situation

Body responsible for ensuring provision of the universal service: CST — Companhia Santomense de Telecomunicações.

Provisions included in the universal service: Connection to the fixed telephone network and access to the fixed telephone service, offer of public pay-telephones and provision of telephone directories and a directory enquiry service, including the numbers of subscribers to the fixed and mobile telephone service.

Other additional obligations: CST may be required to provide access to public pay-telephones to users with special needs.

Form of designation: Currently, CST operates under a concession contract, valid until 1 March 2027. However, the law sets out that, upon conclusion of the concession, designation of new provider(s) will take place through public tender.

Financing and contributions to the fund: To date, no fund has been created although creation of a fund is provided for by law. The universal service fund telecommunications service shall comprise contributions charged to mobile and fixed service providers that meet certain requirements, by communities wishing to improve telecommunications services in their districts, by donations designated in the General State Budget, subsidies, donations and interest earned on deposits. For this purpose, the independent entity to be designated by member of the Government responsible for the area of telecommunications shall establish and collect annual contributions payable by registered operators, based on a percentage of their respective gross revenues — the contribution established for each operator may not exceed, in any case, a limit of 1.5% (one and a half percent) of their gross revenues.

5.3.10 Timor-Leste

5.3.10.1 General data on the country and the electronic communications sector[107]

General information

Timor-Leste, located in Southeast Asia, occupies the eastern part of the island of Timor, and some island territories and enclaves, sharing a land border with Indonesia and a maritime border with Australia. The capital is Díli.

Official languages: Portuguese / Tétum

Total area: 14,874 Km^2

Population: 1,172,390 (2013 estimate)

GDP (per capita): USD 6,794.00 (2014 estimate)

Major International Organisations: CPLP, United Nations / International Telecommunications Union (ITU)

Electronic Communications Sector

Overall Assessment: In Timor-Leste, the communications sector is particularly important, not only because the country is an island and archipelagic country, but also in view of the fundamental role of telecommunications in the reconstruction and growth of the country in the aftermath of the civil war and the declaration of independence. The telecommunications sector in Timor-Leste underwent major reforms in 2012, with the entry into force of a new legal and regulatory panorama for the sector, which aims to contribute to increased access to the mobile market, the internet and other services that allow an improvement in the population's quality of life and that raise the competitiveness of the country.[108]

107. Data taken from the World Fact Book and correspond generally to estimates from 2014 and Observatory of ARCTEL-CPLP (2012 data), ARCTEL-CPLP Communications Yearbook 2012 and research carried out by VdA.

108. According to the page on Timor-Leste in the World Factbook.

National communications: The national communications market suffered considerable and inevitable damage in terms of equipment and infrastructure during the country's independence process.

Following liberalisation of the sector 2012 and a competitive procedure carried out for the purpose, three operators were granted titles, authorising them to provide mobile and fixed telephone services, and Internet services: Timor Telecom, Digicel Pacific Limited (which has since withdrawn from the Timorese market) and PT Telekomunikasi Indonesia International (Telin). Following the withdrawal of Digicel Pacific Limited, the third title was awarded to another operator: Grupo Viettel, which created the current operator, Viettel Telemor, S.A. (Telemor).

Although the fixed telephony market has not undergone major adjustments or seen sharp growth over recent years, the mobile market has grown steadily, increasing from 473,020 subscribers in 2010 to 621,000 in 2012.[109]

Penetration (2014 data):

- Fixed telephone service: 0.3%;
- Mobile service: 63%;
- Fixed broadband: Data unavailable[110];
- Mobile Broadband: 600 subscribers (2012 data).

International communications infrastructure: The country has no connection to any submarine cable, and the only optical fibre connection available by land is through Indonesia (a country with a submarine cable connection on the same island). International calls are made via satellite.

Capacity to offer broadband services (fixed and mobile): there is an optical fibre backbone in the city of Dili and there are already some mobile network sites operating with 3G (but there is not yet installed 4G capacity). There are also optical fibre routes under construction and completion by Telemor across the island of Timor-Leste, with the goal of completing three main rings (West, Central and East), with branches to sites more distant from the route of the network.

Relevant public bodies in the electronic communications sector:

National Regulatory Authority: Autoridade Nacional das Comunicações (ANC)

ANC is a public institution with legal personality and administrative and financial autonomy, its own budget and assets, whose purpose is to exercise the functions of regulatory authority in the telecommunications sector.

Website: not available

Ministry of Public Works, Transport and Communications

Especially before ANC took office, the Ministry of Public Works, Transport and Communications played a key role in the relationship between operators and in overseeing market equilibrium.

Website: not available

109. Data taken from the ARCTEL-CPLP Communications Yearbook 2012.

110. Fixed and mobile broadband in Timor-Leste has seen significant changes in recent times, which are not reflected in statistical terms: in May 2014, Timor Telecom and O3b announced an agreement to provide high-speed, low-latency Internet, enabling Timor Telecom to provide high-speed broadband. Fixed broadband increased significantly as a result of the implementation of new technologies and products implemented by Timor Telecom during the term of the now expired concession contract (from 71 subscribers in 2008 to 600 subscribers in 2012).

5.3.10.2 Legislation/regulation of relevance to the characterisation of the universal service and universal projects

Timor-Leste — Relevant Legislation	
Scope of Universal Service	
Decree-Law no. 15/2012 of 28 March	Regulation of the telecommunications sector ("*DL das Telecomunicações*"), which lays down rules on the introduction, management and financing of the universal access programme in the country
Financing	
Decree-Law no. 15/2012 of 28 March	Provides for the creation of a universal access fund for the purpose of financing universal access, composed of contributions charged to telecommunications service operators
Other Legislation/Relevant regulations	
Government Resolution no. 9/2012 of 28 March	Approves the transaction agreement between the State and Timor Telecom, following the early termination of the concession contract previously signed with Timor Telecom

5.3.10.3 Legal and regulatory framework governing the universal service and ongoing projects

Concept and scope of the Universal Service

The prevailing legal framework (i.e. *DL das Telecomunicações*) does not define the concept of universal service, although the term "universal access" is used rather than "universal service".

Likewise, the "*DL das Telecomunicações*" does not define the scope of universal access, opting instead to indicate that a universal access programme will be set up, where this issue will be properly set out.

As such, it is set out in the *DL Telecomunicações* that, seeking the introduction of a universal access programme, as soon as possible, but not earlier than two years from the date of entry into force of the regulation (i.e. not before 29 March 2014), ANC should carry out a study to define a universal access programme, which is published and subsequently given to periodic review at intervals not exceeding three years. Furthermore, it is set out that prior to the publication or review of a universal access programme, ANC will consult with operators, the Minister of Public Works, Transport and Communications and the members of the Government responsible for the areas of rural development, education and health, and others.

The universal access programme defines: (a) program objectives; (b) the geographical areas covered by universal access; (c) the social, economic or demographic groups eligible for support under the programme, taking into account current and future demand for telecommunications services; (d) telecommunications services included in the universal access programme and an assessment of their current and future availability and accessibility in economic terms, taking into account any constraints in demand for such services, and (e) the competitive process for the selection of operators who should receive funding and assume universal access obligations.

The universal access programme gives priority to (a) voice telecommunications services via fixed or mobile networks; (b) telecommunications services accessible to users with special needs; (c) access to the Internet at appropriate speeds; and (d) any other telecommunications service that ANC considers appropriate, taking into account the sector's regulatory objectives, the technologies and the telecommunication services which may be available.

Implementation of the guiding principles of the universal service

The guiding principles of universal access are not defined and are to be set out in universal access programme specified by ANC.

In any case, the definition of the universal access programme and the obligations to be imposed on operators in this area will necessarily be governed by the general principles of regulation, aimed at promoting the population's sustainable economic and social welfare and ensuring the availability, accessibility and quality of telecommunications services.

Universal service providers and provider designation mechanisms

Regarding the "*designation*" of provider(s) of the services that comprise the universal access program, the law provides for their designation, or rather their selection by competitive procedure.

Under the law, and after consulting the Ministry of Finance, ANC shall establish rules procedures and guidelines for the competitive selection processes, including: (a) the process for selecting universal access projects; (b) the selection process for the distribution of funding, covering the proposals requiring lowest subsidies; (c) the process to request the presentation of proposals; (d) the eligibility criteria; (e) the project requirements (including continuous oversight), etc.

In selecting an operator as a recipient of universal access funding, ANC shall consider: (a) whether the proposal ensures the provision of a telecommunications service in the geographical area indicated, or for the social, economic or demographic group in question; (b) the amount of funding that the operator requires from the Fundo de Compensação de Acesso Universal (Universal Access Compensation Fund) to implement its proposal; and (c) the operator's financial, technical and operational capacity to implement the proposal.

Universal Service Financing

ANC shall establish a compensation of universal access fund for financing purposes and maintain this fund separately, in all aspects, from the Authority's other funding mechanisms.

The compensation fund is composed of (a) contributions payable to ANC, (b) loans, grants and donations made to the universal access compensation fund, and (c) appropriate values from the consolidated fund of Timor-Leste.

The Authority may establish and collect annual contributions payable by registered operators, in the form of a percentage (adjusted annually as necessary) of their respective gross revenues to accomplish the universal access programme of the following year.

Contributions may only be charged after the end of the second year following the entry into force of the legislation (i.e. after 29 March 2014) and, in any case, the ANC only determines their collection of if considered as an economically efficient means of achieving the universal access goals defined in the approved programme.

The contribution of each operator shall not exceed, in any case, 1% of gross revenues. ANC may exempt any operator from payment of the contribution, if its gross revenues from the provision of telecommunications services is less than $ 10,000.

The law sets out that the values of the universal access compensation fund will be used to finance the operators who undertake to use these funds to accomplish the respective obligations of universal access, as specified in accordance with the universal access programme, as well as fees of external consultants related to the universal access programme.

The law also stipulates that funding should not be awarded for universal access to telecommunications services if there are telecommunications services available which may be considered substitutes or if it is expected that such substitute services will become available.

Calculation of universal service costs

In Timor-Leste this concept is not provided for in the legal framework.

Universal service pricing regime

In East Timor there is currently no regulation of universal access/universal service pricing.

Guarantee of quality of service

The criteria governing the quality of services to be provided under the universal access programme, and the terms of verification, supervision and monitoring by ANC, shall be determined under the universal access programme.

Rights of consumers covered by the universal service

Legislation does not contain specific provisions to ensure the rights of electronic communications service users within the specific framework of a universal access system (given that such rights and the appropriate framework will depend largely on the scope defined in the universal access programme).

In any case, there are general consumer protection laws, which will also apply in the application of the universal access program, namely: transparency and ease of access to information as to the services provided, through the provision of clear information about (i) operator reference offers, (ii) the respective retail prices, (iii) post-paid and pre-paid billing, (iv) the provision of free access to emergency services; (v) the provision of user support services (including setting up a telephone service subscriber helpline for receiving complaints and prompt assistance in the contracting of services, billing and collection).

The Authority may also impose quality of service requirements and parameters as regards the form and type of information to be made available, taking into account the markets and public covered, and in order to facilitate easy understanding and reliability of such information. But once again these requirements are not specific to the universal access scheme.

Universalisation obligations, projects and initiatives

Since the universal access programme is not yet defined, it is not possible to indicate obligations of universalisation, projects and initiatives under the legislation in force.

In any case, currently, Timor Telecom and other operators are engaged in several initiatives to promote access to telecommunications services among communities with reduced financial power and/or which are geographically distant from the large urban centres. There is also a company, Catalpa International, which, on its own or in partnership with operators, has developed projects that relate to the social needs of the country and electronic communications.

Other examples of ongoing projects include CCIs or Internet community centres (centres equipped with computers with Internet access — such as Largo de Lecidere — provided free of charge to the entire population, in partnership with religious institutions, national enterprise groups and Conselho Nacional da Juventude de Timor-Leste (National Youth Council of Timor-Leste)[111], the Liga Inan project (a partnership between Timor Telecom and Catalpa International that enables pregnant Timorese women from 3 districts of the country to keep in permanent contact with midwives accompanying their pregnancies — by sending messages on best practices and needs inherent to pregnancy —, the time of delivery and any existing needs in both phases), the Alfela project (an online database comprising data on women and children in need of legal support because of abuse and maltreatment, allowing support teams to reach these people).

111. Information available at http://www.timortelecom.tl/

5.3.10.4 Current situation

Since accomplishment of universal service / universal access is based on a programme that will be defined by ANC and this is not yet defined, there is presently no universal access policy in Timor-Leste.

Undertaking(s) responsible for ensuring the provision of universal service: None designated

Provisions included in the universal service[112]: Not yet identified

Other additional obligations: N/A

Form of designation: N/A

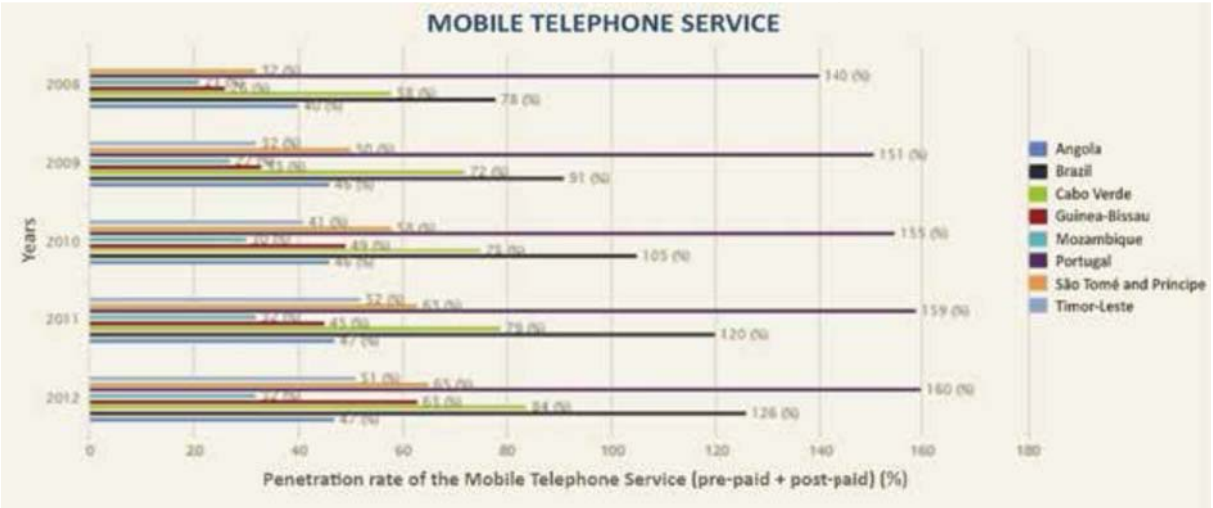
Financing and contributions to the fund: A fund has not yet been set up and operators/service providers are not subject to any contributions to a universal access fund.

5.4 Important specific indicators[113]

One last point in this chapter is to highlight some relevant indicators from the CPLP countries in the field of fixed and mobile telephone service, Internet access and cable television. Although these are statistics from 2012 (and therefore some are already outdated) the available data provides for some interesting comparisons between CPLP countries.

5.4.1 Telephone service

Figure 1



112. The law does not define the universal service, focusing instead on the concept of universal access, to be established by a programme to be defined by ANC.

113. All graphs in this chapter were taken from the Telecommunications Observatory, available in the website of ARCTEL (http://www.arctel-cplp.org/observatorio) excluding Macau.

Figure 2

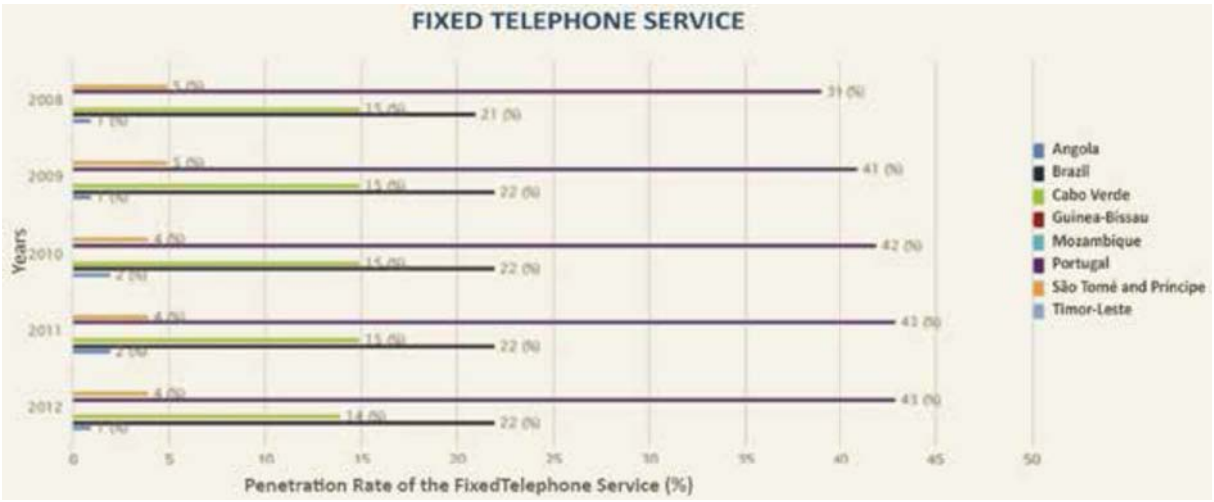


Figure 3

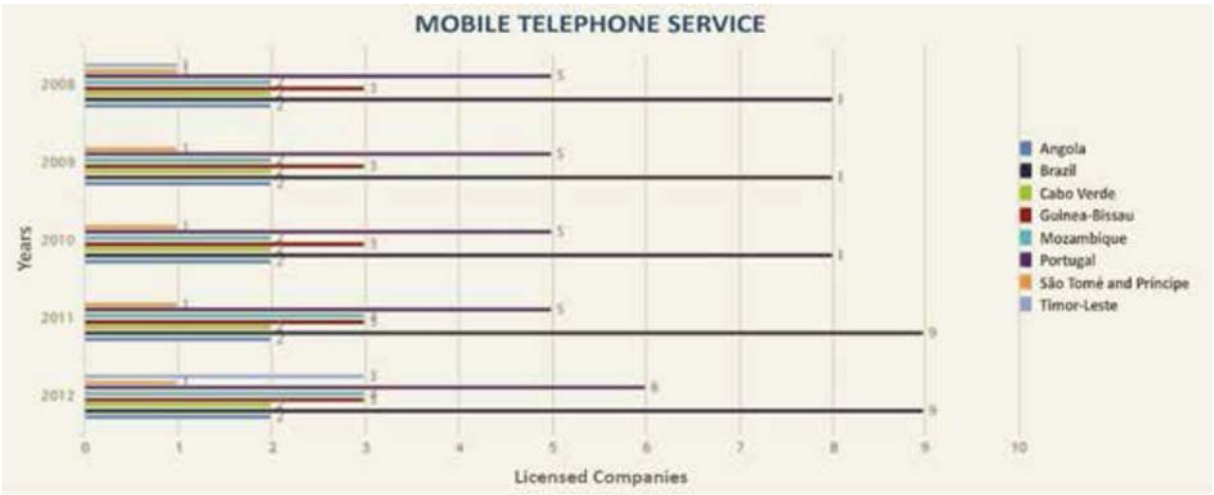
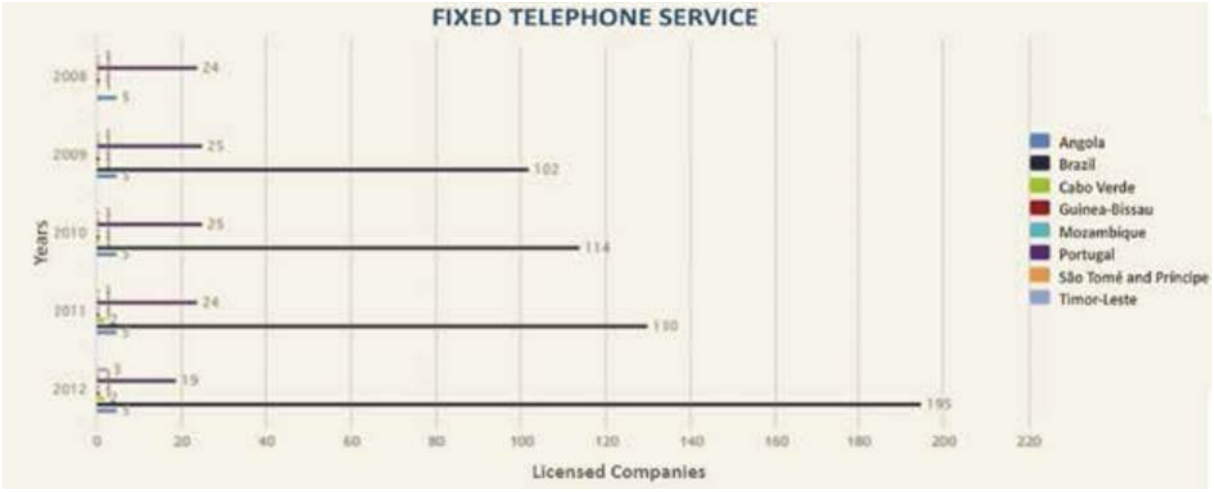


Figure 4



With regard to the telephone service, the mobile network (Fig. 1) reports a much higher penetration compared to the fixed network (Fig. 2), with Portugal reporting the highest penetration rates in the CPLP[114] (160% mobile telephone service, 43% fixed telephone service in 2012) and Brazil reporting the highest growth in the mobile network between 2008 and 2012 (48%). Significant growth is also reported in relation to mobile network penetration in Guinea-Bissau (37%) and São Tomé and Príncipe (33%).

In terms of number of companies, Portugal, Brazil and Angola have a greater number of operators in the fixed network (Fig. 4), while in other countries the situation is reversed, with a prevalence of mobile operators (Fig. 3)

5.4.2 Internet Service

Figure 5

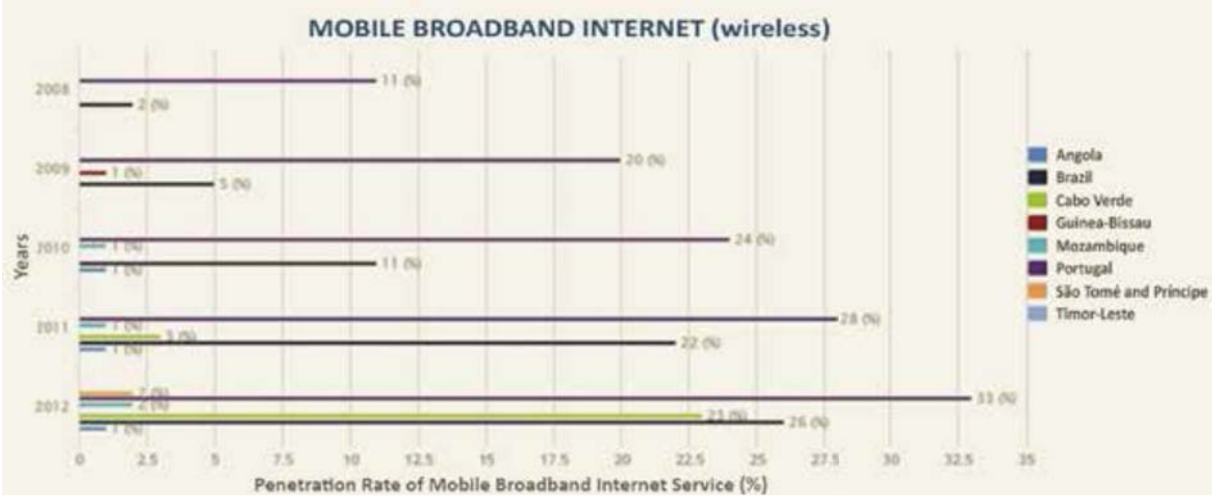
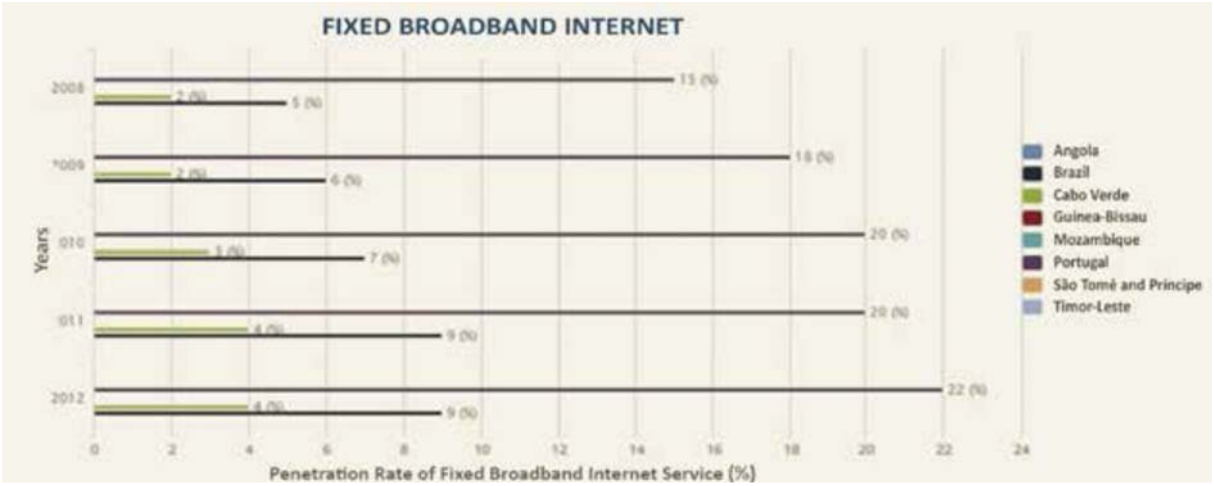


Figure 6



114. This is because Macau is not considered, since, as detailed above, Macau has one of the highest penetration rates of mobile services in the world - 262%.

Figure 7

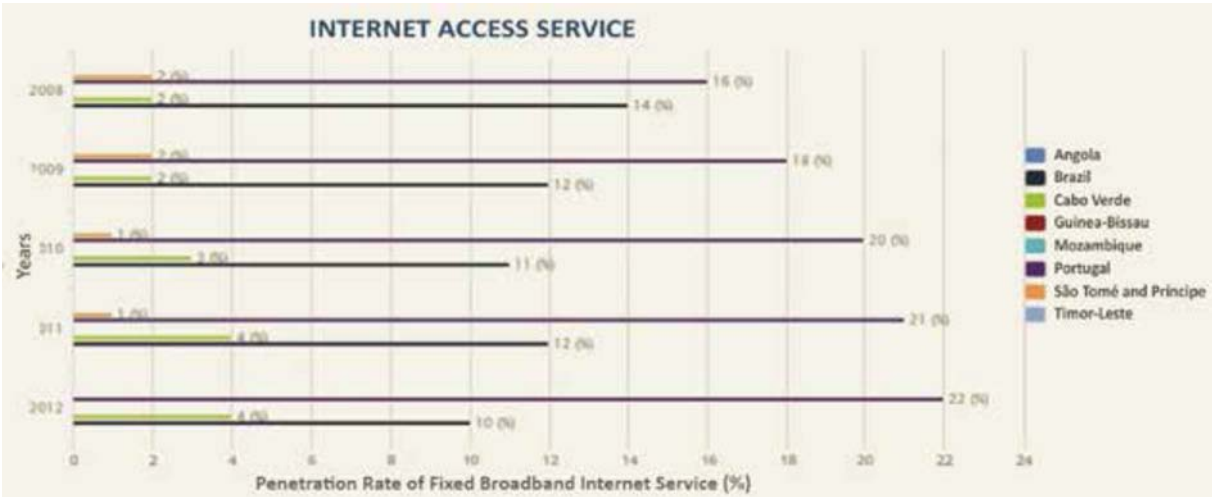
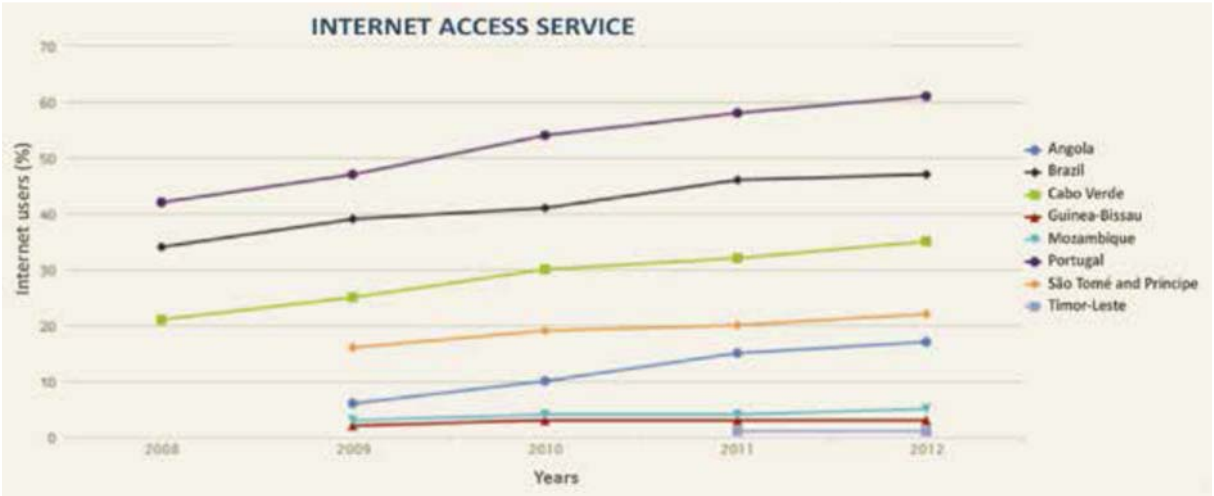


Figure 8



With respect to the Internet access service, mobile broadband (Fig. 6) recorded significant growth, with Brazil (24%), Portugal (22%) and Cabo Verde (20%) reporting the highest increases in penetration rates between 2008 and 2012. Fixed broadband (Fig. 5) reported much lower growth of 7% in Portugal, 4% in Brazil and 2% in Cabo Verde.

As regards the penetration rate of the fixed Internet service (Fig. 7) increases were only observed in Portugal (16% to 22%) and Cabo Verde (2% to 4%). In other countries, the trend reported between 2008 and 2012 was negative, with Brazil registering a decrease of 4% and Cabo Verde 2%.

Finally, taking into account the percentage of Internet users (Fig. 8) Portugal has the highest rate (rising from 40% to 60% between 2008 and 2012). There were notable increases in Cabo Verde (14%), Brazil (14%) and Angola (11%).

5.4.3 Television

Figure 9

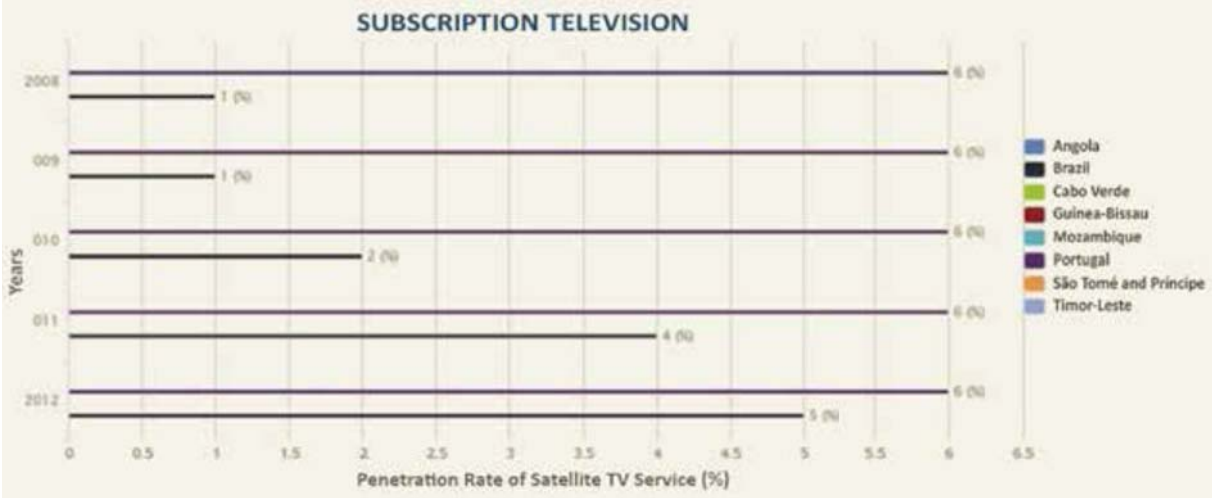
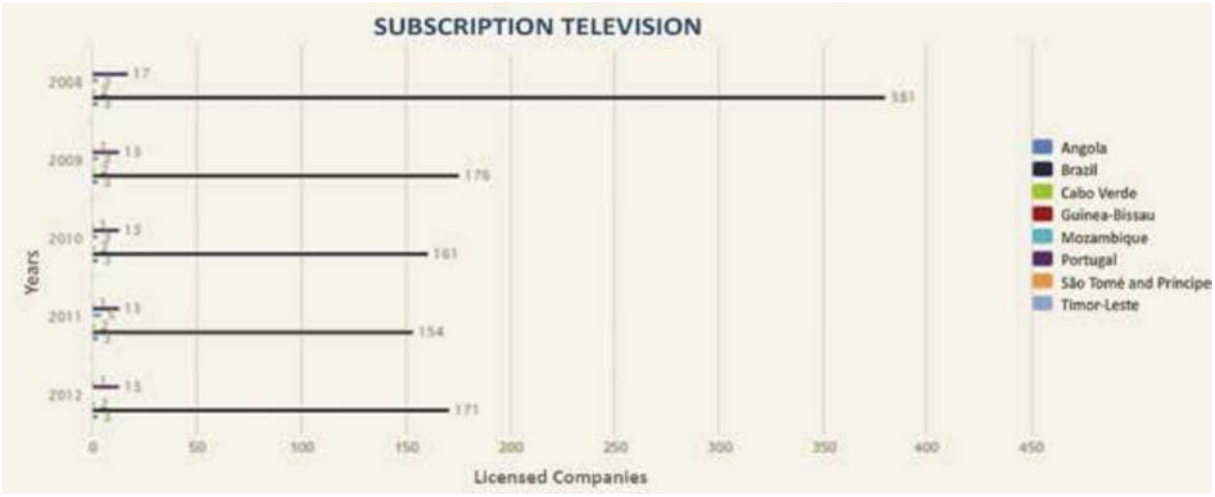


Figure 10



In the case of subscription television, data on the penetration of satellite TV service was only obtained for Portugal and Brazil (Fig. 9), with Portugal maintaining a rate of 6% and Brazil registering growth of 4% between 2008 and 2012. As regards the number of licensed companies (Fig. 10), Brazil had 381 companies in 2008 and 171 companies in 2012, yet still recorded the highest number of operators in this sector. In this case, the population of Brazil is considered as a factor in the large number of licenced companies.

6. Comparative analysis of the Universal Service in the CPLP and in Macau, China

6.1 Introduction

Given the information reported in the previous chapter, the objective of this chapter is to analyse, on a comparative basis, the current status of universal service in CPLP Member States and in Macau, China.

Firstly, based on the information gathered, it can be concluded that there is little difference between the various CPLP countries in terms of their definition of a legal and regulatory framework to regulate the essential issues related to the provision of universal service; the table below illustrates this situation (table 1).

There are, nevertheless, marked differences in the accomplishment and implementation of the various legislative and regulatory solutions, which, it is considered, cannot be separated, on the one hand, from the actual degree of development and maturity of the telecommunications markets, and on the other, the socio-economic circumstances of each of the CPLP countries.

On the other hand, the very regional context in which the countries of this study operate has a decisive influence on the design and implementation of universal service and access policies.

Table 1: Legal/regulatory framework in the countries of the CPLP and Macau[115]

Country	Concept / Scope	Principle of Universal Service	Content / Provisions	Form of Provider Designation	Financing	Fund	Mechanisms of Universal Service Price Control	Tariff Uniformity	Guarantee of Quality	Obligations of Universality
Angola	√	√	√	√	√	√	√	×	√	√
Brazil	√	√	√	√	√	√	√	√	√	√
Cabo Verde	√	√	√	√	√	√	√	×	×	×
Equatorial Guinea	√	×	√	√	√	√	×	×	×	×
Guinea-Bissau	√	√	√	√	√	√	√	×	√	×
Macau, China	√	√	√	√	×	×	√	√	√	×
Mozambique	√	√	√	√	√	√	×	×	×	√
Portugal	√	√	√	√	√	√	√	√	√	×
São Tomé and Príncipe	√	√	√	√	√	√	√	×	×	√
Timor- Leste	×	×	×	√	√	√	×	×	×	×

115. This table compares issues related to the Universal Service/Universal Access under the laws of each of the CPLP countries and Macau.

Indeed, as regards the implementation of the universal service in the various countries of the CPLP, and considering the manner in which the universal service is executed, including its financing and the existence of universalisation obligations or projects which have been adopted or are being implemented using the implemented or created funds, the following can be observed:

Table 2: Actual Situation

Country	USP Designation	Identification of Universal Service Provisions	Implementation of Fund	Allocation of Compensations	Universalisation Obligations/ Projects
Angola	√	√	√	×	√
Brazil	√	√	√	×	√
Cabo Verde	√	√	×	×	×
Equatorial Guinea	×	×	×	×	×
Guinea-Bissau	×	√	√	×	√
Macau, China	√	√	×	×	×
Mozambique	√	√	√	√	√
Portugal	√	√	√	√	√
São Tomé and Príncipe	√	√	×	×	×
Timor- Leste	×	×	×	×	×

Looking at the chart above, we note that, as a general rule in the CPLP countries, there is designation of the universal service provider.

The only exceptions are Guinea-Bissau, Equatorial Guinea and Timor-Leste, which, considering the analysis carried out in Chapter 5, may be related to the relatively recent nature of the regulatory framework. In addition, that fact that the countries in question have small populations and more than one mobile operator on the market could also contribute to the perception, by the entities responsible for conducting communications policy, that designation of a universal service provider to meet the communications needs of end-users is not a pressing issue.

In other countries, such as Macau, China, although there is a designated universal service provider, the universal service obligations have not taken on significant visibility. In the case of Macau, China, there is a clear situation where the context of the country and the telecommunications sector generally does not provide justification.

Deepening the analysis of the concrete situation in the various countries of the CPLP, the disparities increase focusing on universal access or service financing obligations. Even though financing obligations are provided for in the regulatory framework of almost all countries surveyed, only 40% of the countries

of the study were able to create a fund for financing the universal service. On the other hand, in such cases, there were no known initiatives in the context of the universal service which have been financed using the funds.

To date, only two CPLP countries have made allocations of compensation / financing to universal service / universal access projects.

This was the case of the Universal Service Access Fund of Mozambique, which provided financing to a project, with a total value of USD 1,750,274.55, to provide telephone communications to 22 communities for the overall benefit of a population of 353,000 inhabitants. The other case is that of Portugal where the net costs of universal service have been compensated.

In this regard, it should be noted that there is currently a tendency towards rethinking the principles and even the need for implementation of these funds, taking into account the fact that they are likely to lead to additional disproportionate and undue costs for operators who meet the eligibility criteria to contribute to the fund. Indeed, this theme has seen discussion, for example, in several countries in Latin America, as the precursors in the implementation of these funding mechanisms and at a more advanced stage on the learning curve on the use of these mechanisms).

6.2 Scope

Regarding the scope of universal service, it is observed, in comparative terms, that most CPLP countries have carried out, where applicable, the definition of either respective minimum content or other additional benefits.

As regards the state of the actual availability of the various components to end-users, it appears that in many countries the various offers that fall within the scope of universal service in the telecommunications markets in the CPLP are as follows:

Table 3: Scope of the universal service

Country	Connection to the public communications network	Telephone Services	Public Pay-Telephones	Telephone Directory and Directory Enquiry Services	Data / Internet Access	Broadband	Measures for Users with Special Needs
Angola	√	√	√	√	√	×	√
Brazil	√	√	√	√	√	√	√
Cabo Verde	√	√	√	√	√	√	√
Equatorial Guinea	√	√	√	√	×	×	√
Guinea-Bissau	√	√	√	√	√	×	×
Macau, China	√	√	×	×	√	×	×
Mozambique	√	√	√	×	√	×	×
Portugal	√	√	√	√	√	×	√
São Tomé and Príncipe	√	√	√	√	×	×	√
Timor- Leste	×	×	×	×	×	×	×

It is found, therefore, that in most CPLP countries, access to public communications networks and services provided over these networks is an essential element of the universal service as a means of fulfilling the communications needs of society in each of these countries.

The same applies to the provision of public pay-telephones, or offers which target this component in terms of similarity of characteristics, whereby it is also possible to infer that, in CPLP countries, policy-makers view the existence of public/community or shared telephones as essential for the population when it comes to universal access. The latter requirement may be associated, in particular, with the geographic and socio-economic characteristics of the countries, especially if we consider the implementation of the content of this obligation in the context of the current regulatory framework in each country.

Accordingly, considering the content of this provision in Portugal, it appears, for example, that the State took care to specify the number of public pay-telephones to be installed in various geographical areas by the universal service provider. In addition, the State also made the provider of this universal service component subject to the obligation to provide one or more public pay-telephones depending on whether the locations to be served have more than 1000 inhabitants, while there is also a concern to ensure that a percentage of public pay-telephones (corresponding to approximately 20% of national installed stock) are installed in sites of social interest. As such, the universal service provider of public pay-telephones has the obligation to provide a total of 1,993 payphones in places of social interest[116] (there are specific obligations as regards the distribution of this stock by geographical areas).

Brazil details this obligation in much the same way as adopted by the Portuguese legislature, establishing that, in locations served with individual PSTN access, the concessionaires of local PSTN shall, upon request, activate a TUP - Terminal de Uso Público (Public Use Terminal) in certain establishments of social interest[117]. In addition, PSTN concessionaires must ensure that there are TUPs installed, in a location accessible twenty-four hours a day, upon request, to serve the following sites located in rural areas: public schools; public health centres; remaining (duly certified) quilombo or quilombos communities; traditional and extractivist populations established in *Unidades de Conservação de Uso Sustentável* (Conservation and Sustainable Use Areas), managed by Instituto Chico Mendes de Conservação da Biodiversidade; settlements of rural workers; indigenous villages; military organisations of the Armed Forces; posts of the Federal Highway Police; and public aerodromes[118].

The regulatory framework of São Tomé and Príncipe also provides for the offer of public pay-telephones in sufficient numbers, along public roads and in public places, according to set criteria published annually by AGER for each geographical area (while considering that public pay-telephones are not widely available).

At a time when a general decline is being seen in the use of telephone services at a fixed location, juxtaposed with high penetration rates of mobile telephone services (or sharp growth) in each of the continents in which these countries are located, it may be asked whether it makes sense to maintain this obligation under the universal service.

If we consider the socio-economic context of Portugal, a developed country where the population has a level of annual income above the average of the other CPLP countries, as well as the maturity of the market for mobile telephone services with one of the highest penetration rates in the world, it would be worth considering why it continues to maintain a public pay-telephone obligation under the universal service regime[119].

The answer is not unequivocal, but one of the angles to explore is whether the entry of new technologies should determine, by itself, the abandonment of older technologies or if this option is not likely to create inequality, given that, in the light of switching costs, not all users tend to choose or are able to take up of new technologies.

116. Under the concluded contract, the following are deemed places of social interest for the purposes of public pay-telephone installation: (i) airports; (Ii) educational establishments; (Iii) prisons; (Iv) underground stations; (V) hospitals and health centres; (Vi) railway terminals; (Vii) bus terminals; (Viii) courts; (Ix) Citizen Bureaux.

117. Regular educational establishments, health institutions, public security institutions, public libraries and museums, offices of the judiciary, prosecution agencies and consumer protection agencies, in compliance with the criteria established in the regulations (Resolution no. 598 of 23 October 2012).

118. See Article 16 of PGMU.

119. Naturally, it is understood that the fact that this obligation comprises the minimum content of the universal service as defined in Directive 2002/22/EC is an important limitation to this exercise.

Accordingly, from a perspective in which the universal service is conceived as an instrument to promote access for all the population to basic communications services, it is understood that some uniformity persists in universal service policy in perpetuating the offer public pay-telephones in a context of universal service, seeking to mitigate the exclusion of groups of users who do not want/do not have conditions to transition to new technologies.

As regards the telephone directory and the directory enquiry service, it appears that most of the CPLP countries still consider these as part of the universal service.

Even though this component does not constitute a true telecommunications service and may in fact be deemed an information society service, it is inferred that in many CPLP states, and even with the advent of information technology and a high level of widespread dissemination, the entity responsible for the definition of universal access policies continues to consider it important for the development of the market and of society that all citizens and end-users have access to subscriber information.

A contributing fact may be that in the vast majority of CPLP countries, the penetration rate of IT equipment is relatively low, which determines the need to impose the obligation of publishing and distributing printed directories, making this component unprofitable, given the high associated costs and its free-of-charge nature, and therefore unattractive to private investment.

The Internet access/switched data transmission service is also generally included within the scope of universal service in the CPLP. However, it is also true that, in most cases, access to narrowband is imposed (i.e. functional access) at speeds between 56 Kbps and 64 Kbps. The exception is Brazil, which in the context of programs aimed at expanding[120] broadband access, determined a reference speed of 1 Mbps.

Finally, it is seen that not all CPLP countries take the same approach to the need to ensure universal access for all end-users.

Indeed, it appears that provision is made only in about half of the countries of this study for the possibility of imposing additional provisions, as part of the universal service regime, aimed at guaranteeing that end-users with specific needs have access, on terms equivalent to those of other end-users, to the provisions included in the universal service; such users include users with visual or hearing impairment, or economically vulnerable citizens, such as retirees and pensioners on low incomes.

Nevertheless, it is noted that the implementation of these obligations is not seen in all countries which include it in the regulatory framework. Effectively, with respect to Cabo Verde, it appears that even while the legislation provides for the principle of accessibility, it is still not fully observed, because specific social tariffs have not yet been adopted or offered to specific groups of users, and other specific mechanisms to address certain users, such as, for example, retirees and pensioners, unemployed citizens or citizens with disabilities (physical, visual, hearing or cognitive) have not yet been adopted. Meanwhile, the obligations to provide coverage of the territory and the guarantee of certain levels of service are associated with the universal service, but are also imposed on any operator/provider of electronic communications services.

As for the matter of ensuring universality in Cabo Verde, as regards availability in specific locations such as schools, hospitals, airports, etc., the definition of obligations in respect of the universal service of electronic communications services in specific places is in the process of being regulated.

By contrast, in Brazil there are various rules in different regulations governing the issue of accessibility of telecommunications services. Currently, ANATEL is working on a General Regulation of Accessibility, whose objective is to incorporate the principles established in the International Convention on the Rights of Persons with Disabilities into the NRA's regulation[121], establishing rules aimed at giving people with disabilities enjoyment of telecommunications services and use of telecommunications equipment on an equal basis with others, by removing barriers to communication and information.

These rules are part of the universalisation goals of the Fixed Switched Telephone Service and the rules governing the provision of specific services, such as the Personal Mobile Service, subscription television (Restricted Access Service) and fixed broadband (Multimedia Communication Service).

120. Conceptually the term universalisation applies only to PSTN.

121. Promulgated by Decree no. 6949 of 25 August 2009.

On the other hand, accessibility and universality are also guaranteed in the context of the Fixed Switched Telephone Service, since the goal set out for in this area results in the offer of a specific service plan, called AICE — Acesso Individual Classe Especial (Special Class Individual Access), consisting in an offer exclusively targeting low income subscribers. This offer, which includes the Fixed Switched Telephone Service, has the aim of progressive universalisation of individual access to this service by establishing specific conditions for its offer, use, application of tariffs, form of payment, handling of calls, quality and its social function for people with low incomes and who are registered in the Federal Government's *Cadastro Único dos Programas Sociais* (Single Registry of Social Programs)[122].

Table 4: Guiding principles

Country	USP Designation	Identification of Universal Service Provisions	Implementation of Fund	Allocation of Compensations
Angola	√	√	√	√
Brazil	√	√	√	√
Cabo Verde	√	√	√	√
Equatorial Guinea	√	√	√	√
Guinea-Bissau	√	√	√	√
Macau, China	√	√	-	×
Mozambique	√	√	√	×
Portugal	√	√	√	√
São Tomé and Príncipe	√	√	√	√
Timor- Leste	-	-	-	-

One aspect that it would be correct to infer regarding the homogeneity of guiding principles is the fact that adoption possibly stems from experiences of universal service provision in more developed countries, such as the countries of Europe and the United States, and countries in other regions of the globe.

On the other hand, the fact that most of the CPLP States share constitutional principles as regards the fundamental tasks of the State, in particular with regard to the provision of goods considered essential to the development of citizens and society, such as telecommunications, may also be decisive to the widespread adoption of common guiding principles on the matter.

122. See article 8 of Decree 7512/2011.

The table above only reflects those guiding principles which have been adopted almost across the board throughout the CPLP.

However, additional guiding principles of the universal service can be highlighted, such as transparency (Angola and Mozambique), objectivity and proportionality (Angola), legality, independence, availability, periodic evaluation of the objectives and obligations of universal service, policy coordination, sector liberalisation, accounting separation (Mozambique), which can also be viewed, essentially, as a subdivision or subprinciples which stem from more general principles (e.g.: the case of the principles of objectivity and proportionality, which are, in essence, subprinciples or embodiment of the more general principle of equality).

While not exactly constituting a guiding principle for the provision of universal service, it is also possible to talk about the evolution or adaptation (as is the case of Guinea-Bissau) of principles which should guide universal service policies: from analysis of the considered legislation, it is evident that there is a concern among legislatures to ensure that it is enshrined in law that (a) the concept of universal service (and by extension, its scope) is determined in an evolutionary manner, taking into account various factors such as technological progress, market development and changes in user demand (e.g. Portugal, Macau, China and São Tomé and Príncipe), or that (b) the members of the Government responsible for the sector may alter the scope or concept of universal service as warranted (e.g. Mozambique) and also, in some cases, (c) the regulator (e.g. Timor-Leste and Cabo Verde). That is, since the universal service is seen as a public service, adopting adaptability as a principle underlying its provision means that it is possible to accommodate requirements for adjustment in line with rapidly changing technology, and also ensures that, in the event of shifting demands, the universal service can adapt accordingly[123].

6.3 Objectives

In terms of the objectives, in general terms, it is found that, in the various countries analysed, established universal service policies are designed to allow access by any person or institution, comprising the public interest, to the basic telecommunications services, on a continuing basis and with guaranteed quality.

There is also notable concern about ensuring that universal service is an effective mechanism for achieving one of the fundamental tasks of the State — resulting in the promotion of social and economic development for citizens. For this reason, regulation of universal service in the countries studied expressly stipulates that it should also meet the communication needs of rural/remote areas and of the population residing in such areas, as well as the needs of economic and social activities, in order to correct imbalances/inequalities between geographical areas of the same country with impact on economic and social well-being of citizens and entities that are part of the business fabric.

There is also noted concern for the inclusion of specific user groups. As such, in Portugal, there is the need to make provision of public pay-telephone accessible to people with disabilities or, as is also found in Brazil, the need to ensure that public pay-telephones are installed in places of public interest such as schools, hospitals, prisons, etc.

Another example is that of additional obligations/provisions related to the provision of specific equipment for people with visual and hearing impairments, imposed on providers of the various components of the universal service, particularly in Portugal.

Concern about the inclusion of groups of citizens with low incomes is also reflected in the imposition of offers to retirees, pensioners or low income citizens.

123. In this regard, it is noted that the constant evolution in technology, in the market and in social needs has had consequences for the implementation of the principle of adaptability in law, in which its accomplishment is reflected in the establishment or removal of provisions in the context of the public service, in casu of the universal service. Indeed, there is a view that considers that, as a public service, the universal service is not permanent and its relevance depends largely on the choices of the public authorities responsible for its definition and implementation. Therefore, it is not possible to extract as corollary of this principle, contrary to other principles that guide universal service policy, a duty for entities involved in the management of the universal service which will be reflected in specific rights to users. If anything, based on this principle, the entities responsible for the definition and implementation of universal service policies have an obligation to consider the changes that have occurred and to adapt policies to changes in the general interest.

6.4 Characteristics

Bearing in mind the description given in the previous chapter (Chapter 5), it is observed that in most situations analysed, universal service includes access to a public telecommunications network and to the telephone service, access to public pay-telephones and, in some cases, the provision of a telephone directory and/or directory enquiry services.

Overall, the prices of the universal service providers should provide end-users with affordability, and therefore price control mechanisms are implemented in many geographies. As such, under concluded contracts, it can be seen in Portugal that retail prices charged in the context of provision of the universal service components of connection to the public communications network, FTS and public pay-telephones are subject to a price cap rule. In Brazil, the existing concession contracts also set the maximum prices that may be charged by providers, subject to approval by ANATEL.

On the other hand, tariff uniformity is observed in the prices of universal service under the legislation of the various geographical areas identified, in particular in Angola, Mozambique and Portugal.

It is also a concern of most CPLP legislators to ensure that services are provided with a minimum guarantee of quality of service. Accordingly, in Portugal, universal service providers are required to guarantee quality of service parameters defined at contractual level, and publish clear, transparent and comparable information on the parameters practiced, including the objectives achieved in each year and objectives for the following year.

In Brazil, the concessionaires are also bound to minimum standards of quality of service, and an obligation of almost continuous reporting to ANATEL as to their compliance with these obligations. In relation to Brazil, it is also interesting to note that the quality of service obligations, particularly in terms of geographical coverage, are also imposed on Personal Mobile Service, Multimedia Communication Service and Subscription TV operators, providing an example which is also followed in other countries, such as Angola.

As the main feature of the universal service in some CPLP geographies, note is also made of the establishment of consumer protection mechanisms, in order to ensure that consumers have effective means to control costs in the use of universal service components. Such mechanisms or features may comprise detailed billing, selective call barring, payment of network access in instalments, criteria for suspension of services in the event of untimely payment, etc. and such mechanisms are set out in the legislation of Angola, Brazil, Cabo Verde, Mozambique and Portugal.

6.5 Providers

With regard to the designation of universal service providers and the respective formalisation within the CPLP, three clear trends are observed:

(i) Designation in the context of tendering procedures;

(ii) Designation or selection by the competent authority for the definition of universal service policies or by the body responsible for the telecommunications sector at government level, by means of concession contract.

It is highlighted that, often, the choice of one or the other model cannot be dissociated from the level of maturity of the market in which the universal service provider is to be designated. In fact, in a closed and/or small-sized market, where the number of operators is clearly small, it is easy to see how only one entity has the technical and financial capacity to support the provision of universal service, in which case the State opts to promote an administrative procedure aimed at concluding a concession contract with that entity.

Such a situation can be seen in relation to Cabo Verde and São Tomé and Príncipe, where, at the time of the provider's designation, only the designated entities owned infrastructure and capacity to assume universal service obligations. With the rapid growth of mobile networks, there is a reversal of this trend, and, for example, in Angola and Mozambique, universal service obligations are already imposed on mobile operators in terms of geographical coverage. On the other hand, Cabo Verde is expected to transition to a designation model based on a tender procedure upon completion of the CV Telecom concession (it is assumed), and the same is seen in São Tomé and Príncipe.

In Brazil, there are also concession contracts, and there is evidence of heterogeneity among providers across 4 regions of Brazil, according to the *Plano Geral de Outorgas* (General Concession Plan). Note that the indication of these providers occurred as a result of market liberalisation, back at the end of the 1990s, due to the structural reorganisation of the former state company, TELEBRÁS.

Portugal has already designated universal service providers using the public tender mechanism.

Legislation of the analysed countries which provides for designation by tender procedure states that the designation of the providers can be made covering the full extent of the territory or parts of it (lots), whereas one or more providers can be chosen for the various components comprising the universal service.

6.6 Financing models

In CPLP, it can be seen that, ideally, the financing of universal service should be made using the specific fund created for this purpose.

In fact, it can be concluded from the analysis that, in general, all CPLP states (with the exception of Macau, China), make provision for universal service funding using the following mechanisms (which may exist alone or jointly): (a) financing from public funds; and (b) financing from a special fund for the development of activities related to the provision of universal service, with contributions from telecommunications companies in the territory concerned, possibly subject to certain requirements in terms of revenue volumes and/or market share.

In addition, fund revenues may be derived from budgetary allocations, other public funds and interest earned on deposits.

The financing model entailing a distribution of universal service by telecommunications companies in a given market merits enshrinement in most geographic areas that make up the object of this study, with such funds formally constituted in Angola, Brazil, Guinea-Bissau, Mozambique and Portugal.

At this point, special focus should be given to the solution under the legislation of Timor-Leste. In this country, the regulator must first identify the financing needs and only after approving a reasoned plan and calculating the respective financing needs can it require contributions from operators. The value of the contribution varies according to the investment needs identified in the plan.

In many countries, such as Brazil and Portugal, financing assumes that the provision of universal service constitutes an unfair burden (a concept that is only truly detailed in Portugal), which is taken into account in calculating the net cost of universal service invoked by the provider, calculated according to a methodology set out in the law or in the decisions of the regulator.

6.7 Financing management

Regarding the governance of the universal service financing model in the CPLP, in relation to funds already implemented, it is seen that the fund must comply with the principles of independence, transparency, non-discrimination, proportionality and minimum market distortion.

In countries that have already implemented funds for financing the universal service, these constitute autonomous assets, and in the CPLP, it is expected that the funds are (or will be) managed/administered by regulators (e.g.: Brazil, Guinea-Bissau, Portugal and São Tomé and Príncipe) or are autonomous institutions, such as FADCOM - Fundo de Apoio ao Desenvolvimento das Comunicações (Communications Development Support Fund) of Angola.

The case of Brazil has some particularities, because in the governance rules of the FUS and in relation to its management, it is established that the policies, general guidelines and priorities to guide the investments of the Fund are to be formulated by the Ministry of Communications, which will also define the programmes, projects and activities that will be financed with these resources. As regards its management and governance, ANATEL is required to publish, within sixty days of the end of each year a statement

of revenues and FUST applications with the names of the beneficiary organisations and the purpose of the application of sums spent by the FUST.

Additionally, in its functioning, these funds should be subject to rules of budgetary and accounting management applicable to institutions of the State, and must have accounting that is separate from the regulatory authority, subject to auditing.

6.8 Other aspects which impact Universal Service

Based on the compiled information, through analysis of literature and through information provided in the interaction with the NRAs of some countries, it is possible to highlight the following aspects that impact universal service:

(i) Inexpressive coverage of fixed networks encumbered with universal service tasks;

(ii) Non-compliance with the universalisation obligations laid down in the licenses granted to mobile operators, in particular for rural areas/outside large urban centres[124];

(iii) Coverage problems, especially in areas of difficult access, and also problems with quality of services (e.g. Mozambique).

As such, these are factors which impede universal access of the population to telecommunications services and which are likely to undermine national socio-economic development.

7. A new paradigm of universalisation for the CPLP and Macau, China

7.1 Approach perspectives

When rethinking the concept of universal service or the paradigm of universalisation in CPLP countries and Macau, China, it is important to consider that the standpoint of this evolution may be reactive or proactive:

(i) In the first case (*reactive*), this rethink is traditionally performed after having allowed the market to function without any interference, given that it is easier to evaluate which services are made available on a commercial basis and in which areas. In this scenario, the measures of universalisation are defined to cover only those provisions/services which are clearly not ensured by normal market forces and whose lack of availability may result in social exclusion;

(ii) In the second case (*proactive*) the main objective of this rethink is to anticipate market trends and/or stimulate/strengthen the expansion of certain services considered essential to society or the economy, whether these services are new services or services which are already commercially available.

Each of these approaches has advantages and disadvantages. In the *first case*, since the universalisation measures focus only on those areas or services which are not actually provided by the market, the main benefit is the reduction of costs incurred and the level of funding necessary to achieve the intended objectives.

In the *second case*, the main advantage stems from the time taken to deploy certain services across the whole territory, which can be shortened significantly by means of their inclusion within the scope of universal service, resulting in benefits that will be quickly appropriated by the general population. This scenario may, however, have some impact in terms of distorting competition, especially as it implies the existence of promotional measures that go beyond the normal functioning of the market.

124. In this regard it is noted that, according to information from INACOM, 70% of electronic communications services are concentrated in the country's capital (Luanda), and there are several areas without mobile network coverage from one or both market operators.

Given the diverse range of realities found in CPLP countries, a reassessment of the concept of universal service may take a reactive perspective in certain countries, such as Portugal and Brazil, where the telecommunications sector is at a more advanced stage of development, and as such can fit the needs of public intervention. However, for the vast majority of CPLP countries, it will need to be considered whether the reassessment should be taking a proactive approach, seeking, through universalisation measures, to anticipate trends, roll out the provision of certain services and overcome certain gaps in penetration and coverage already detected.

7.2 Proposed conceptual model

Existing literature and international trends seem to point clearly to the need to rethink the universal service in order to make the goals that underlie it more ambitious, more convergent and more integrated, adapting the mechanism to the challenges of the XXI century. The need for development and revision of the traditional boundaries of universal service is dictated by several reasons.

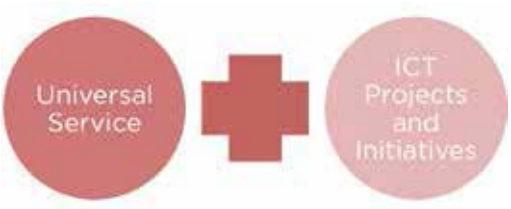
First of all, at present, technological developments and market growth allow provision of various electronic communications services to all citizens, at more affordable pricing and with control of quality. In *second place*, the focus on traditional voice services, despite their importance for the economic and social development of the last decades, is not aligned with the growth needs of modern societies in the twenty-first century. In *third place*, it is recognized that the goals of universalisation in each country should not be disconnected from ICT applications and services, whereby there is an increasing tendency to set out policies which are convergent and integrated in terms of providing electronic communications services and ICT content.

Even though it is broadly agreed that the universal service should be rebalanced and aligned with the objectives of the XXI century, the most appropriate way of accommodating this need for evolution is not entirely clear and evident.

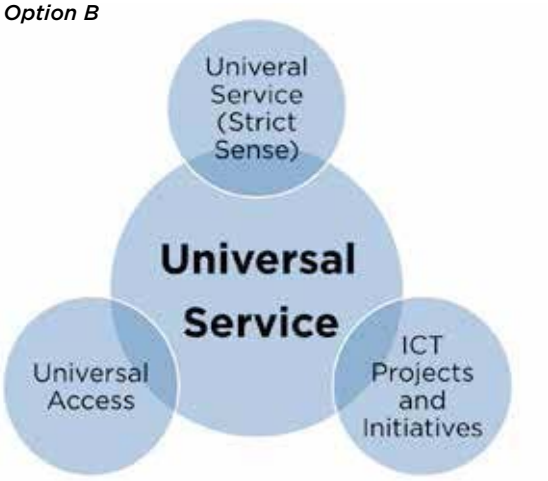
Basically, in other words, the question which arises here is whether the future concept and scope of universal service should be extended in order to accommodate all the various measures, universalisation projects and initiatives in the field of ICT and related fields, or if, to the contrary, its most traditional boundaries (historically linked to the definition of a minimum set of telecommunications services) should be maintained, albeit with updated scope, i.e., in terms of services comprised. One last option to consider would be the complete abolition of the concept of universal service, and instead to merely consider universalisation measures, regardless of the form which these measures take, framing them essentially under the funding mechanisms.

Conceptually, the most relevant options in question are as follows:

Option A



Option B



This question is not of insubstantial importance. Any of these perspectives or options can and will certainly have impact on the entire legal and regulatory structure which will be necessary to ensure the smooth transition to a universal service of the twenty-first century. This makes it is necessary to take a position on the issue, albeit, at this time, merely perfunctory.

Although one could consider *Option B*, in order to incorporate the various ICT initiatives and projects into the universal service, thereby transforming this concept and setting it up it as the common basis for the various universal initiatives, at this stage, it is considered more prudent and appropriate to opt for *Option A* as the most fitting, maintaining the concept of universal service in line with the more traditional view, i.e. as a minimum set of telecommunications services considered essential, on an ongoing basis, for life in society and for economic development. This approach is based on the following set of reasons:

(i) A more integral option may be too disruptive, disregarding the historical bases associated with the concept of universal service over several decades, incorporating realities that have always been outside the universal service and do not exactly relate to the telecommunications sector;

(ii) A bolder option in this regard would imply profound changes in prevailing legislation, implying changes in legislation in various sectors, as well as proper coordination and/or abolition of certain bodies (and in some cases this will not be possible);

(iii) Certain universalisation projects or initiatives, although related to the universal service, cannot share the same characteristics that are associated with this service, so it may not be conceptually correct to integrate them into a concept with historically defined characteristics;

(iv) Given the changing nature of ICT projects and initiatives, it may not be fitting to determine their integration into a single concept, which would limit and reduce the flexibility which is necessary to tailor the projects launched to perceived needs at any given time.

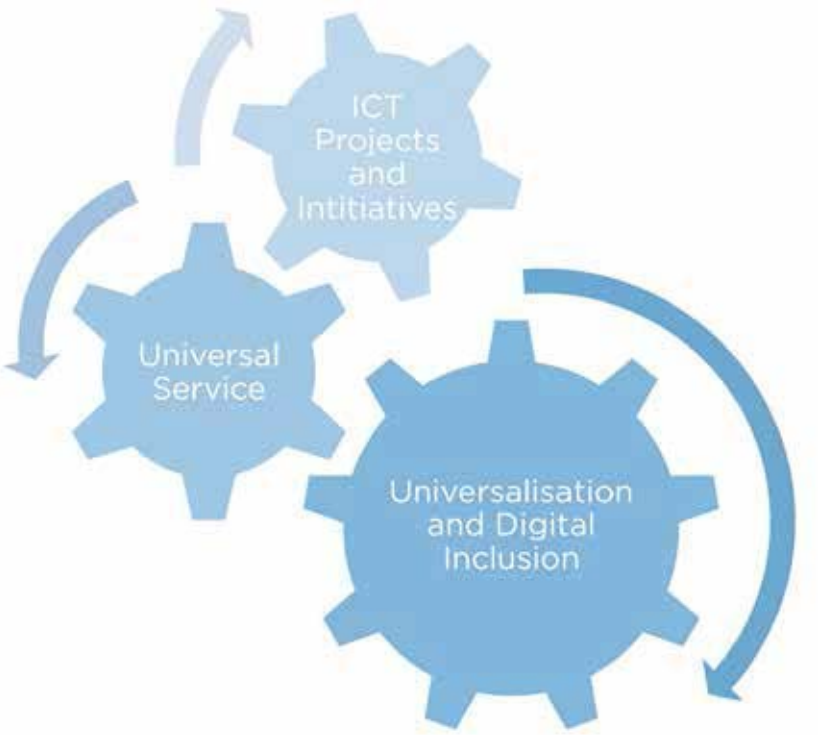
(v) Furthermore, it would be difficult to precisely define the boundaries of universal service; the boundaries would therefore become fluid and opaque, contributing to legal insecurity and uncertainty in the oversight of its implementation and in allocating the remits of the entities responsible for its provision;

(vi) The abolition of the concept of universal service is also beyond the object of this study, which aims precisely to guarantee maintenance of the concept, albeit revised and adapted to the reality of the twenty-first century.

In short, in addition to potential operational difficulties, from a conceptual point of view, it is considered that it is more appropriate to maintain the concept of universal service aligned with its more traditional perspective. This does not mean, in any way, diminishing the various ICT projects and initiatives with universalisation goals, but only to consider that the **universal service must continue to be conceived as a minimum level of telecommunications services essential to life in society and not as a concept unifying all and any project with direct, indirect or reflective impact in the sector.**

Nevertheless, it is recognised that the various projects and initiatives that go beyond the scope of universal service are increasingly and importantly contributing to the goals of universalisation and digital inclusion in each country, thereby becoming an unavoidable reality. For this reason, such projects and initiatives should continue to be made available and it will be important to establish the legal conditions that define their framework and promote their widespread deployment, especially in terms of funding mechanisms. This perspective will be detailed below.

Based on the above, the proposed approach to a new paradigm of universalisation in CPLP countries seeks to integrate, within a common concept of *universalisation* and of *digital inclusion*, the following, conceptually distinct realities:



This proposal involves consolidating each of these realities, seeking to give them proper, relevant and current significance in modern societies. Ring fencing the concept of universal service does not mean there cannot be integration with ICT projects and initiatives. To the contrary, this integration is desirable and should be sought from a legislative, regulatory and financial point of view.

7.3 Universalisation model and digital inclusion

According to the model proposed above, measures of universalisation and digital inclusion in the twenty-first century should essentially be pursued though the universal service and also through specific ICT measures and initiatives, ensuring the necessary integration of these two realities. This approach is new, since existing studies propose a conceptual model without making a clear distinction between universal service and other parallel initiatives.

In this study, recognition is given to the importance of these two means of universalisation and the intention is to define a specific context which brings these realities together while maintaining their separation in conceptual terms.

7.3.1 Universal Service

As stated, it is considered that the concept of universal service must continue to maintain its traditional configuration. This does not mean, by any means, that the universal service cannot evolve, be rethought or adapted to the XXI century. This will be detailed below.

7.3.1.1 Universal service concept

One of the most important aspects in this study regards the possible definition of a harmonised concept of universal service for CPLP countries. It is already known that most Member States of this organisation use this concept (or the universal access concept) in their legislation, although the legal definition that is given is not entirely coincidental between countries.

As such, it is considered that it could be important for CPLP countries to adopt a harmonised and common concept of universal service, tracing the fundamental characteristics of this mechanism of social regulation. Based on the conducted survey and considering the proposed approach referenced above, it is considered that this definition could be as follows:

"*The universal service for electronic communications is the minimum set of services considered essential for economic and social development, available to all citizens and businesses, regardless of their geographical location, of specified quality and at an affordable price.*"

This definition deals with the three main characteristics that are traditionally attached to the universal service:

(i) *Universality*, in the sense that the minimum set of services or provisions must be available throughout the national territory, whether by public, community or private means, for any user;

(ii) *Quality*: the service is available based on a framework of minimum quality;

(iii) *Affordability*: The service is provided at an affordable price in view of the socio-economic reality of each country.

The definition of a harmonised universal service concept does not prevent a Member State from deciding to pursue different goals of universalisation at any time. It is considered important, however, to incorporate the main objective of universal service into the concept itself — that is to ensure social and economic development, thereby reducing imbalances and ensuring an increase in equality, cohesion and national identity.

Moreover, this definition of the concept of universal service in no way affects the various options that may be implemented to further the underlying objectives of universal service, that is, descriptions of certain providers, specific projects or imposition of universal service obligations.

7.3.1.2 Scope of universal service in CPLP countries

In addition to the concept, the more important question at this point is how, at any time, the minimum set of services to be included in universal service is to be defined. As a framework, there are some aspects that should be noted in this regard:

First of all, it is considered that the precise scope of universal service at any given moment should not be defined in legislation. Legislation should only set out the basic concept of universal service in the sense given above. In this context, it is deemed essential to ensure that the scope of universal service is evolutionary, meaning that legislation should allow sufficient margin so that the universal service may cover the services that are considered essential, at any time, for social inclusion, territorial cohesion and economic development.

Where the minimum set of services to be included in the universal service is defined in legislation itself, there is a loss of flexibility in the concept and the definition tends to crystallise, since any change inevitably implies a legislative amendment, which, in some circumstances, depending on the geopolitical context of the CPLP Member State, entails highly bureaucratic or even supranational decision-making. It is clearly preferable to leave the specification of the minimum set of services to an infralegal act, whether at governmental level or at the level of the regulatory authority. The important thing is that it is an act which can be updated at any time, in a swift and non-bureaucratic manner.

It is true that this aspect can, in principle, imply a lesser degree of harmonisation in the minimum set of services to be provided under the universal service. However, nothing prevents such harmonisation being achieved by other means, for example, by adopting measures at CPLP level for implementation by Member States. In any case, it does not seem appropriate to propose full harmonisation in the scope of universal service, not least because the telecommunications sector is at different stages of evolution in the various countries of the CPLP.

In *second place*, the definition of the services to be included, at any moment of time, within the universal service should be adopted based on a set of clear, transparent and rigorous criteria. As mentioned above, it will be important to consider the issues raised in chapter 2.4.1, or question, on an ongoing basis:

(i) is the service in question essential, given the evolving economic, social and technological conditions, to ensure economic development and increase quality of life?

(ii) has service in question been subscribed to by a substantial proportion of customers, so that the non-availability of the service to certain people or territories may generate a problem of social exclusion?

(iii) can the service in question be provided by traditional market forces?

(iv) Is the inclusion of this service within the scope of the universal service the best way to ensure its promotion or are there alternative, less intrusive means?

On this basis, it should now be assessed whether the services that currently form part of the universal service in most CPLP countries should be maintained and on what terms, and which candidate services might become part of the scope of universal service.

7.3.1.3 Services currently included within the universal service

As detailed in chapter 6.2, the scope of the universal service in the countries analysed in this study is as follows:

Table 5: Scope of the universal service

Country	Connection to the public communications network	Telephone Services	Public Pay-Telephones	Telephone Directory and Directory Enquiry Services	Data / Internet Access	Broadband	Measures for Users with Special Needs
Angola	√	√	√	√	√	×	√
Brazil	√	√	√	√	√	√	√
Cabo Verde	√	√	√	√	√	√	√
Equatorial Guinea	√	√	√	√	×	×	×
Guinea-Bissau	√	√	√	√	√	×	×
Macau, China	√	√	√	×	√	×	×
Mozambique	√	√	√	×	√	×	×
Portugal	√	√	√	√	√	×	√
São Tomé and Príncipe	√	√	√	√	×	×	√
Timor- Leste	×	×	×	×	×	×	×

As we sought to point out in the chapter above, it is questionable, given technological and market developments, whether the present set of services should continue to remain part of the scope of universal service.

Connection to the public communications network

Access to a public communications network has historically been linked to the provision of a telephone connection at a fixed location (usually in the user's home) to enable the user to make and receive voice calls.

This provision was very important in a historical context for countries such as Portugal, driving the expansion of telecommunications infrastructure throughout the territory and its availability at users' houses. However, it is questionable whether this makes sense in countries with low or negligible fixed service penetration rates, which is essentially the case in the majority of CPLP countries. Moreover, although this provision is included in the universal service in these countries, it has not had any effect in terms of promoting the expansion of these fixed services.

Moreover, in most CPLP countries, taking account of their socio-economic and geographical characteristics, mobile networks are profiled as the most appropriate for achieving the goals of universalisation. Therefore, although it is considered that this provision should continue to be part of the universal service, it is essential to give flexibility to its provision, allowing use of any type of technology and infrastructure, including mobile networks.

Telephone services

With regard to telephone services, it is interesting to note that some countries require, in parallel to voice services, the provision of facsimile communications. This is the case, for example, in Portugal and Cabo Verde. This is an anachronistic provision which is not justified as soon as Internet access is guaranteed, whereby it is suggested that facsimile communications be removed from the scope of universal service.

From another perspective, one of the provisions included in the concept of telephone services concerns access to emergency services. This is a fundamental aspect of the universal service which must be retained. There is good reason, nevertheless, to seek availability of other means of access to emergency systems, such as, SMS.

Public pay-telephones

The fact that the public pay-telephone service is included within the scope of universal service in most of the countries shows that it remains important to provide shared facilities for access to basic services.

In countries with little expression in terms of fixed services and with the persistent shortcomings in terms of the mobile service, it appears that there is continued justification to retain the public pay-telephone service as part of the universal service. In any case, this aspect should be reviewed periodically, since in countries with high mobile service penetration rates and Internet access, continued provision of the public pay-telephone service in the universal service cannot be justified.

Furthermore, provision of the public pay-telephone service should be given more flexibility, allowing use of any type of technology.

Directory and directory enquiry services

The provision of a telephone directory service within the universal service is increasingly questionable. In addition to the high financial and environmental costs involved in printing thousands of telephone directories, market developments and growth in Internet access clearly argue for the elimination of this universal service provision.

Meanwhile, the relevance of the telephone directory enquiry service with information about user data, as part of the universal service, should also be questioned. In fact, this service does not seem to fulfil the demanding requirements that justify inclusion, at any time, of determined basic telecommunications services within the universal service, which is why its removal is suggested.

When this provision is considered relevant, as may happen in certain countries with major deficiencies in access to data and information, its provision should be accomplished through measures in parallel to universal service.

Internet / data access

With regard to Internet/data access, and with some exceptions, most of the countries analysed associate provision of Internet access with the provision of a functional access speed, i.e. narrowband. Since there is currently discussion about the inclusion of broadband within the scope of universal service (as will be evaluated below), this provision naturally loses relevance.

Measures for users with special needs

Measures for users with special needs constitutes a key aspect of the universal service. These relate to aspects of justice and social equality in terms of access to and use of basic telecommunications services which are essential to life in society, whereby it is essential to ensure that these measures remain part of the scope of universal service.

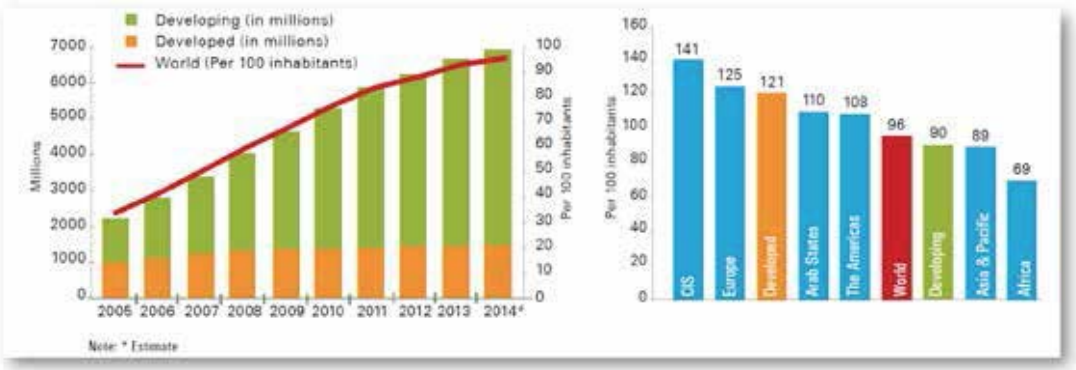
7.3.1.4 Candidate services for inclusion within the scope of universal service

In view of the discussions currently ongoing at various international forums, there are three candidate services for incorporation within the scope of universal service: (a) the mobile telephone service; (b) the broadband Internet and data access service, and (c) the television broadcasting service. Naturally, given the socio-economic differences between the various Member States of the CPLP and the different stages of development of their telecommunications sectors, it is clear that the inclusion of some of these services may make more sense in CPLP countries with major lags in development.

In any case, these services are examined individually.

Mobile Telephone Service

Internationally, the most recent data from the ITU shows a clear growth trend in this service, which now has about 7 billion users worldwide:

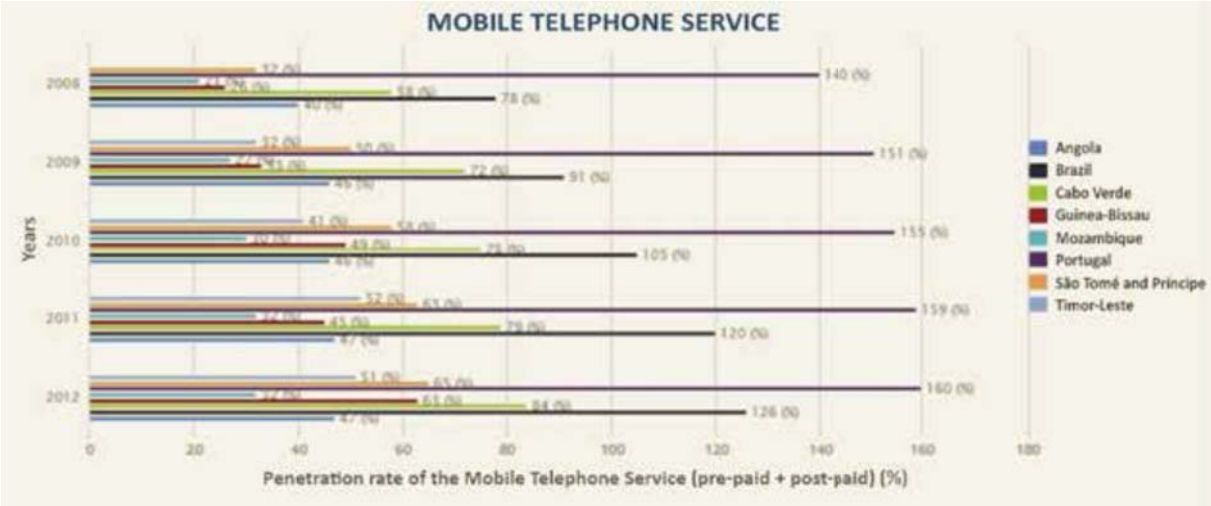


Source: *ICT Facts & Figures, 2014, ITU*[125]

125. http://www.itu.int/en/ITU-D/Statistics/Pages/facts/default.aspx.

Interestingly, about 2/3 of all users of the land mobile service are in developing countries, with Africa and Asia reported as the regions with highest growth rates.

Among CPLP countries, there are significant differences in the penetration rates of the land mobile service, as shown in the following graph:



Source: *ARCTEL 2012*[126]

There are countries with rates above 100% (Portugal and Brazil and also Macau, China, although not listed in the above table) and countries with rates that remain very low, as in the case of Mozambique (32%), Timor-Leste (47%) and Angola (51%). Other countries already have significant penetration rates, such as São Tomé and Príncipe (65%) and Cabo Verde (84%), but still far from 100% penetration of the population.

As such, it appears there are potentials to be leveraged at the level of the mobile telephone service in most Member States of the CPLP, since there is risk of social exclusion of a significant part of the population in access to a service which, as a result of the features associated with deployment of mobile networks[127], has been considered indispensable in order to increase the quality of life of the population and ensure their social inclusion.

The majority of CPLP countries have a number of mobile phone service providers, which have been offering this service commercially for several years, but which have not, however, been able to achieve use by the entire population. As such, it follows that the market is not able to guarantee universalisation of this service, probably because there are situations in terms of geographic areas or population groups where providing the service is neither economically reasonable nor efficient.

The inclusion of mobile telephone services within the universal service may, possibly, address this failing and reduce asymmetries or gaps in penetration that persist in most CPLP countries.

Accordingly, **it is considered that in some countries it may be advantageous to include the mobile telephone service within the scope of universal service, to ensure that anyone, regardless of their location, has access to a mobile network for use of voice services.**

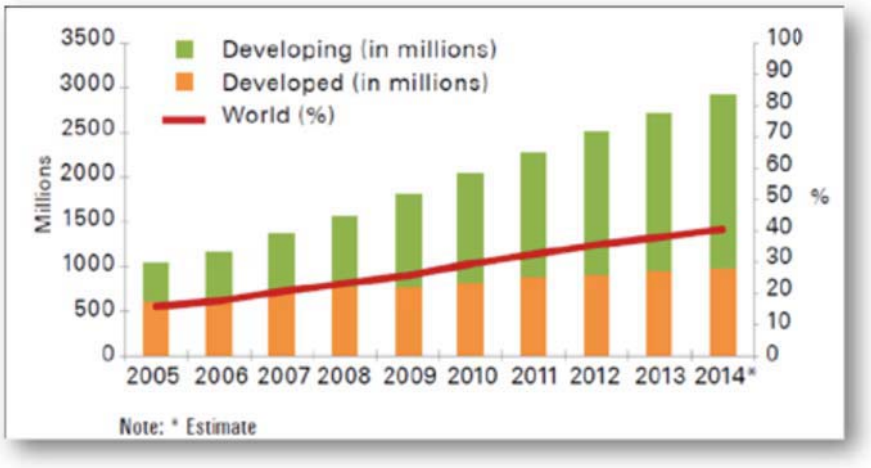
126. http://www.arctel-cplp.org/observatorio.

127. i.e. investment costs which are comparatively lower than fixed networks and speed of roll-out.

Broadband access service

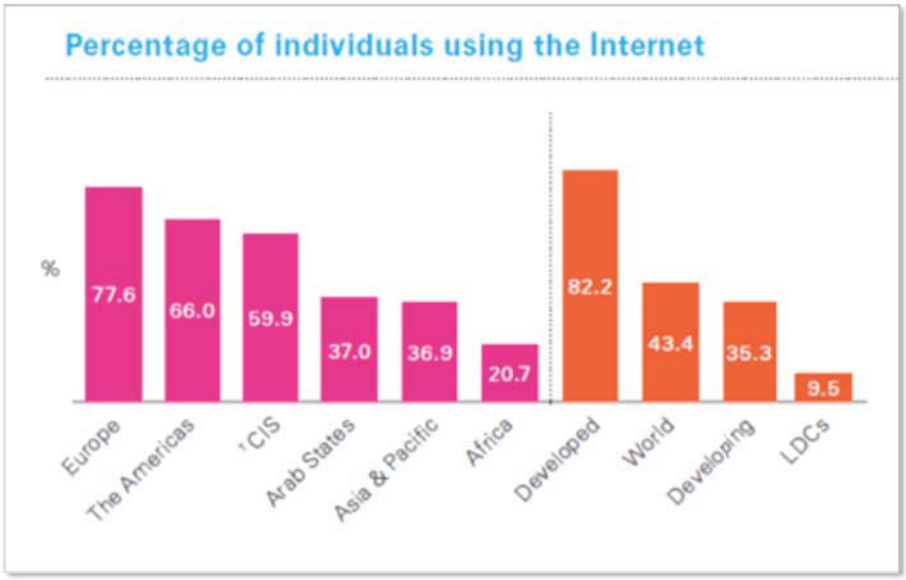
The bulk of literature on the subject shows, without a shadow of a doubt, that the future of universal service cannot fail but to include availability of broadband data transmission and Internet access services. The developments of recent decades, linked to the digitalisation of content, the exponential growth of Internet use and the technological advances in the provision of electronic communications services, make broadband access one of the main growth engines of the economy and social inclusion. The indicators in this respect are significant and conclusive.

In fact, according to recent data from the ITU, more than 3.2 billion people use the Internet, i.e. about 40% of the world's population:



Source: *: ICT Facts & Figures, 2014, ITU*[128]

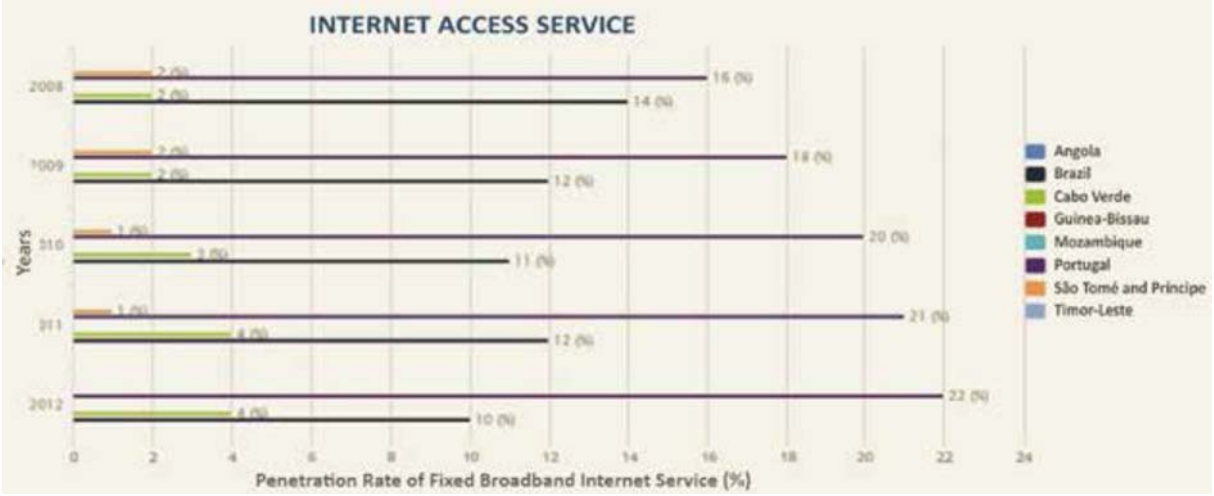
More than two thirds of Internet users are currently located in developing countries or emerging economies. However, penetration data for this service in these countries is still far from representing a significant reality (32%), despite a growth rate of about 8.7%. According to the ITU, overall, there are still about 4 billion people without access to the Internet. The most significant gaps are reported in Africa, as shown in the following graph:



Source: *: ICT Facts & Figures, 2014, ITU*[129]

128. http://www.itu.int/en/ITU-D/Statistics/Pages/facts/default.aspx.
129. http://www.itu.int/en/ITU-D/Statistics/Pages/facts/default.aspx.

In the case of CPLP Member States, the (limited) general data available shows some shortcomings in this area, with most of the countries reporting a percentage of Internet users under 25%:



Source: *ARCTEL 2012*[130]

Even in countries with the highest rates of Internet usage, penetration of the broadband access service falls short of being significant, which means that there is still a large proportion of people lacking access to this service, despite recognition that broadband access is cited as a fundamental right[131] and one of the services with most importance and relevance to the social and economic development of the XXI century.

In addition, the indicators described above demonstrate that the market is not able to provide this service generally to the population and throughout the territory, so that a lack of measures to promote the service may increase existing technological asymmetries and generate problems of social exclusion.

As such, taking into account: (a) the growing importance of the broadband Internet access service, (b) international growth estimates and (c) the shortcomings prevailing in most CPLP countries with regard to the provision of this service, **it is considered, as a principle, fitting that the proposed scope of the universal service should incorporate data transmission services and broadband Internet access**.

Nevertheless, there are three important questions in this area described below.

The *first question* refers to potential gaps in access to the international connectivity that is essential to allow adequate access to the Internet, given that some CPLP countries report gaps in this respect. However, although of great relevance, this aspect is outside the scope of the present analysis.

The *second question* relates to the definition of the data transmission speed required to achieve the targeted objectives. Given the different characteristics of CPLP countries, it does not appear fitting to define a specific value in terms of transmission speed. This value should be set on a case-by-case basis depending on the progress of each country, social needs and other goals being pursued, whereby it is recommended that this assessment be reviewed periodically by the regulator, which would be responsible for assessing technological progress, market growth and user demand.

Although fixed bit-rates should not be set, reference values should be given, and in this regard, there are various relevant experiences. Indeed, some countries have imposed access speeds above 256 Kbps and other speeds above 1 Mbps.

130. http://www.arctel-cplp.org/observatorio.

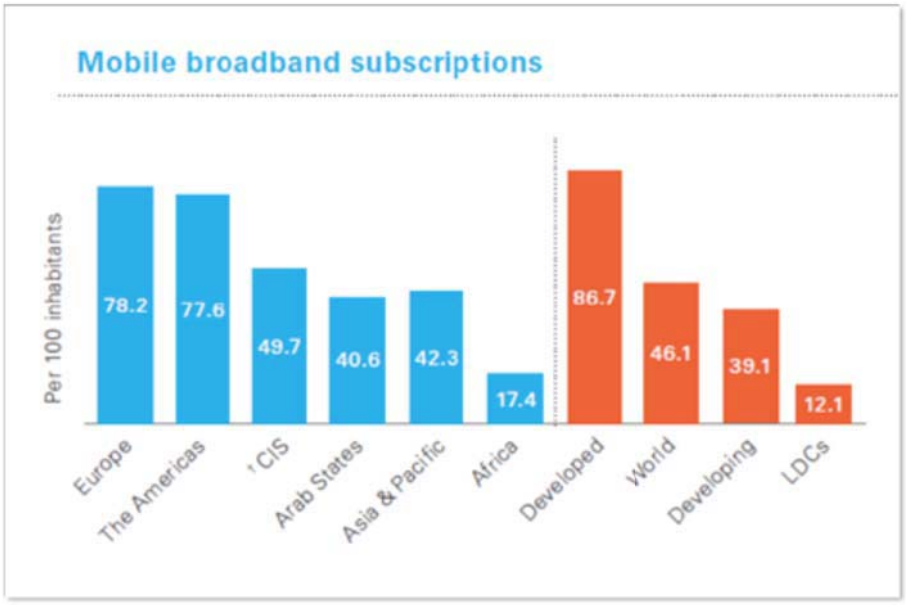
131. A decision along these lines has been taken in France.

Finally, a *third question* relates to the technology or infrastructure supporting this service. Good practice recommends that this service should be provided on a neutral basis, in terms of technology and infrastructure. Even though the use of specific infrastructure should not be restricted, socio-economic reality as well as the geographical conditions of the majority of CPLP countries (vast territorial areas with many sparsely populated rural and remote areas), calls for the consideration of two types of infrastructure to ensure greater mobility and greater penetration capacity:

On the one hand, terrestrial mobile networks are assumed as the optimal vehicle for providing provide mobile broadband in certain countries. In most of the CPLP countries, penetration of fixed services is zero or minimal, and topographical conditions make the deployment of fixed networks economically inefficient, so that associating the provision of broadband with fixed infrastructure may lack appeal from the perspective of private investment. On the other hand, financing fixed broadband networks using public funds can prove unfeasible from the point of view of public finances and not in accordance with the principles of efficiency and economic rationality, which guide the allocation of these funds[132].

Furthermore, the expansion of a fixed network to provide broadband access, with a universal character, cannot be separated from other technical aspects that should be a precondition to guarantee access with minimum levels of quality. In fact, the absence, in many CPLP countries, of harmonised technical standards and requirements applicable to the conditions governing individual network users[133] has substantial impact on effective access, with universal character, to the broadband Internet access service supported over fixed networks.

Another aspect to consider is that of the cost of equipment to be made available to end-users benefiting from broadband access, which also have an impact on the costs of making the service available overall. Currently, the costs of equipment associated with mobile broadband appears to be lower and this equipment is also more attractive from the point of view of its portability by the user.



Source: *: ICT Facts & Figures 2015, ITU*[134]

The growth in mobile networks and in the mobile broadband service contrasts positively with the stagnant situation that exists in the fixed broadband service, which, with some exceptions resulting from the expansion of FTTx networks and the consequent increase in penetration rates of bundled offers over such networks, continues to lag without a clear trend of growth.

132. This consideration does not contradict, however, the thinking that advocates deployment of next generation fixed networks, for example in that a mobile network will be more robust when the core network is more robust.

133. Addressing this absence necessarily implies articulation of ICT policies with other sectors, particularly in the urban sector, and adoption of urban and building regulations in this regard.

134. http://www.itu.int/en/ITU-D/Statistics/Pages/facts/default.aspx.

In light of the above, mobile service networks appear to be the infrastructure best able to support universal availability of the service of broadband access to data transmission and Internet services in CPLP countries.

Moreover, the provision of communications services by satellite may be a necessary option for African countries to take in ensuring the provision of universal service. From the outset, satellite services do not require potentially costly investment in network infrastructure, making it possible to take advantage of the satellite footprints which usually cover large areas of territory. It is an option of great interest in remote areas with low population density, and it is certain that satellites will play an increasingly important role in the pursuit and promotion of a wide range of economic activities which are essential to life in society[135].

At least two Portuguese-speaking African countries are already "looking" to space, with intentions to invest in satellite launches and/or activities in space. This is the case of Angola, with the launch of the Angosat satellite planned for 2017 and Cabo Verde, with the launch of a public tender for the development of Cabo Verde's space policy in 2014.

Given that all countries have orbital positions pre-allocated by the ITU, and that they may additionally be chosen as jurisdictions for companies placing their applications for the allocation of orbital positions for satellite occupancy, investment in the launch of satellites or assignment of orbital positions for private satellites may represent invaluable opportunities, not only to promote communication in rural or among less well-off populations, but also for the economic development of the country.

Television broadcasting service

It is also being discussed whether or not the scope of universal service should cover the television broadcasting service. Traditionally, this service has never been included within the scope of universal service, but given the convergence of technologies and services, there has been discussion in some countries about whether its inclusion would make sense.

However, this hypothesis raises several questions. From the outset, it may not be suitable for countries which have defined different legal frameworks and supervisory authorities for the telecommunications sector and the television industry, although it is always possible to make use of legal mechanisms to ensure institutional coordination and cooperation. Furthermore, most countries have decided to address the issue of television signal broadcasting in a specific manner, developing transition plans for digital terrestrial television involving the designation or selection of specific operators for this service, so that any amendment to link the two regulatory frameworks could hamper implementation in terms of the effectiveness and efficiency of the solutions to be adopted.

It is also possible to question the rationale behind the inclusion of television signal distribution services within the universal service. In fact, looking at the revolution witnessed in the audio-visual field, the central issue to be considered for the purpose of a new design of universal service may stem from ascertaining whether or not to guarantee the right of users to access all content in general rather than to restrict access only to content provided by television operators.

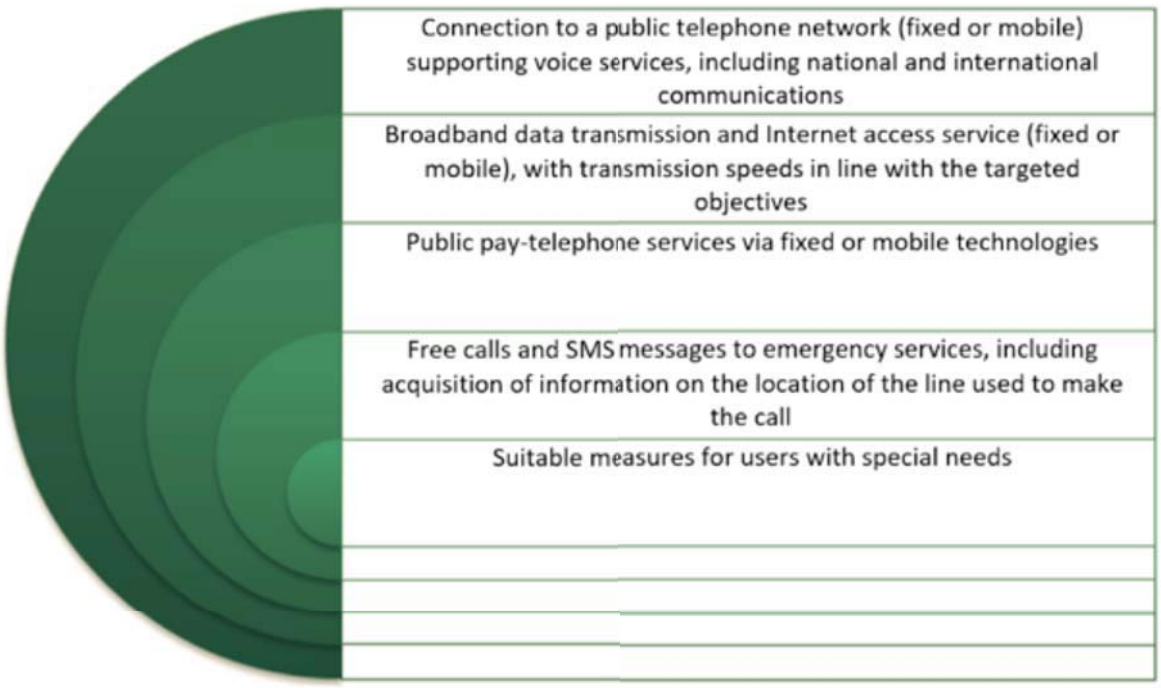
In this respect, with a push for the inclusion of broadband access within the scope of the universal service, the possibility of ensuring that users have the means to access all available *online* content is already safeguarded, which will contribute to a reduction in the digital asymmetries reported among some parts of the CPLP.

Accordingly, given the above criteria, it is considered **that this service does not meet the requirements necessary for it to be included within the scope of universal service proposed for the CPLP**.

135. The United Nations has regularly highlighted the importance of space-based applications in promoting development: the 1999 Vienna Declaration on Space and Human Development ("The Space Millenium: Vienna Declaration on Space and Human Development", adopted by the Third Conference of COPUOS - "United Nations Committee on the Peaceful Uses of Outer Space"(UNISPACE III) at its 10th plenary meeting on 30 July 1999) is an important milestone in this respect and, more recently, United Nations Resolution 66/1 of January 2012 (A/RES/66/71, UNGA, 12 January 2012) recognised that space science and technology, and applications in the area represent important contributions to development and to economic, social and cultural well-being, which is entirely in line with objectives associated with universal service.

7.3.1.5 Proposal of provisions to be included within the scope of the CPLP universal service

In view of the above points, the following minimum set of services is proposed for inclusion within the universal service of the CPLP:



7.3.2 ICT Projects and Initiatives

As shown in the proposed approach described above, the second pillar of universalisation initiatives deemed relevant to detail in this study refers to ICT projects and initiatives. As mentioned above, as a rule, these projects function in parallel to the universal service but aim to achieve the same goals. Moreover, this approach has been gaining relevance in a context of increasing convergence and integration of services and infrastructure.

For this reason, it is important to ensure that such projects and initiatives can make a real difference in CPLP countries, eliminating asymmetries that still exist in terms of digital inclusion.

In contrast to the universal service, these projects and initiatives are marked by their flexibility and the ability to mix various provisions, services or goods, with the aim of satisfying specific needs, not necessarily related to the telecommunications sector. For this reason, it is not easy to indicate and detail a common concept that can cover the different approaches and realities of all these projects and initiatives.

Such projects could cover a range of areas and different issues relating to:

These projects and measures aim to achieve one or more of the following objectives:

(i) Installation and/or modernisation of telecommunications infrastructure in certain areas or supply of telecommunications equipment on an individual basis (e.g. mobile phones) or collective basis (e.g. telecentres), especially for remote areas or deprived or disadvantaged groups;

(ii) Giving capacity to public institutions such as schools, colleges, universities, health centres, hospitals, museums, libraries and other entities, with broadband data transmission and internet access equipment;

(iii) Giving capacity to citizens and training of human resources through digital literacy projects focused on most vulnerable groups or those most in need in terms of digital inclusion, especially the elderly, women, children, pregnant women and people with disabilities;

(iv) Subsidy of access to certain electronic communications equipment or services available at special prices or tariffs that do not correspond to normal commercial practice;

(v) Development of content creation applications and programs related to ICT, especially those aimed at promoting training, literacy and digital literacy among vulnerable groups;

(vi) Provision of ICT services, including virtual applications, such as cloud services;

(vii) Promotion of e-health, e-education, e-government and e-banking services.

As a rule, these projects are launched through public tenders, with the Government, the Regulator or other public bodies acting as contracting authorities. The beneficiaries may vary, but generally they are geared to telecom operators, especially because projects often involve provision of one or more electronic communications services.

Given the diversity of projects and initiatives in this area, telecommunications networks often assume a role as mere vehicles or basic infrastructure, supporting certain services. However, such projects have a relevant reflexive or indirect impact on the telecommunications sector, improving the expansion of infrastructure, human resource training and penetration of certain services.

It is undeniable that these projects and initiatives are needed to achieve universal service objectives in the field of ICT and telecommunications. However, it is also undeniable that in most cases this area has lacked a detailed legislative framework that serves to promote further projects and initiatives, ensuring necessary funding. As such, it is considered fundamental to draw up a legislative framework that promotes and encourages these initiatives.

In this sense, it is considered that, alongside the universal service, the legislation of the various CPLP countries should also establish a favourable environment for these ICT measures and initiatives, establishing rules to govern the launch of tenders, the objectives to be achieved, the selection of beneficiaries, the oversight of projects and appropriate funding. The existence of this framework would allow, on the one hand, achievement of a minimum level of harmonisation in a sensitive and multidisciplinary field and, on the other hand, promote the execution of more projects and initiatives, ensuring the necessary funding.

7.3.3 The obligations of universalisation

Even though it is recognized that the objectives of universalisation and digital inclusion should be pursued mainly through the universal service and through ICT measures and initiatives, the importance of universalisation obligations should not be disregarded.

As previously mentioned, universalisation obligations may be imposed on all operators, especially those competing under a certain procedure. In some countries, as is the case of Cabo Verde, such obligations have even been used to pursue objectives of universalisation and digital inclusion, going beyond the more traditional boundaries of universal service. For this reason, they are considered as alternative means to universal service, while aiming to achieve the same ends.

It is important that the legal framework in each CPLP country allows the imposition of universalisation obligations, whether under market access rules or under rules governing the allocation of scarce resources, such as radio spectrum frequencies. This would provide a way of addressing certain shortcomings of universalisation or of going beyond the scope laid down in legislative terms, in particular as regards universal service.

Although some CPLP countries already have some tradition in this area, it would be important to consolidate the legal regime in this field by defining the conditions under which obligations of universalisation may be imposed and their scope. Of course, where universalisation obligations are imposed, these should be considered in the definition of universal service and in the preparation of ICT projects and measures.

7.3.4 Adjacent policies and measures

At this point, the intention is to draw attention to the need to consider measures of universalisation and digital inclusion in a perspective integrated with other sectors of activity.

In this respect, activities in the postal sector take on special relevance. In fact, the activities of telecommunications and of the postal sector are very closely related and increasingly rely on a common operation. On the telecommunications side, the use of networks and the growth of e-commerce require rules in place to ensure the delivery of orders to the end-user according to specified time limits; meanwhile, postal services are increasingly dependent on the operation of telecommunications networks for advances in terms of services and quality.

Therefore, there are some studies that seek to better analyse this reality, with a view to ensuring greater coordination and integration between the universal service of telecommunications and the universal service in the postal sector. More than defining a common concept, such studies point to the need to lay down common rules to derive maximum value from both sectors.

Another area where there may be an approximation in approach is energy, since telecommunications provide security and control for energy networks and can help make certain processes more efficient.

7.4 Model Implementation

In terms of implementation of the proposed model, there is a range questions which should be considered and analysed and which impact the suggested proposed approach. Some of these are indicated below.

7.4.1 Amendment of the legal framework and regime

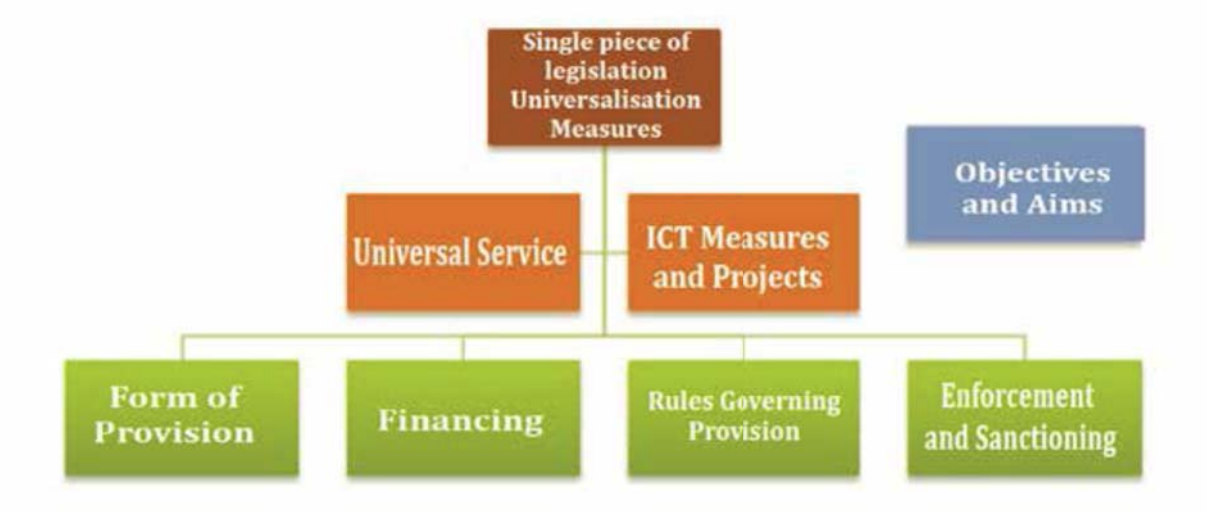
Implementation of the proposed approach detailed in the previous chapter involves the introduction of legislative changes to the current regime. This occurs, from the outset, because in most countries analysed in this study the concept and scope of universal service is defined in the law itself.

The need to modify the current system poses a question as to the fitting intensity of legislative intervention. In our view, it would make sense to create a single, harmonised system for measures of universalisation and digital inclusion, i.e. universal service on the one hand and ICT measures and initiatives on the other. This would imply abolition of universal service rules in specific telecommunications sector legislation.

Legislative integration is based on the fact that, even while conceptual autonomy should be maintained, universal service is today integrated into a wider context of universalisation measures, and its role is recognised as a mechanism for the delivery of services considered essential for life in society and economic development, and essential for the various developed ICT measures and initiatives.

The existence of a single piece of legislation could allow the creation of better harmonised rules and the establishment of more effective links and rules between the universal service and other initiatives and ICT measures that operate in parallel. In addition, a single piece of legislation would address the fundamental matter of funding, providing common rules for the financial support of the universal service and for the rules governing the financing of ICT measures and initiatives.

Schematically, the intention is as follows:



The goals and objectives to be achieved will certainly vary from country to country and must be adapted at all times. However, in general terms, and in accordance with the above, it is recognised that such measures may pursue one or more of the following objectives:

(i) The expansion of telecommunications infrastructure throughout the national territory;

(ii) The modernisation and technological upgrade of existing telecommunications infrastructure;

(iii) The promotion of access to information and knowledge by all citizens, reducing social inequality and narrowing the digital divide;

(iv) The provision of services to citizens who do not have the necessary resources to contract such services under market conditions, in family dwellings or at public access points;

(v) Promotion of access to the Internet and the digital world in family dwellings or at public access points;

(vi) Promotion of digital literacy for all citizens, including in terms of education, the creation of research skills and use of electronic tools;

(vii) Safeguarding the special needs of citizens with disabilities or other special needs;

(viii) Minimisation of regional asymmetries;

(ix) Fostering research and development of new services and content;

(x) Access to new forms of accessing ICT services.

These goals and objectives will be pursued, as appropriate, through the universal service and/or through ICT measures and initiatives.

7.4.2 Concepts and scopes

As already mentioned above, it is considered that legislation should only provide for the concept of universal service, leaving the definition of its scope to an act of infralegal value, such as ministerial decision or decision of the regulatory authority. In any case, a minimum content for the scope of universal service in CPLP countries is suggested above.

With regard to ICT measures and initiatives, more important than presenting a common concept, it is only important to make provision in law, on an exemplarily basis, for the various forms that these can take, thereby establishing a minimum harmonised set.

7.4.3 Form of provision

One of the most important issues concerns the way in which both universal service and ICT measures and initiatives should be made available.

With respect to universal service, essentially, the question that arises here is whether the universal service should have a preventive and general purpose or a reactive and focused purpose. In the first case (*preventive perspective*) the most common form of provision entails designation of one or more specific undertaking as responsible for supplying the provisions of universal service in the whole territory. This is the current model in the European Union. In the second case (*reactive perspective*) the provisions associated with universal service are available in a context of specific projects and initiatives designed to address specific needs and shortcomings. This corresponds to the current model in the United States.

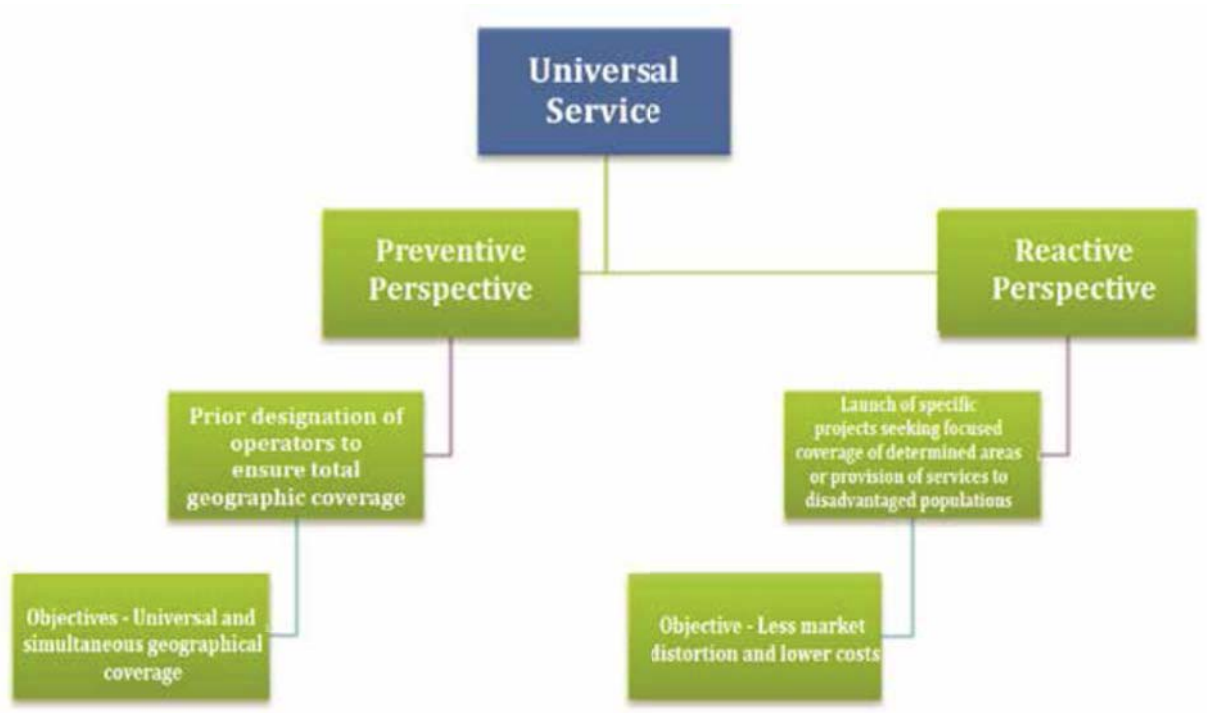
Both of these perspectives are valid and each has advantages and disadvantages. With a preventive perspective, the aim is essentially to rapidly ensure full geographical coverage for certain basic services, making access by users easier and faster. However, this model ends up imposing provision of services in areas and among populations that are already sufficiently served by commercial offers, or ends up requiring installation of the network in areas that do not require any coverage. With the reactive perspective, it is recognised that there are certain areas and populations that are already sufficiently served by the market or whose coverage is not relevant, thereby opting to focus on the provision of universal service in defined geographical areas or to the most disadvantaged population groups.

Depending on the stage of the telecommunications sector's development and, in particular, the level of penetration of basic services of the universal service, it may make sense to opt for one or another solution.

In the case of CPLP countries, it is important to allow this choice, given the differences in terms of developments in the sector, which may justify certain countries favouring full coverage of the territory to the detriment of other more reactive options. However, it should be kept in mind that the impact in financial terms of one or another perspective can be very important. In the first scenario, with a requirement that tends towards full coverage of the territory, the costs involved can be enormous, even through mobile technology, thereby causing a very significant impact in terms of public or private funding mechanisms. Moreover, this scenario gives rise to situations of improper financing, given that the designated provider may seek financing in respect of customers who do not generate any costs.

Notwithstanding the above, given the differences among CPLP countries, in general, the evaluation performed suggests that the reactive perspective would be preferable, since it limits financing needs from the outset and is less intrusive to the functioning of the market. As such, it is suggested that the paradigm of the universal service should evolve from a mechanism based primarily on preventive designation of certain providers to cover the entire territory into a mechanism that is dependent on the identification of specific needs, thereby giving rise to a purpose that is more reactive than preventive.

However, both options should be left open, as follows:



It should be noted that this perspective does not conflict with the characteristic of universality which is inherent to the universal service. In fact, this characteristic does not require the availability of all basic telecommunications services through universal service obligations. On the contrary, the concept accepts that the market itself or other private mechanisms may contribute to the provision of basic services. The important thing is that they are accessible at any point of the territory.

In relation to ICT measures and initiatives, no reason is seen which would suggest a different delivery mechanism than that currently practiced; as such, these should continue to function on the basis of specific projects, focused on perceived needs in the market.

Furthermore, in general terms, universal service projects and ICT measures and initiatives should be awarded through transparent and non-discriminatory procedures, particularly public tenders, as the most appropriate means in this context, thereby enabling the assurance of competition and an immediate reduction in the costs of necessary financing.

7.4.4 Financing

The financing of universal service and ICT measures is perhaps the subject that is most topical and relevant today. Virtually all CPLP countries either have or plan to create funding mechanisms, above all through a universal fund, which emerges as the more traditional funding mechanism.

The theme of financing and, in particular, the theme of universalisation or universal service funds, raises issues which could justify a separate study just on their own. In this document, the intention is to focus only on some more specific issues as deemed relevant, ending with the presentation of good practice.

Scope

Considering the ambitious objectives presented in this study, it is our view that universal service funds should be used to finance both universal service costs and the costs of ICT measures and initiatives. The rules to be implemented should therefore provide for the possibility of financing all or part of the costs associated with universal measures and digital inclusion.

Assuming that the fund will be a favoured means to finance these projects, it is important, from the outset, to rethink what to call the fund, i.e. whether a more general name should not be given to the fund — e.g. "*universalisation fund*".

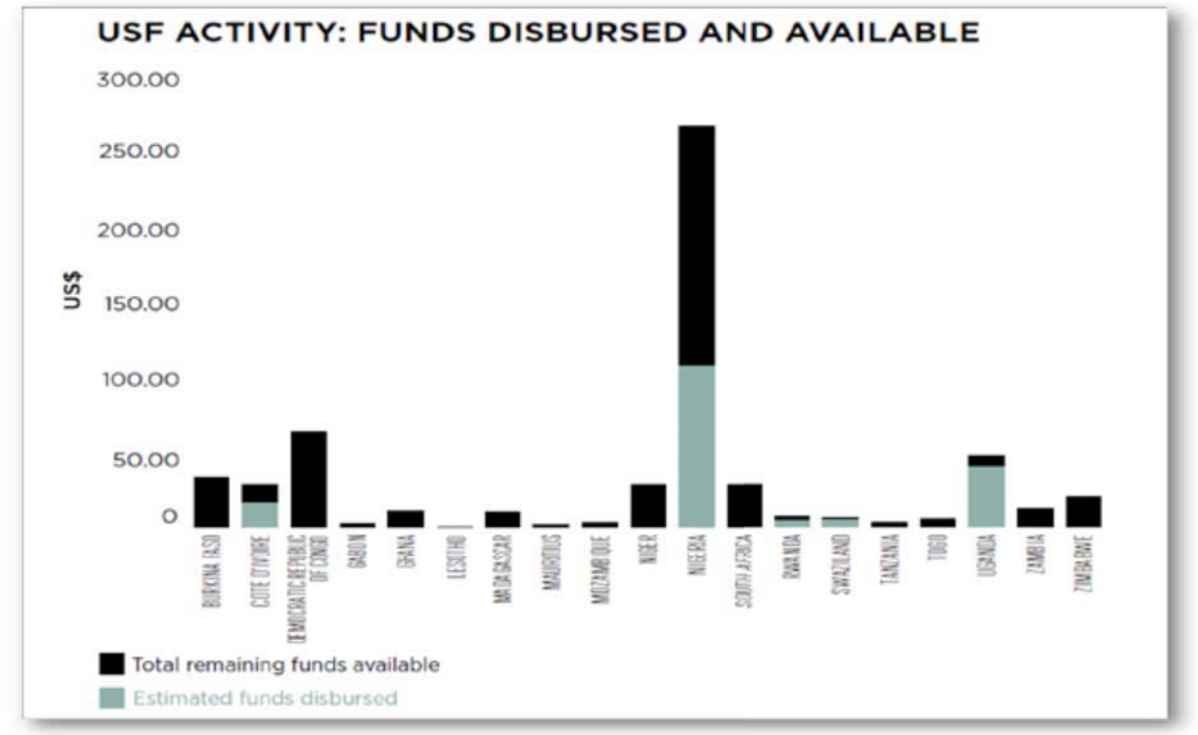
Contributions

The manner of determining who shall contribute to the fund and the amount of the contributions raises several questions, including most importantly:

The first question relates to obligations to make contributions to the fund. Telecommunications operators remain the most appropriate candidates, and there should be continued provision for mechanisms which ensure that these operators finance universalisation measures and projects. Since it is clear that operators should continue to be required to contribute to the fund, the big question that arises is the question of how the *quantum* of contributions should be determined at any given time. Here there are two possible alternatives: (a) determine the value of the contribution only after calculating the costs of universalisation measures, or (b) determine the value of the contributions in advance. Each of these options has advantages and disadvantages.

The main advantage of the first alternative is that the amount of compensation is adjusted exactly to the value of the financing needed; this avoids overloading operators with contribution obligations whose values may not be employed. However, there is an important disadvantage since this approach does not provide the fund with sums which may be important to allow immediate financing of universal fund projects in certain cases.

The second alternative has the major advantage, precisely, of providing the fund with a sufficient volume of revenues, so that it can be quickly managed in response to new universalisation projects. The main drawback, however, is the fact that the available sums are often not completely used, without triggering a reduction or suspension to contribution obligations. In this regard, several studies show that there is a mismatch between the amounts available in the fund and the amounts actually used in universal projects, as shown in the chart below:



Source: *: GSMA, Sub-Saharan Africa - Universal Service Fund Study, 2014*[136]

The chart above shows that of the 23 countries analysed in the study by the GSMA, as at the end of 2011, there was approximately $400 million available which remained undisbursed, that is, this value has not been used to provide financing for any kind of universal project. Also, according to the GSMA, most funds analysed had not disbursed any sums while continuing to collect the contributions imposed on operators.

Given the above, it is important to take these aspects into consideration from the outset when reviewing/ setting up a universalisation fund, through three specific measures.

One — the contribution amounts should be set based on a certain range (e.g. 1 to 5% of gross operator revenues), depending on the fund's financing needs and the projects to be subsidised. In this regard, financing limits can be set for certain projects where these have some continuity, thereby limiting the fund's financing needs.

Two — there must be rules to ensure that contribution obligations are suspended where there are no financing needs or where the fund already has sufficient resources for the universalisation projects to be pursued in a given year.

Three — rules should be established which exempt certain operators from contribution obligations, especially in cases where operators do not have significant weight in the market and where the contribution in question may be considered an excessive burden on their activity.

136. http://www.gsma.com/mobilefordevelopment/sub-saharan-africa-universal-service-fund-study.

In addition, provision should be made for other sources of revenue, such as public funds and donations from private and public entities. It is also worth considering the possibility of a specific contribution by the users themselves, which could be defined as a percentage to be added to the prices of telecommunications services, included in the bill, in the case of post-paid service, or included in account top-ups in the case of pre-paid services.

Availability of funds and objectives

It is important to ensure that universal service objectives remain flexible enough so that the available funds are able to cover various services/project and so that the entities which contribute most to the fund can also put themselves forward as candidates to provide universal service or to apply for certain ICT projects.

One of the main problems detected in existing studies is that a lack of flexibility as regards the type of measures that can be supported by the funds has led to situations whereby the financial resources available in some funds remain undisbursed. As such, it should be clear that the fund should be able to support universal service projects and ICT projects incorporated by universalisation objectives.

At the outset, the sums to be financed should be those which result from tender procedures launched for the award of various projects, so that it is therefore not necessary to establish the net costs incurred in their provision. In any case, it is essential that oversight mechanisms are created to monitor the implementation of the projects and the provision of services.

Fund management

Another very important aspect relates to the rules governing the fund's management and administration; these rules must be transparent, clear and ensure necessary independence from operators and public authorities.

(Some) good practice in terms of universalisation funds

Based on the study Universal Service Fund and Digital Inclusion for All, 2013, ITU[137], examples of good practice can be suggested, also taking into account the SADC Guidelines on Universal Access and Service, of 2011[138]:

(i) Integration and coordination with universalisation policies, whereby universalisation objectives and targets need to be defined periodically (e.g. on an annual basis), in liaison with the private sector and involving public consultations;

(ii) Projects to be supported should be flexible and technologically neutral, covering telecommunications and ICT measures;

(iii) Possibility of adjusting the contribution obligations in line with financing needs on an ongoing basis.

(iv) Funds should be allocated through transparent and competitive rules, such as public tenders;

(v) Provision for incentives to increase participation in processes (e.g. tax incentives or even in terms of future contributions to the fund);

(vi) Establishment of a legally autonomous entity responsible for the fund's administration;

(vii) Funds should be managed based on accounts which are independent from the government and the regulator;

(viii) Definition of clear rules as to the entity responsible for managing the fund, including rules of governance and social responsibility;

137. http://www.itu.int/en/ITU-D/Regulatory-Market/Documents/USF_final-en.pdf.

138. http://www.crasa.org/crasa-publications-details/id/60/sadc-guidelines-on-universal-access-and-service-2011/.

(ix) Provision for rules to ensure the transparency in the operation of the fund, for example, through annual reports and by providing information on a specific website;

(x) Definition of guidelines for the fund's interaction with other means of public financing (e.g. World Bank) or private financing (e.g. PPP).

Some of the countries analysed in this study respect and implement these best practices, whereas it is important to accomplish greater alignment at CPLP level, given that there are significant differences.

7.4.5 Other rules

As a final note in this context, we highlight the importance of provisions in the legal system for specific rules to ensure the quality of service and affordability. The capacity of the regulator to provide supervision of universalisation projects must be ensured by giving it the necessary powers in this field.

Moreover, it is also important to provide specific rules on the use and purpose of infrastructure and facilities subsidised under the universalisation fund, ensuring that they can continue to be used, after the end of the project in question.

8. Recommendations

International trends point clearly to a need to rethink and reassess the universal service in order to make the goals that underlie it more ambitious, more convergent and more integrated, bringing this mechanism of regulation into line with the challenges of the twenty-first century. In this context, the following general recommendations are presented for the countries of CPLP and Macau, China.

Universalisation Model

RECOMMENDATION 1: *Recognising the importance of maintaining conceptual distinction between the universal service and ICT measures and initiatives, a new paradigm of universalisation is proposed that entails integration of these realities into a common concept of universal access and digital inclusion.*

RECOMMENDATION 2: *Policies of universalisation and digital inclusion should be defined periodically, establishing objectives or goals to be accomplished: (i) through the universal service and (ii) ICT measures and initiatives, in conjunction with the private sector.*

RECOMMENDATION 3: *Implementation of the proposed model implies a legislative amendment, whereby it is suggested that a single and harmonised regime be created to govern universalisation measures and digital inclusion, covering, on the one hand, universal service and, on the other hand, ICT measures and projects, setting out better harmonised rules on procedures of universalisation, financing, provision and oversight.*

RECOMMENDATION 4: *As an alternative to universal service and ICT measures and initiatives, which should be deemed optimal vehicles to accomplish goals of universalisation and digital inclusion, the legal regime should also provide for the imposition of universal service obligations on all and any operator, under rules governing market access or governing allocation of scarce resources; this will contribute, in particular, to improved rates of coverage by telecommunications networks throughout the territory.*

RECOMMENDATION 5: *The measures of universalisation and digital inclusion should be rethought according to a perspective integrated with other sectors of activity, including the postal sector and the energy sector.*

Universal service

RECOMMENDATION 6: *Conceptually, the universal service should maintain its more traditional characterisation, i.e., as a minimum set of telecommunications services considered essential, on an ongoing basis, for life in society and for economic development.*

RECOMMENDATION 7: *The scope of the universal service should not be defined in legislation, but set forth in an act of infralegal value, thus allowing greater flexibility to include services that are deemed essential, at any given time, to social inclusion, territorial cohesion and economic development.*

RECOMMENDATION 8: *The provisions to be included, at any given time, within the scope of the universal service should be implemented through a set of clear, transparent and rigorous criteria.*

RECOMMENDATION 9: *The analysis of the current scope of universal service in the countries analysed in this study and evaluation of candidate services, in light of international discussions on the subject, warrant the following proposal for a new scope of universal service:*

- Connection to a public telephone network (fixed or mobile) with support of voice services, including national and international communications;
- Broadband data transmission services and Internet access (fixed or mobile), with transmission speeds in line with the objectives to be achieved;
- Public pay-telephone service, via fixed or mobile technologies;
- Free calls and SMS to emergency services, with information obtained on the location of the line being used to make the call; and
- Appropriate measures for users with special needs.

RECOMMENDATION 10: *The broadband access service should be made available on a neutral basis in terms of technology and infrastructure; nevertheless, the reality of the countries concerned recommends consideration of mobile telephone service networks and satellite networks as infrastructure to support imposition of universal service obligations.*

RECOMMENDATION 11: *The speed of data transmission and Internet access should be defined on a case-by-case basis depending on the stage of each country's development, social needs and other goals to be achieved; this assessment shoul be reviewed periodically.*

RECOMMENDATION 12: *In general, and depending on the development stage of the various countries analysed, the paradigm of universal service provision must evolve from a mechanism based primarily on preventive designation of determined providers to cover the entire territory into a mechanism which essentially addresses specific needs of particular areas or particular groups of people. The universal service should function taking an approach based on universalisation projects, since this is the approach which mitigates financing needs and is less intrusive in terms of the functioning of the market.*

ICT measures and initiatives

RECOMMENDATION 13: *It is suggested that a legislative framework be created which fosters ICT measures and initiatives, establishing rules governing the launch of tenders, the selection of beneficiaries, the oversight of projects and their funding.*

RECOMMENDATION 14: *ICT measures and initiatives should continue to function on the basis of specific projects focused on market needs.*

RECOMMENDATION 15: *What characterises these projects and initiatives is their flexibility and the possibility of mixing various provisions, services or goods, with the aim of satisfying specific needs not necessarily related to the telecommunications sector, whereby it is essential that the legal system allows accommodation of these various realities and financing of the various projects in this area.*

Implementation, Finance and Management

RECOMMENDATION 16: *Universal service projects and ICT measures and initiatives should be selected through procedures which are transparent and non-discriminatory, in particular through public tender procedures.*

RECOMMENDATION 17: *The legal framework should provide for specific rules which ensure quality of service and affordability of universal service projects, strengthening the regulator's ability to oversee implementation of such projects, with further provision made for rules governing continuity in the use of infrastructure and facilities subsidised through universal service funds.*

RECOMMENDATION 18: *Financing mechanisms should be created, in particular a universal service fund, which serve to finance both the provision of universal service as well as ICT measures and initiatives.*

RECOMMENDATION 19: *The sources of universalisation fund revenues should be diversified, made not only for contributions from telecom operators, but also from budgetary allocations from the respective States, donations from private and public entities and also specific contributions from users themselves, which may be defined as a surcharge on the price of telecommunications services.*

RECOMMENDATION 20: *The contribution sums from telecommunications operators should be based on a determined range (from 1 to 5% of gross revenues), with the actual amount determined depending on the fund's financing needs and the projects requiring support at any given time, in accordance with approved universalisation policies.*

RECOMMENDATION 21: *Contribution obligations should be suspended when there are no financing needs or when the fund has available resources to accomplish universal policies at any given time.*

RECOMMENDATION 22: *Rules governing the fund's management and administration must be transparent, clear and ensure necessary independence from operators and public authorities with responsibilities in this field, with publication of annual reports on the fund's activity and the availability of complete information on a website.*

RECOMMENDATION 23: *The fund's accounting and available revenues should be managed independently from the accounts of the State and of the Regulator.*

RECOMMENDATION 24: *A policy should be defined which gives incentives to the participation of operators in universal projects, including tax incentives or incentives related to future contributions to the fund.*

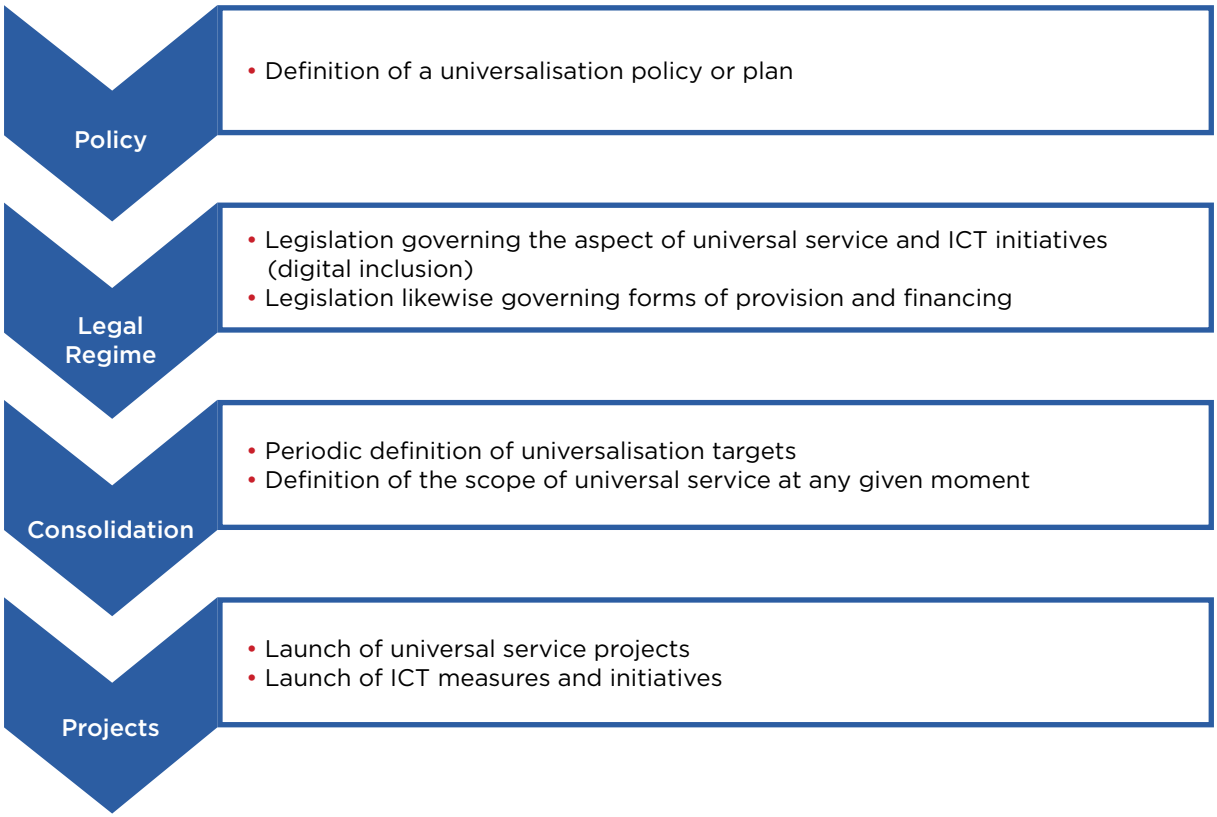
9. Aspects of implementation

Implementation of the model based on the approach detailed above naturally falls directly to each CPLP Member States, and it is the responsibility of each State to define the conditions and means to be used in order to review the concept and scope of universal service and ICT measures and initiatives.

It would be advantageous, although not essential, from the outset, to create a common platform at the level of the CPLP and Macau, China, with a view to some of the recommendations of this study, enabling, from the beginning, the sharing of experiences and ensuring that each country is able to benefit from common experience. As such, it is proposed that a oversight committee be set up at the level of the CPLP and Macau to monitor measures of universalisation and digital inclusion and that a set of principles and good practice be defined in this context.

Countries that decide to adopt such principles and good practice should begin by approving a policy of universalisation and digital inclusion which gives the necessary framework for the introduction and implementation of changes.

Schematically, we believe that the implementation of the suggested model will require the following levels of intervention:



List of principal acronyms and abbreviations

AGER
Autoridade Geral de Regulação (São Tomé and Príncipe)

ANAC
Agência Nacional das Comunicações (Cabo Verde)

ANACOM
Autoridade Nacional de Comunicações (Portugal)

ANATEL
Agência Nacional das Telecomunicações (Brazil)

ANC
Autoridade Nacional das Comunicações (Timor-Leste)

ARCTEL
Associação de Associação de Reguladores de Comunicações e Telecomunicações da Comunidade dos Países de Língua Portuguesa (Association of Communications and Telecommunications Regulators of the Community of Portuguese Speaking Countries)

ARN-TIC
Autoridade Reguladora Nacional das Tecnologias de Informação e Comunicação da Guiné Bissau (Guinea-Bissau)

CIS
Commonwealth of Independent States

CPLP
Community of Portuguese Speaking Countries

DSRT
Direção dos Serviços de Regulação de Telecomunicações (Bureau of Telecommunications Regulation) (Macau, China)

FUST
Fundo de Universalização dos Serviços de Telecomunicações (Telecommunication Services Universalisation Fund — Brazil)

GTSU
Grupo de Trabalho do Serviço Universal (Universal Service Working Group)

ICT
Information and Communication Technologies

INACOM
Instituto Angolano das Comunicações (Angola)

INCM
Instituto Nacional das Comunicações de Moçambique (Mozambique)

ITU
International Telecommunication Union

ORTEL
Órgano Regulador de las Telecomunicaciones (Equatorial Guinea)

VdA
Vieira de Almeida & Associados, Sociedade de Advogados, R.L.

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