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Wholesale Pricing Guidelines for the ICT Sector for SADC

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WHOLESALE PRICING GUIDELINES FOR THE ICT SECTOR FOR SADC

Introduction

1.1 The SADC Protocol on Transport, Communications and Meteorology is the basis for providing direction to development of the communications sector in the region. Amongst others, the Protocol provides the regulatory authorities with the responsibility to develop and determine harmonized guidelines and regulations for the region.

1.2 In the "Declaration on Information and Communications Technology", signed by the Heads of all the SADC countries in August 2001, it is recognised that SADC needs a coherent regional policy and strategy on ICT[1] that promotes sustainable economic development, technology and bridges the digital divide within the region and rest of the world.

1.2.1 The Declaration on ICT acknowledges that effective information and communication is best achieved under an environment characterized by e.g. policy guidelines, legislation, well defined strategy and telecommunications deregulation.

1.2.2 Further, it is declared that the Member States undertake to continue to sustain efforts "in creating a favourable regulatory environment and accelerated liberalization of the telecommunications sector, which aims at creating a three-pier separation of power, with governments responsible for a conducive national policy framework, independent regulators responsible for licensing, and a multiplicity of providers in a competitive environment responsible for providing services".

1.3 These guidelines have been prepared to support the development into a competitive and efficient ICT sector in the SADC region for the benefit of the users, through the provision of transparent and non-discriminatory guidelines on wholesale pricing[2].

Scope of Guidelines

2.1 The evolving competition in the market implies that new and existing providers need to have arrangements and agreements with each other to guarantee e.g. interconnection and interoperability of networks and services. In practice, a successful development of the sector relies to a large extent on agreements and relationships between the operators and service providers in the market.

2.2 Wholesale pricing refers to the compensation for wholesale products, services and associated facilities supplied by an operator. In the initial stages of liberalization, the wholesale pricing arrangements are fundamental to the development of fair competition in the

[1] ICT = Information and Communication Technology

[2] These guidelines on wholesale pricing for the SADC region are based on the analysis, findings and recommendations in the study report on wholesale pricing. The study report is a supporting document to these guidelines. The guidelines are kept rather brief and further details on the considerations and recommendations to the guidelines are found in the study report.

sector, since the major operator(s) usually has a significant advantage because it owns or controls essential facilities that new providers need access to on reasonable terms in order to compete successfully. Even as competition develops the prices for wholesale products and facilities will be highly important since the wholesale prices paid will make up a significant portion of the operators' total costs and revenues.

2.3 From a policy and regulatory point of view, there is a need to promote and stimulate wholesale pricing arrangements that lead to fair competition for the benefit of consumers.

2.4 The rapid changes in technology and markets lead to an increased convergence between the traditional telecommunications, IT and broadcasting/media sectors. This ongoing convergence needs to be taken into account when reviewing and analysing market conduct in the sector, including wholesale pricing arrangements.

2.5 These guidelines apply to wholesale pricing in the ICT sector, consisting of all electronic networks, electronic services and associated facilities[3].

Objectives and Principles

Objectives

3.1.1 The major objective of the guidelines is that SADC Member States should promote fair wholesale pricing regimes in the ICT market by:

- Ensuring that consumers get the maximum benefits in terms of choice, quality and value for money;
- Ensuring that the wholesale pricing arrangements are efficient; and
- Encouraging efficient investments in infrastructure.

Principles

3.2.1 The basic principles underlying these guidelines should be as follows:

- Non-discrimination;
- Transparency;
- Cost orientation;
- Sustainability; and
- Technology neutrality

[3] The provision of *content* over electronic networks and by using electronic services, as defined, should lie outside the scope of these policy guidelines and regulations. This will exclude e.g. broadcasting content and electronic commerce from the scope of these guidelines. The main reason for this is that content provision is governed by other laws and regulations where other considerations, on e.g. anti-competitive pricing and determinations of essential facilities, may apply. (One regional example of the separate treatment of policy and regulation of content is the SADC Protocol on Information, Sports and Culture.) The main aim of these guidelines is to provide guidance to a sector in transition from monopoly to effective competition with respect to infrastructure and service provision, and *not* to provide regulations on content or applications that use the networks and services. See also glossary of terms.

3.2.2 Non-Discrimination

3.2.2.1 The principle of non-discrimination should ensure that operators with market power give fair treatment to other operators, service providers and consumers, and are not allowed to provide less favourable conditions to some parties for the same product or service.

3.2.2.2 However, any operator may differentiate offerings and wholesale prices provided there are objectively justified conditions to do so[4].

3.2.3 Transparency

3.2.3.1 The Authorities should keep their procedures and decision making processes open to the public. The Authorities should also, whenever reasonable, consult all affected parties on matters that affect such parties.

3.2.3.2 Operators should, in accordance with the regulators' requirements, provide transparent information that should be available to other companies and to the public.

3.2.4 Cost Orientation

3.2.4.1 Cost orientation refers to the principle that the prices and charges for wholesale products and services should be oriented towards the underlying cost of providing them.

3.2.5 Sustainability

3.2.5.1 Sustainability requires that wholesale prices be established in a manner that compensates efficient wholesale operators for their wholesale service provision; that is, operators should have an opportunity to be compensated sufficiently to remain as a going concern over the indefinite future with respect to their provision of wholesale services.

3.2.5.2 The prices set should be at levels that could be sustained by efficient operators in a fully competitive market. Sustainability, however, does not require full compensation for inefficient or imprudent service provision.

3.2.6 Technology Neutrality

3.2.6.1 The principle of technology neutrality should apply, and will be assured if the application of the guidelines not discriminates nor favours any specific technology to the extent that it will benefit the Member States.

Categories of Wholesale Products

4.1 The wholesale facilities, products and services available and required are dependent on the market development and regulatory intervention.

4.2 Wholesale facilities, products, services and related functions relevant to these

[4] An example of such conditions may be lower unit cost due to higher volumes.

guidelines include, but are not necessarily limited to, the following:

(a) Access to local loops and other specified unbundled network elements and facilities;
(b) Access to rights of way, including poles, ducts and conduits;
(c) Access to technical interfaces, protocols or other key technologies and facilities required for the interoperability of services;
(d) Access to specified services needed to ensure interoperability of end-to-end services to users, including facilities for intelligent network services and roaming on mobile networks;
(e) Access to international gateways;
(f) Access to operational support systems and other software systems necessary to ensure fair competition in the provision of services;
(g) Interconnection of networks and network facilities;
(h) Leased lines and other types of transmission capacity;
(i) Telephone numbers, operator services, directory assistance and directory listing;
(j) Equal access;
(k) Number portability;
(l) Collocation and other forms of facility sharing required including duct, building or mast sharing; and
(m) Bundled retail services provided at wholesale prices for resale.

Wholesale Pricing Approaches

5.1 Wholesale pricing covers the compensation between operators and service providers for different wholesale products, services and associated facilities.

5.2 The pricing approaches used will vary depending on the types of wholesale arrangements and the wholesale products, services and associated facilities provided.

5.3 The pricing approaches may include, but not be limited to, cost oriented pricing, retail price minus discount factor (i.e. retail price minus avoided cost), revenue sharing, benchmarking and sender keeps all (i.e. bill and keep).

5.4 Wholesale pricing that foster fair competition and provide the maximum benefits to the consumers should be promoted. The following pricing principles should apply for essential wholesale facilities, products and services:

- Prices should be cost oriented.

- Prices should be based on the current replacement costs of assets (discounted to their remaining service life). In the absence of such costs, depreciated book value of assets should be used.

- Prices should be sufficiently unbundled so that an operator seeking interconnection need only pay for the components or services it actually requests.

- Prices should not include hidden cross-subsidies of an anti-competitive nature, e.g. charges for monopoly-supplied network components should not be inflated to a level well above costs in order to fund below-cost provision of competitive components[5].

- The structure of prices should reflect the underlying costs[6].

Criteria for Interventions

6.1 Regulatory interventions covering wholesale prices should only be imposed in markets for products and services that are not workably competitive.

6.1.1 The extent and nature of the intervention will vary between providers and services, depending on the extent of market power and potential for associated abuse.

6.1.2 In general, operators with significant market power and control over monopoly facilities and products required in markets for essential retail services will be required to demonstrate an objective basis for cost oriented wholesale prices.

6.2 Regulatory Authorities imposing obligations on the accessibility and pricing of wholesale facilities, products and services should take account of:
- The technical and economic viability of using and installing competing facilities with consideration to the market development;
- The feasibility of providing the access required in relation to the capacity available;
- The investments by the facility owner, bearing in mind the risks involved in making the investment;
- The need to safeguard fair competition in the long run; and,
- Where appropriate and relevant, intellectual property rights.

6.3 A determination of which operators should be required to demonstrate cost oriented wholesale prices should be based on the following process:

- Definition of the relevant market;

- Assessment of market power; and

- Determination on the requirements on one or more operators to demonstrate cost oriented prices.

6.4 Definition of the Relevant Market

6.4.1 The starting point for imposing obligations on cost oriented wholesale pricing should be a definition of a relevant market[7].

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[5] This principle is adopted in the *WTO Regulation Reference Paper*.
[6] Thus, fixed (non-traffic sensitive) costs should be covered by fixed (non-traffic sensitive) charges, variable (traffic sensitive) costs by variable (traffic sensitive) charges. Peak and off-peak charges may be set where there is a significant difference in costs.
[7] This is in analogy with the process used for assessing anti-competitive practices. Please see "Fair Competition Guidelines for the ICT Sector for SADC" for further details on this process.

6.5 Assessment of Market Power

6.5.1 An assessment should thereafter be made with respect to the market power of one or more firms in the defined relevant market.

6.6 Determination on Requirements

6.6.1 Based on the assessment of market power, a determination should be made with respect to the requirements on one or more operators to demonstrate cost oriented wholesale prices.

6.6.2 In connection to this, an assessment and determination of the essential wholesale facilities, products and services should be made.

6.7 Due to rapid technological and market changes, such analysis and assessment process should be undertaken on an annual basis.

6.8 Operators determined to have significant market power through the ownership or control over essential facilities, products and services should normally be required to demonstrate cost oriented wholesale prices for such facilities, products and services.

6.8.1 The essential wholesale facilities, products and services should be provided at least equal in quality and at no less favourable conditions than those given by the operator to itself or to any other subsidiary, affiliate, or any other party to which the facilities, products and services are provided.

Standards and Methods

Cost Standard

7.1.1 Long run average incremental costing[8] (LRAIC) based on forward looking costs should be the preferred standard for calculating cost oriented wholesale prices for key essential wholesale facilities, products and services in accordance with the criteria for intervention set out in section 6[9]. LRAIC is intended to mirror the prices that would prevail if the market were characterized by effective competition.

7.1.2 Implementation of the LRAIC may require a transition period in the Member States. The complexity, time and other resources required to implement the LRAIC standard in practice should be taken into full account, necessitating a phased approach to the

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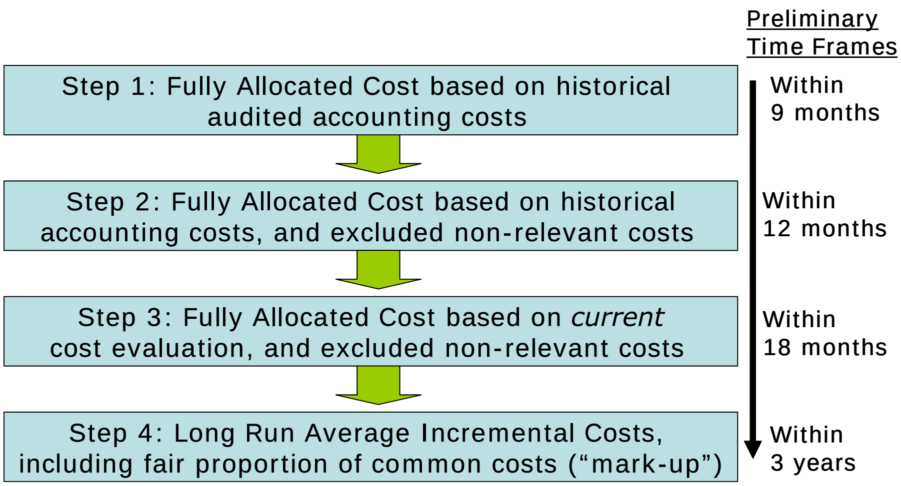
[8] Long run incremental cost (LRIC) is the incremental costs that arise in the long run with a specific increment in volume of production. LRAIC is a version of LRIC. The term “average” captures the intent to define the increment as the entire service. LRAIC includes service-specific fixed costs. See also glossary of terms.

[9] A typical key essential wholesale product in the current market transition to workable competition is switched interconnection. However, in practice it is not reasonable or realistic to require that all essential wholesale facilities, products and services have to be separately calculated based on the prescribed cost standard. Hence, the regulatory Authorities need to set realistic requirements on the level of detail of costing, and put focus on the most important and critical essential facilities, products and services, such as, currently, interconnection services.

implementation of LRAIC.

7.1.3 In the short to medium term, the fully distributed costing (FDC) standard based on historical costs should form the basis for calculating cost oriented wholesale prices. This should only be seen as a temporary solution while preparing for prices based on a current cost valuation which should be used as a proxy for forward looking costs.

7.1.4 The national regulators, in cooperation with the industry, should, based on the following suggested plan, establish a time and action plan for the process forward in each Member State while taking into account the specific situation and development in the Member State[10].



7.1.5 **Step 1** should stipulate the requirements to prepare and produce costs in a prescribed format; i.e. regulatory financial statements and accounts based on historical costs. The format should at a minimum separate operating costs and capital costs into network and retail business accounts, and require a transparent system of transfer prices in accordance with section 7.2[11].

7.1.6 **Step 2** should refine the calculations and outputs produced in Step 1, where non-relevant costs are excluded from the cost basis for calculating wholesale rates. Such non-relevant costs should normally include retail related costs for sales, marketing and billing.

7.1.7 **Step 3** should re-valuate all assets into current costs based on their replacement cost. The current cost evaluation should work as a proxy for forward looking costs. The result should be regulatory financial statements based on current cost valuations, and the exclusion of costs determined to be non-relevant to the provision of the wholesale products.

[10] Some countries in the SADC region may already have completed one or two steps in the process and are therefore likely to be in a position to potentially move forward quicker than what the preliminary time plan suggests. Other countries may require a longer period due to e.g. existing regulations or resource constraints. It is important that the time and action plan finally agreed upon between the national regulator and the affected operators recognize that the output of one step in the process is *not* a pre-requisite to initiate activities in the next step. For example, the work to revaluate the assets into current costs could and should be initiated before the finalization of regulatory financial statements based on historical accounting costs.

[11] Bottom-up modeling and/or benchmarking of comparable markets/countries may be used where the historical accounts of an operator provide an inadequate basis for cost oriented pricing.

7.1.8 **Step 4** should imply the preparation and production of statements based on a LRAIC model. The model should take into account the need for a mark-up of joint and common costs to the long run incremental cost of a specific wholesale product, i.e. LRAIC plus a mark-up. For simplicity the mark-up should be equal and proportionate.

7.1.9 The main approach for calculating LRAIC based prices should be a top-down model, i.e. the actual costs of an operator but adjusted for forward looking valuations and taking into account possible levels of in-efficiencies. The top-down approach may be combined with a bottom-up engineering model approach, which would calculate the incremental costs based on the equipment and activities required in an efficient network operation.

Accounting Separation and Transfer Prices

7.2.1 Operators with significant market power should be required to prepare a system of accounting separation with transparent and non-discriminatory transfer prices between, at a minimum, its network and retail business, and wholesale transfer prices towards other external operators.

7.2.2. For fixed incumbent operators the network business should be separated into an access business and a core network business[12].

7.2.2.1 The access business should cover of all subscriber lines/connections to the network. This will include those components of the network which are not traffic sensitive and are dedicated to a particular customer including the local loops and the line cards and ports located at concentrators and/or exchanges.

7.2.2.2 The core network business should the provision of interconnection services (i.e. internally to the retail business and externally to other operators, transit services and carrier's carrier services.

7.2.3 The cost allocation principles and attribution methods applied should be based on generally accepted costing principles, i.e. cost causality, objectivity, consistency and transparency, whereby revenues, operating costs, assets and liabilities should allocated to the different business segments.

7.2.3.1 The attribution methods proposed by the operator should have to be approved by the regulator before being applied.

7.2.4 The regulatory financial statements and accounts prepared in accordance with the regulator's requirements should be supported by an independent external audit.

[12] For mobile operators a separation of the network business into further "sub-businesses" is not applicable.

Procedures

Publication Requirements

8.1.1 Standard agreements and offers on wholesale pricing arrangements by operators should be made publicly available, at the regulatory Authorities' discretion[13].

8.1.1.1 Operators with significant market power should be required to publish standard prices for access to and use of its network, which should include showing that the offers on wholesale products and services are on the same terms and conditions as those offered to itself or to any other subsidiary, affiliate, or any other party to which the interconnection products are provided.

8.1.2 Authorities should keep procedures and processes transparent which should normally involve to publishing its decisions, including the reasons for the decisions.

8.1.3 Member States should ensure that specific obligations imposed on operators are published and that specific product and geographical markets are identified.

8.1.4 The Authority's analysis and determination of relevant markets should be consulted with the industry and be publicly available.

Dispute Resolution

8.2.1 On the declaration of a dispute by either party, the Authority should issue a decision within the prescribed time period in accordance with the relevant legislation, and within the shortest time period available. Such time period should be sufficient to allow fair consideration of disputed facts[14].

8.2.2 In resolving disputes, the Authority should primarily take into account:

- the user interests;
- the promotion of fair competition; and, where appropriate,
- the availability of technically and commercially viable alternatives to the services or facilities requested.

8.2.3 The Authority should ensure that procedures are fair, transparent and clearly

[13] Exceptions can be made with regard to sections that deal with the parties' specific expansion plans for coverage of networks and services, customer penetration, agreements with service providers and resellers and distribution channels. At the regulator's discretion such sections, and potentially other related areas, may be classified as commercially sensitive information, and therefore treated as confidential.

[14] Authorities may need to make quick determinations, which may not be based on detailed investigations, where such determination is critical to the viability of one or more providers in the sector. There should be a possibility to later amend such determination when a more detailed investigation has been finalized. There should also be a stipulated time limit and deadline for the finalization of such investigations. The time required will vary depending on the complexity of the issues involved but should be agreed upon between the Authority and the affected parties.

established well in advance.

Enforcement and Penalties

8.3.1 The Authority should have necessary powers and tools to effectively enforce its determinations and decisions.

8.3.2 When an Authority has proposed to make a decision there should be:
- a written statement explaining the matters to which the objection has been made;
- the actions and remedies that are proposed; and
- the reasons therefore.

8.3.3 The party or parties receiving the statement should normally have the opportunity to make representations.

8.3.4 Where the Authority makes a decision to the party involved, it will be required to comply with the decision. It may include a direction to modify or terminate an agreement in question.

8.3.5 If an operator fails to comply with the direction, the Authorities may impose necessary penalties.

8.3.6 The penalties for excessive and anti-competitive wholesale prices should be substantial and be determined based on actual or expected harm of the pricing behavior.

8.3.6.1 The penalties may be determined in relation to the turnover of the party that abuses its market power. Financial penalties up to a specified maximum percentage of an individual operator's annual turnover may be enforced. Such penalty may apply for a specified period, if the anti-competitive pricing conduct continues.

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ANNEX 1 - Glossary of Terms

"access" – the making available of facilities and/or services, to another firm, under defined conditions, on either an exclusive or non-exclusive basis, for the purpose of providing electronic communications services. It covers *inter alia*: access to network elements and associated facilities and services, which may involve the connection to equipment, by wire ore wireless means; access to physical infrastructure including buildings, ducts and masts; access to software systems including operational support systems; access to number translation or systems offering equivalent functionality; access to mobile networks, in particular for roaming. Interconnection is a specific type of access implemented between public network operators.

"accounting separation" - separation of the accounting systems for the purpose of identifying the external transfer prices of activities, services and network components such as a switching facility and convergence systems necessary for the provision of all services.

"allocated cost" - joint or common cost that has been divided among services in accordance with a set formula or by judgment. This is also known as a distributed cost.

"associated facilities" – facilities associated with an electronic communications network and/or an electronic communications service, to which access is necessary for the competitive provision of electronic communications services on equal terms.

"Authority" - the body or bodies empowered to regulate the activities of operators and any other ICT providers in the public interest.

"average cost" - a specified cost divided by the quantity or output. [By default, usually refers to the average of total cost, which is the total cost divided by the specified volume of output].

"capacity based charging" - the price charged by a network owner on the basis of the portion of the network to be used by another operator

"collocation" – facility sharing in which an operator, often the dominant firm, provides space in its switching exchanges or other premises for communications equipment, such as transmission cables, of competitive operators to facilitate interconnectivity to end-users.

"common cost" - a cost incurred when a production process yields two or more services. For example, the cost of the building to a house a telecommunications exchange may be described as a common cost of serving both business and residential customers. The salary of the operator's president may be considered a common cost of all services (this type of cost is often also referred to as an "overhead cost"). Common costs are not directly attributable to one specific service but have to be allocated to different services based on some allocation principle, e.g. in proportion to the direct costs of the different services.

"competition" – a situation in market in which firms or sellers independently strive for the patronage of buyers in order to achieve a particular business objective, e.g., profits sales and/or market share. Competition in this context is often equated with rivalry. Competitive rivalry between firms can occur when there are two firms or many firms. This rivalry may take place in terms of price, quality, service or combinations of these and other factors which customers may value. Competition is normally viewed as an important process by which firms are forced to become more efficient and offer greater choice of products and services at lower prices. It gives rise to increased consumer welfare from allocative and dynamic efficiencies. Dynamic efficiency results when firms engage in innovation and foster technological change and process.

“consumer” - a natural person who uses publicly available electronic communications services for the purposes which are outside his or her trade, business or profession.

“cross-subsidy” – covering the cost of offering some services through excess revenues earned from other services. Anti-competitive cross-subsidy normally refers to a practice by a dominant firm of offering services in competitive markets at low (i.e. below cost) prices, while maintaining overall firm profitability by charging above cost prices in monopoly markets or in markets where the firm enjoys market power.

“direct cost” - a cost that can be attributed solely to the production of a specific item. A direct cost does not require a cost allocation (or distribution) to separate it form the costs incurred in the production of other items. An indirect cost, however, does require such an allocation. An operator that produces a single product sold in a single market incurs only direct costs. When an operator is engaged in producing multiple products or serving multiple markets, however, it will normally also incur indirect costs such as joint and/or common costs.

“dominance” – a strong form of market power. While the definition of market dominance varies with the laws of different countries, a finding of dominance usually requires proof of a relatively high market share and the existence of significant barriers to entry into the markets in which the firm is dominant.

“electronic communications network” – transmission systems and, where applicable, switching or routing equipment and other resources which permit the conveyance of signals by wire, by radio, by optical or by other electromagnetic means including satellite networks, networks used for radio and television broadcasting, and cable TV networks, irrespective of information conveyed.

“electronic communications service” – services provided for remuneration which consist wholly or mainly in the transmission and routing of signals on electronic communication networks, including telecommunications services and transmission services in networks used for broadcasting, but excluding services providing, or exercising editorial control over, content transmitted using electronic communications networks and services.

“equal access” – the ability of consumers to access the services offered by new entrants as easily as those of existing operators.

“essential facility” – facilities associated with a network, and essential products and services that are exclusively or predominantly provided by a monopolist or a small number of suppliers, and that cannot feasibly be duplicated by competitors for economic or technical reasons. Examples of such facilities may include local loops, local switches, public rights-of-way, pools and conduits, spectrum and numbers.

“essential retail service” – core communications services available to users necessary to fulfil requirements for e.g. commerce, education, health, safety and entertainment, and enabled through the capabilities of electronic communications networks.

“ex-ante regulation” - prospective or forward-looking regulatory measures and tools that are imposed on individual firms or groups of firms in a market, in order to prevent certain behavior from taking place.

“ex-post regulation” - retrospective regulatory measures and remedies that are imposed on an individual firm or groups of firms that, normally, already have been assessed to behave in an anti-competitive manner.

“fair competition” – is not a term with a distinct definition but will have different meanings to different parties. It is here referred to as an environment in which competing providers have an opportunity to participate in the market place under conditions that are not unduly distorted by other competing providers possessing significant market power. The interpretation of the concept of fair competition is important for example in situations where one provider requires access to facilities owned or controlled by another provider, who is also a competitor. The conditions for access to the facilities should then be “fair” to both competitors, i.e. implying that the compensation should not unduly discriminate any of the parties.

“firm” – in this context, any operator or provider that offers and/or requests electronic networks, electronic services and/or associated facilities on a retail and/or on a wholesale basis in a relevant market, as defined by the Authorities.

“incumbent operator” – the established operator in a market which normally operates all or most of the public switched telecommunications infrastructure in the market.

“interconnection” - the physical and logical linking of public electronic communications networks used by the same or a different operator in order to allow users of one undertaking to communicate with users of the same or another operator or to access services provided by another operator. Services may be provided by the parties involved or other parties who have access to the network.

“interconnection charge” - the price charged by a network owner to another operator for the purpose of interconnecting to the network

“interconnecting operator” - the operator seeking to be connected to the operator or any other network.

“increment” - a specific non-minimal increase or decrease in volume of production.

“incremental cost” - the change in total cost resulting from an increment. Incremental cost equals total cost assuming the increment is produced, minus total cost assuming the increment is not produced. Because a wide variety of different increments can be specified, incremental cost can conceptually range all the way from total cost per unit (entire output as the increment) to marginal cost (one unit as the increment). The size of the increment used in any specific cost analysis will be a matter of judgment. The most common practice is to use the entire service or element as the increment, in which case the service or element specific fixed costs of the service or element would be included in the element.

“joint cost” - a specific kind of common cost incurred when a production process yields two or more outputs in fixed proportion. Joint costs vary in proportion to the total output of the joint production process, not to the output of the individual joint products.

“leased line” – a point-to-point communication channel or circuit that is committed by the network operator to the exclusive use of an individual subscriber.

“local loop” – the transmission path linking end users to the nearest exchange. It generally consists of a pair of copper wires, but increasingly employ fibre optic or wireless technology.

“long-run incremental cost (LRIC)” - the incremental costs that arise in the long run with a specific increment in volume of production. LRIC is generally calculated by estimating costs using current technology and best available performance standards. When a cost study is based on the “costs of an efficient firm”, it usually refers to LRIC-type methodology. In the presence of joint and common costs, the sum of the LRIC for all the operator’s services will be less than the total costs of the operator. Hence, the operator will not be able to recoup all of its costs. Regulators will generally allow a mark-up to be added to LRIC or LRIC-type costs for the firm to help recover all of its costs. Long run average incremental cost (LRAIC) is a version of LRIC. The term “average” captures the intent to define the increment as the entire service. LRAIC includes service-specific fixed costs.

“market” – a market is where buyers and sellers transact business for the exchange of particular goods and services and where the prices for these goods and services tend towards equality. In order for a market to “clear” or function properly, the quantity of goods and services demanded and supplied must be equal at some given price. At any particular point in time, markets can be in “equilibrium” or “disequilibrium” depending on whether or not aggregate supply equals aggregate demand at the prevailing price. Markets can be local, regional, national or international in scope and do not necessarily require buyers and sellers to meet or communicate directly with each other. Business may be transacted through the use of intermediaries as well.

“market power” – generally an operator is considered to have market power when it is able to establish and maintain prices or other key terms and conditions of sales in a market for a non-transitory period, without regard to the market or the actions of competitors, without losing sales to such degree as to make this behaviour unprofitable.

“mark-up” - a percentage or a fixed monetary amount that is used to take into account joint and common costs, for example, to supplement certain costing methodologies. Cost concepts that do not fully allocate (or distribute) all indirect costs generally require mark-ups. These cost concepts include incremental costing methodologies, including LRIC (and TSLRIC/LRAIC and TELRIC as discussed in detail in the cost methods section below). The mark-up may be uniform or non-uniform. While regulators have generally set uniform mark-ups to promote competition, the application of Ramsey principles suggests that a non-uniform mark-up may be economically efficient.

“non-discriminatory” - a condition by which an operator, engaged in the provision of electronic networks and services, do not apply less favorable technical and commercial conditions on any competitor than what it would apply it to itself, its subsidiaries or its affiliates in delivery of services.

“number portability” – the ability of a customer to transfer its service account from one operator to another without requiring a change in the customer's number.

"operator" – a person providing, operating or controlling a publicly available electronic communications network or an associated facility.

"public communications network" – an electronic communications network used wholly or mainly for the provision of publicly available communications services.

"quality of service" - a performance measure which should always be pre defined in an interconnection agreement and it should include measurement of unsuccessful calls which do not include failure caused by customer behavior

"reseller" – a public service provider that does not own network transmission facilities but obtains transmission facilities or services from others for resale to its customers. Normally this is offered to the reseller at a retail discount price where retail related costs are excluded.

"roaming" – a service allowing cellular subscribers to use their handsets on networks of other operators.

"significant market power" - a firm is considered to have significant market power if, either individually or jointly with others, it enjoys a position of economic strength affording it the power to behave, to an appreciable extent, independently of its competitors and ultimately consumers. Significant market power should be based on the concept of dominance. This implies that a firm that is determined to have significant market power normally is treated as a dominant firm in accordance with general competition laws.

"subscriber" – any natural person or legal entity who or which is party to a contract with the provider of publicly available electronic communications services for the supply of such services.

"telecommunications service" - any domestic or international transmission of information by wire, radio waves, optical media or other electromagnetic systems, between or among points of the user's choice

"transfer charge" – the price paid by a separate business segment within the operator for the usage of network elements or other facilities and services of another business segment of the operator. A fair transfer charge system aims to ensure that the transfer charges that the operator pays to itself is the same as other external operators have to pay for the same facility or service.

"unbundling" – the provision of components on a stand-alone basis. Interconnecting operators can then obtain access to single unbundled components without an obligation to buy other components as part of the interconnection "package".

"user" – a legal entity or natural person using or requesting publicly available electronic communications services.

"wholesale pricing" – refers to the compensation for a wholesale facility or service provided in an upstream (wholesale) market between two or more providers. For example, an incumbent fixed operator who provides termination of traffic from mobile operators is being compensated via a wholesale price for the service provided.