# 1 The Definition of Markets

## 1.1 Background: approach to market analysis

The structure conduct performance (SCP) model is a useful framework that UCC can use:

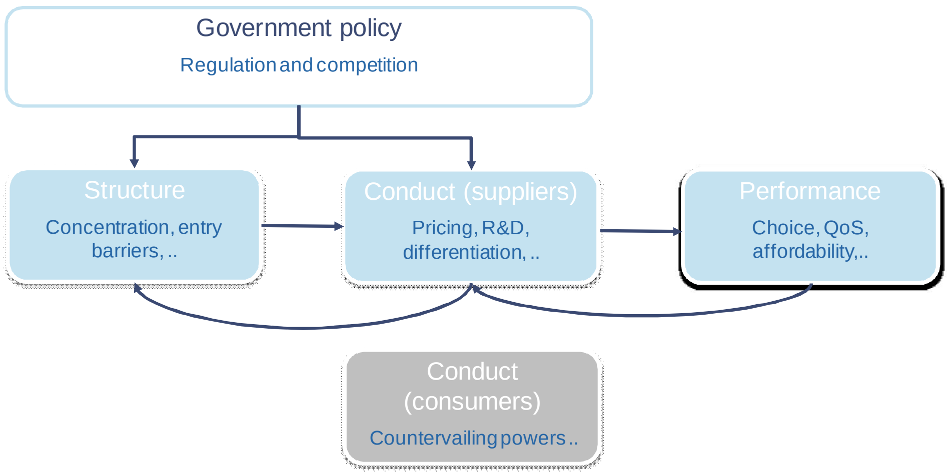
- Firstly, to develop a criteria framework for competition analysis;
- Secondly, to select appropriate criteria for assessing the state of competition in individual relevant markets;
- Thirdly, to identify the appropriate level of regulatory intervention.

In its basic form the SCP model is based on three key concepts: market structure; conduct and performance. The underlying linkage between these elements is the presumption that the structure (number of sellers, ease of entry) of a market would explain or even determine to a large degree the conduct of the participants in the market (pricing policies, advertising). Finally, the conduct of industry players would determine the performance of the industry (efficiency, technical progress).

The traditional SCP paradigm has been criticized mainly around simplification and lack of consideration of ‘feedback loops’ between these three elements. In addition, markets cannot be analysed in isolation from their environments. Governments, for example, intervene in the market through two types of interventions. The first type of intervention attempts to modify the conduct (or behaviour) of a particular firm or group of firms (e.g. price regulation, orders prohibiting collusive practices or orders requiring interconnection of competitors’ networks). The second type of intervention affect the market structure of the industry (e.g. merger control or order requiring accounting and legal separation to address concerns with regard to market dominance).

It is generally accepted that a variety of different market structures may still be economically efficient and that the ‘contestability’ of a market, i.e. its openness to potential entry or substitution of the product, should be taken into account in assessing the structure of a given market. In line with this view, in addition to direct rivalry amongst competitors, other forces shaping competition need to be taken into account such as the threat of new entrants, the threat of substitute products, and the bargaining power of buyers and suppliers, respectively.

**Figure 1: Structure Conduct Performance (SCP) model**




*Source: Adapted from the Structure-Conduct-Performance Model of Industrial Organisation*

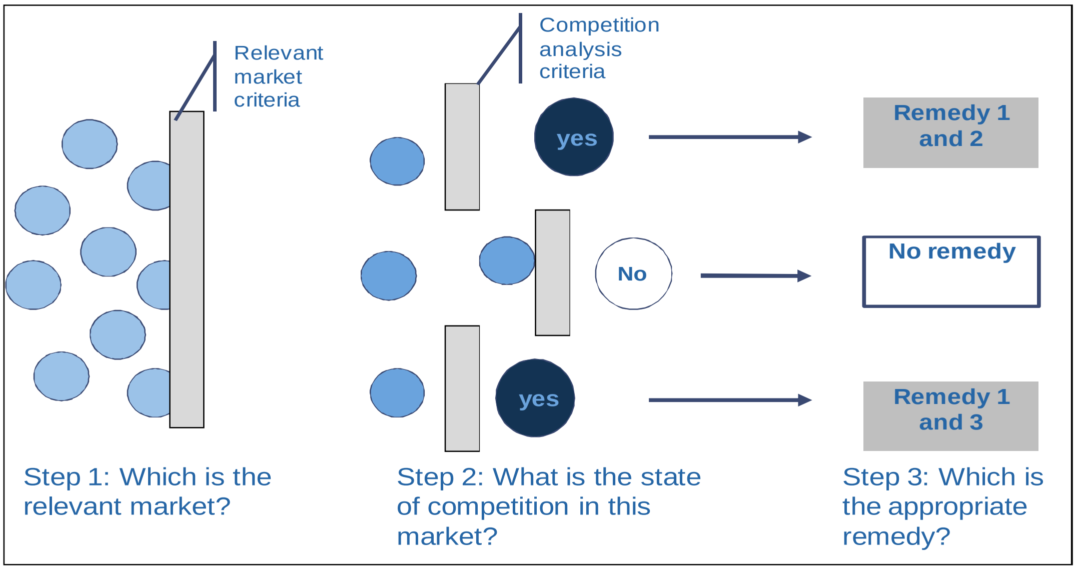
For a discussion of the application of the SCP Model see sections 7.6 to 7.9.

A typical market review would consist of the following steps:

- Step 1: Identification and description of relevant markets;
- Step 2: Assessment of the state of competition in each of these markets based on a set of appropriate indicators in each of these markets;
- Step 3: Decision on appropriate remedy for the competition problem(s) identified under step 2.

This chapter deals with the first of the above steps, and the next two chapters provide our initial analysis of the other two steps, respectively.

**Figure 2: Steps in market analysis**




*Source: PricewaterhouseCoopers*

### 1.1.1 Approach to Market definition

The telecoms sector comprises several distinct markets. The state of competition tends to vary significantly from market to market. As a result, a clear definition of the relevant markets is needed in order to assess markets in terms of market power and the level of competition (see section 2).

Appendix 1 provides a list of relevant markets identified for ex ante regulation in the EU and in a variety of jurisdictions including Kenya, Malaysia, Lebanon and Saudi Arabia. These examples show that relevant markets are most commonly classified along the following dimensions:

- Retail and wholesale markets;
- Residential and non-residential customers;
- Fixed, mobile, data services;
- Call termination, origination, transit;

In the remainder of this section we outline criteria that are commonly used to define relevant markets considering the above areas. Section 1.2 will provide an outline of markets that UCC could consider for an in-depth market analysis.

**Substitutability**

The extent to which the supply of a product or the provision of a service in a given geographical area constitutes the relevant market depends on the existing of competitive constraints on the behaviour of firms, namely demand side substitutability and supply side substitutability.

Demand side substitutability is used to measure the extent to which consumers are prepared to substitute other services or products for the service or product in question. In order to identify apply this approach, the viewpoint of the consumer (rather than that of industries) and the aspect of end use is central. This is particularly important in view of increasing convergence and inter-industry substitution since increasingly, different kind of products or services may be used for the same end. For example, different services such as cable and satellite connections may be used for the same end use, namely to access the internet. Similarly, it has been argued that for some consumers, mobile telephone services and/or high speed broadband services may be close and effective substitutes for traditional fixed telephone services.

As a result, the regulator needs to have a good understanding of consumers' demand patterns, perception and use of services as well as their countervailing buyer power, covering following aspects:

- What kinds of services are available to consumers?
- What factors are important to them to select services (price, product quality, etc)?
- How customers use the services and in what circumstances?
- What factors are important in switching, particularly from incumbent operators and opting for new services or subscription to new operators?

Supply side substitutability indicates whether suppliers other than those offering the product or services in question would readily switch in the immediate to short term their line of production and offer the relevant products or services without incurring significant additional costs. Supply side substitutability depends, for example, on whether services and products in questions depend on specialised equipment of infrastructure and how the service reaches consumers.

In some jurisdictions such as the EC, 'potential competition' is defined as a separate constraint. The difference between supply side substitutability and potential competition lies in the fact that supply side substitution responds promptly to a price increase, whereas potential entrants may need more time before starting to supply the market.

**Testing for substitutability**

The hypothetical monopolist test is one of the most common means of assessing the degree of demand and supply side substitution, and hence the scope of any market. The regulator would take a set of services (a 'candidate market') and ask what would happen if there was a small but significant, non-transitory increase in the price (SSNIP) above the competitive level of a given product or service, assuming that the prices of all other products or services remain constant (so-called 'relative price increase'). Competition or regulatory authorities normally use the prevailing prices of the products as a benchmark ('reference price')[1] and regard price increases of 5 – 10% as small but significant and a period of more than 12 month as non-transitory.

If a sufficient number of buyers would drop out of the market or switch to other products and producers switch from the production of other services to a substitute, the price increase would become unprofitable for the hypothetical monopolist. As a result, those substitutes would be included in the new definition of the market. The experiment can then proceed up to a point where no more substitutes are found for the product in question. If the price increase is sustainable, the conclusion must follow that that product/service market represents a market in its own right. There are a number of drawbacks in the use of this test including, most importantly, the availability of data to perform such a test with the required accuracy. The SSNIP test is generally applied in a qualitatively reasoned manner[2].)

**Additional factors in market definition**

The EC framework for electronic communication services proposes criteria in addition to demand and supply-side substitutability. The reason is that strictly applying the demand and supply substitution test alone would result in extremely narrow markets in some contexts. This reflects the fact that, for example, there may be no substitute to call a particular subscriber, meaning that the market could in theory be defined as that for calling that subscriber. Common pricing constraints (e.g. national pricing), cluster markets, and chains of substitution are techniques that can be applied to sensibly aggregate otherwise narrow markets.

**Arriving at a list of relevant markets**

The approach outlined above relates to how to define economic markets. The EC framework for electronic communication services proposes criteria for distilling which telecoms markets are relevant for market analysis since simply applying the demand and supply substitution test alone would result in a large number of communications markets making ex ante regulation unmanageable and unfocussed. As a result, criteria are applied with the aim to identify a set of relevant markets that can be assessed in terms of competitiveness and the need of *ex ante* regulation. These criteria aim at identifying conditions that jeopardize the emerging of effective competition in these markets. The three criteria applied by the EC include:

- Firstly, whether the market has high and non-transitory entry barriers. These include both structural and legal/regulatory barriers;
- Secondly, whether the market has characteristics such that it will tend over time towards effective competition;
- Thirdly, whether competition would be sufficient in order to limit ex ante regulation to cases where strictly necessary.

[1] Although one needs to be careful in the context of regulation, since prevailing prices may exceed the competitive price level, which would provide a misleading basis from which to perform a SSNIP analysis.

[2] The same test can be carried out in respect of supply-side substitutability and geographic market definition

The first criterion is a necessary but not sufficient one: both the second and third criterion would need to be considered to identify a relevant market that is susceptible to ex ante regulation.

**Retail and wholesale markets**

Retail markets are where telecoms services are provided by operators to end users such as consumers and enterprises. Wholesale markets comprise services provided by operators to other operators, as inputs for the latter to provide retail telecoms services to end users. The communications sector is characterised by relatively high sunk and fixed costs and the existence of bottlenecks. These factors lead to a high degree of dependence of operators on fair, non-discriminatory access to upstream (wholesale) services and facilities in order to be able to compete in the downstream (retail) markets.

As a result, an understanding of the interplay between wholesale and retail markets forms the basis of any market analysis. Markets are first defined at the retail level, recognising that wholesale markets represent a derived demand from retail markets. Where potential competition issues are identified in a retail market it is essential to understand whether this problem may originate in the retail market itself or in a related wholesale market. Where the latter is the case, wholesale markets are then defined, since ex ante regulation should first address the market failure in the wholesale market concerned. Regulation at the wholesale rather than retail level is most capable of generating sustainable and meaningful competition in markets. Incidentally, most of markets identified in the EC's 2007 reform proposal are wholesale markets.

**Geographical markets**

Once the service and product markets at the retail and wholesale level have been defined, the next logical step is the definition of the geographical dimension of the market. The relevant geographical market may be defined in a similar way to the SSNIP test for product markets. In addition, in order to avoid unmanageably narrow markets, aggregation of markets can be performed where an area:

- Has conditions of competition are similar or sufficiently homogeneous; and
- Which can be distinguished from neighbouring areas in which the prevailing conditions of competition are appreciably different.

On the demand side, the number and concentration of buyers may differ from region to region. On the supply side, competitive conditions may be even less homogeneous. For example, population in heavily populated areas may have more choice of fixed networks than population living in rural areas. However, part of the geographical heterogeneity observed between different regions tends to be temporary (as networks are rolled out) or simply reflect the fact that certain markets do not exist in certain parts of the country (e.g. lack of broadband availability or coverage). In the communications sector markets tend to be defined on a national basis.

**Customer segments**

In some cases distinctions are made between services provided to residential and business customers, respectively. The extent to which business and residential services and/or packages differ between customer segments varies from country to country, as does the extent to which substitution is possible between services offered to business and residential users, respectively.

## 1.2 Delineation of markets in Uganda

In Uganda, both UCC regulations and the Competition Bill make reference to a product as well as geographic market (Regulation 13 (3) and Section 44 (6) CBill). This circumstance provides UCC with an explicit basis to consider whether distinctions between urban and rural markets might be appropriate in some cases. Given the rapid network rollout and extensive investment in telecoms infrastructure currently observed in Uganda we recommend that UCC should consider geographical markets at this stage. This is also in line with market definitions in most other jurisdictions.

In order for the UCC to be in a position to design and implement a workable and pragmatic framework for the assessment of competition it is important to avoid a division of the communications market in an excessively large number of separate markets.

We have developed a possible definition of markets which we provide here by way of summary.

Proposed retail markets:

1. Voice services (fixed and mobile, access and calls)
2. Internet services (retail, broadband and dial-up)
3. Leased line services (retail)

Proposed wholesale markets:

4. Fixed termination
5. Mobile termination
6. Fixed call origination
7. Mobile call origination
8. Transit
9. International access
10. Transmission links (wholesale leased lines and transmission links (trunk and partial private circuits (PPC))

A discussion of the extent of each market and the rationale for the proposed definition is provided in the following sections. One general comment may be in order here as it applies to all of the markets discussed below:

- All markets are defined on a national basis (whereas it is true that some services have not been rolled out to the same extent in different parts of Uganda we believe that this is a transitional phenomenon and does not merit differential regulation based on geographical heterogeneities at this stage). The limited availability of some services in some parts of the country does not, in our view, constitute evidence of regional market power but rather the absence of a market in some regions.

- Where identical services are provided to business and residential users we treat these services as being part of the same market.

### 1.2.1 Voice services

We first consider fixed[3] and mobile voice services separately and then provide our reasons for treating both as part of the same market.

**Fixed voice[4] services**

Within this market we distinguish the following products and technologies at the retail level:

1. Direct exchange line connections: narrowband access for voice and low bandwidth internet access provided over wireline (typically copper), mainly used by residential users, SOHOs, rural residential turned internet cafes and small businesses;
2. Fixed wireless exchange lines: using wireless local loop technology (e.g. CDMA, WiMAX, etc.) and often provided where copper based narrowband connections are not available, e.g as applied by UTL's telesaver, MTN GSM based Fixed cellular Terminals (FCT)
3. Integrated Services Digital Network (ISDN) lines: used by residential and business subscribers (PABX) and provided by both MTN and UTL
4. Local, national and international voice call services

Going forward, WiMAX may be used increasingly in the provision of fixed voice services (and potentially later in the provision of mobile services). From a consumer's point of view, it is likely to bear significant similarity with CDMA, and hence this service could be included in the same market on a forward-looking perspective.

Similarly, it could be argued that Voice over Internet Protocol (VOIP) may become substitutes for more traditional fixed line services. VoIP, enabling the carriage of voice call over private IP networks with services, has been offered by Infocom since 2007 as the first VoIP service provider in Africa and has taken up rapidly due to lower costs, simplified applications and integration with other data services. Availability of VoIP is not yet widespread and quality differences between VoIP and traditionally provided voice services are likely to persist in the near future. However, it is likely that price increases in traditional voice services would lead to a significant amount of displacement of calls to VoIP. We would therefore treat VoIP as part of the same market.

Related wholesale markets for fixed telephony services include:

- Call origination, call termination, and transit services (see discussion on interconnection services in 1.2.4);
- Wholesale line rental services.

**Mobile voice[5] services**

Mobile voice services are taken to include the following:

- Voice calls (local, national and international);

[3] The distinction between fixed and mobile services is not based on technology but based on the subscriber's mobility: where the location of the subscriber is known ('fixed') we regard the service as a fixed service, irrespective of whether it is provided over a copper line or through wireless access technologies.
[4] Or 'narrowband'.
[5] Or 'narrowband'.

- Sending and receiving SMS messages;
- Sending and receiving multi-media messaging (MMS) service;
- Value added services (e.g. video calls);

Important considerations for the definition of the mobile telephony service market include whether mobile enhanced data services over GPRS, EDGE and 3G should be included in this market or whether this market would only consist of mobile voice services. We will explain below why we propose to include these services in the market for internet services.

Related wholesale markets for mobile voice services which may constitute essential facilities or services and for which competition may be limited include:

- Call origination
- Call termination services (see discussion on Interconnection services in 1.2.4).

**Substitution between fixed and mobile voice services**

Given the relatively small proportion of fixed lines in Uganda and the wide availability of mobile phones we believe that the vast majority of fixed line subscribers have the option of using a mobile phone instead of using their fixed line (the reverse may not be true). The quality level of fixed and mobile services are also comparable because (i) quality of service for mobile services are relatively high and (ii) many 'fixed' services are provided with the help of wireless technology.

Ugandan users appear to be very price conscious and price sensitive (as is evidenced by the widespread phenomenon of multiple phone or SIM card possession). For these reasons we believe that mobile voice services have become a close substitute for fixed voice services and that both should be treated as part of the same market. In the framework of the hypothetical monopolist test, a SSNIP in the price of, say, calls from fixed lines would induce a proportion of consumers to switch to mobiles sufficient to render the price increase unprofitable, and hence it should be included in the same market.

### 1.2.2 Internet services

Broadband services involve the provision of sufficient bandwidth to facilitate the transfer of data at high speeds. Broadband services in Uganda are provided via the following technologies:

- Digital Subscriber Lines (ADSL) mainly used by UTL offering speeds between 64 kpbs and 256 kbps;

- Private VSAT satellite wide area network as provided by AfSat; (Africa online and UTL also offer VSAT services)

- WiMAX as rolled out by MTN in 2007, also provided by Infocom, Datanet;

- Mobile services via 3G (offered by UTL), GPRS, and EDGE offered by other mobile operators.

An important question for market definition is whether the services provided via wireless broadband technologies form part of an additional market for 'wireless broadband services' or whether these services should be included in the fixed broadband market. We consider that for the purpose of this study, the wireless broadband market should be included for the following reasons:

- It would be against the principle of technology neutrality if UCC chooses to have two markets based on the respective technology;

- While wireline and wireless broadband services are likely to offer different levels of quality and speed (in other words, these products are vertically differentiated). It is questionable whether these differences are sufficient to justify separate broadband service markets.. At this stage we propose to treat these as one market but we would welcome the UCC's view on this matter.

On the wholesale level, related markets which constitute essential facilities or services and for which competition may be limited include:

- Provision of transmission links (trunk and PPC, see 1.2.6);

- Bitstream services ensuring connectivity for communications services in data and digital form, whereby wireline incumbent installs a high speed (DSL) link to customer premises and makes link available to access seekers.

### 1.2.3 Leased lines

The leased line services may be defined as the dedicated (typically symmetric) point-to-point communication links for the exclusive use of the acquirer for voice and data purposes. Typically, leased lines may be differentiated based on the following characteristics including:

- Whether the leased line is analogue (voice only) or digital (voice and data);
- According to the bandwidth provided (e.g. 64 kbps, 2Mbps, 155 Mbps) and
- The purpose for which they are used: short distance lines to ensure connectivity between a point of interconnection and an end-user's premises or long distance lines to ensure connectivity between transmission points.

There are a number of questions that arise in the context of the delineation of the leased line market including the following:

- Whether different markets would need to be defined based on the above characteristics (e.g. a network transmission services compared to private circuit services market);
- Whether IP based services such as IP-VPN and Metro-Ethernet (as applied by Infocom) would constitute reasonable substitutes for leased lines and should therefore be included in the definition of the leased line market;
- Whether services should be rationalised in a generic relevant market of transmission or end user access services;
- For transmission services, whether markets should be defined on a route-by-route basis to take into account that some routes are more or less competitive than others and whether international transmission services should be taken into account.

Clearly, a definition of separate markets based on capacity levels, distances, or even on a point to point basis would result in a disproportionately large number of markets. However, a combined market for different types of leased lines not only brings the advantage of simplicity and workability but reflects the fact that similar competition issues can be expected to arise for various types of leased lines and that, therefore, the same remedies are likely to be applicable (if any).

We therefore believe that leased line services should be rationalised in a generic leased line market comprising different capacity levels, distances, and locations, including VPN services.

Related wholesale services for which retail leased lines are an input for which competition may be limited include:

1. Terminating segments of Partial Private Circuits (PPC), i.e. the tail segment or portion between the access provider point of presence and the end user customer's premises
2. Trunk segments, i.e. the portion between the access provider's point of presence and the point of interconnection with the access seeker's network.
3. Network transmission services – providing the link between the access seeker's points of presence. In the future, it may (or may not) include access to any of the submarine cables in Kenya or other neighbouring countries.

In respect of PPCs, an operator (e.g. recent entrant) can purchase a complete end-to-end leased line from another operator (e.g. incumbent) where it does not have its own network available for providing a retail leased line to a customer who wishes to have symmetric dedicated connectivity between two of its sites. Alternatively, if it is able to provide the leased line partly using its own network, it has the option of purchasing the remaining parts or segments of leased lines from another operator (usually the incumbent). PPCs are therefore supplied by one operator (e.g. the incumbent) to another operator and provide dedicated symmetric transmission at a range of bandwidths between the purchasing operator's end customer's site and the purchasing operator's network via a point-of-interconnect between the PPC supplier and the purchasing operator. The latter then completes the rest of the leased line all the way to the end user customer's site at the other end using its own network.

Trunk segments provide connectivity between major aggregation, or trunk, nodes. Therefore, a whole PPC includes product 1) terminating segment and product 2) trunk segments.

In addition to providing retail leased lines, another important use of wholesale PPCs is RBS Backhaul circuits. These are provided by fixed operators to mobile operators for the purposes of backhaul from the mobile operator's base stations to its mobile switch sites. A good example of the provision of network transmission services are where they are purchased by mobile operators for point-to-point links connecting up the mobile operator's switching sites.

[TREATMENT OF INTERNATIONAL LEASED LINES TO BE DISCUSSED]

### 1.2.4 Interconnection services (markets 4-8)

Interconnection services refer to the arrangements under which service providers connect their services, networks and equipment to each other. Interconnection encompasses the following services:

- Fixed termination (market 4) – an interconnection service for the carriage of call from the point of interconnection to the equipment of another party (B) at a known location, including transmission and switching;

- Mobile termination (market 5) – an interconnection service for the carriage of call from the point of interconnection to the equipment of another party (B) at the location of party B at the time of the call, including transmission and switching;

- Fixed call origination (market 6) – an interconnection service for the carriage of call from customer equipment at an end user's premises of one party (A) to the point of interconnection with the terminating party's (B) operator.

- Mobile call origination (market 7) – an interconnection service for the carriage of call from customer equipment at an end user's premises of one party (A) to the point of interconnection with the terminating party's (B) operator.

- Transit services (market 8) – the conveyance of third parties' traffic between the transit provider's interconnection point with the sending operator and its interconnection point with the receiving operator;

Given the monopolistic nature of markets 4 – 7 above, each of these markets has to be regarded as a separate market (termination on a fixed number is no substitute for termination on a mobile number and call origination is no substitute for call termination).

In calling party pays (CPP) countries, termination is almost always a regulated service. This reflects its economic bottleneck nature, whereby callers have no choice with respect to termination of their desired call, and recipients have limited incentive to switch to other operators in response to a rise in inbound prices. In the absence of regulation, operators would therefore have the incentive and ability to increase wholesale termination prices to excessive levels, thus causing inefficient market distortions.

As a matter of fact, strictly speaking each of the markets 4 – 7 should be regarded on a 'per operator' basis. Take the example of market 5 ('mobile call termination'): a call termination on MTN's network is no substitute for a call termination on Warid's network. Only Warid can provide the latter. In other words, the calling party's operator has no choice over who to buy the termination service from; there is no substitute for the service it requires in order to deliver the retail service in question (in this case, its subscriber's call to one of Warid's subscribers).

Currently, the transit market is largely a prospective market: all operators interconnect in Kampala only and, therefore, there is no point in providing transfer services for third party operators for efficiency reasons. However, we believe that the creation of a transit service market would be advantageous for two reasons:

(i) it would facilitate interconnection between entrants and established operators ('clearing house' function of transit operator)

(ii) once operators interconnect in locations outside Kampala (which we believe will soon be the case) the existence of transit services would open the door for regional players to enter parts of Uganda outside Kampala without needing their own transmission links between their region and Kampala.

### 1.2.5 International access ('market 9')

The provision of international services in Uganda has been liberalised so that all operators may operate their own international gateway and, in this sense, are not dependent on access to another operator's international gateway. However, some operators do not yet own or operate their own gateway and, in addition, it would be desirable for non-infrastructure based operators (such as calling card operators) to obtain access to international call conveyance as this would increase the level of competition in this part of the retail market for voice services (market 1).

### 1.2.6 Transmission links (market 10')

This market includes the following services:

1. Partial Private Circuits (PPC), i.e. the tail segment or portion between the access provider point of presence and the end users customer's premises

2. Trunk segments, i.e. the portion between the access provider's point of presence and the point of interconnection with the access seeker's network.
3. Network transmission services – providing the link between the access seeker's points of presence. In the future, it may (or may not) include access to any of the submarine cables in Kenya or other neighbouring countries.

These services are required as inputs to the provision of leased lines as well as a means of extending the buying operator's network in areas where it does not have (or not sufficient of) its own network infrastructure.

What happens after market definition?

# 2 Assessing Effective Competition

## 2.1 Background

Regulators assess (significant) market power or dominance in a relevant market analysis with the ultimate objective to identify whether there is effective competition in a relevant market or not. In the early days of competition law, the assessment of market power and thus effective competition was linked closely to a (quantifiable) assessment of market shares of the particular firm under investigation.

However, it is generally recognised that market shares are not conclusive on their own. As a result, most jurisdictions in developed countries established a list of indicators to assist regulators to understand the economic characteristics and to identify competitive constraints in a market. As it is stated in the European Regulatory Group *(ERG)* working paper that identifies criteria for the assessment of market power and effective competition:

> *'[…] It has to be mentioned that a dominant position cannot derive from a single criterion but from any combination of criteria.'*[6]

It has been pointed out by regulatory and competition authorities and by the EC that the choice of criteria for the assessment of competitiveness depends on the specific markets under review as well as the country specific context. As a result, regulators need to have sufficient discretion in the selection of criteria, their relative importance and the interpretation of results as to whether they would designate an operator as dominant or not.

Below is a brief overview of criteria most commonly used in jurisdictions around the world for both single and joint dominance.[7] We structured the criteria around the Structure Conduct Performance model introduced in Section 1.1. This framework will provide guidance for the market analysis carried out during the second phase of this project.

## 2.2 Overview of criteria

[6] ERG: Revised working paper on the SMP concept for the new regulatory framework, October 2004, ERG (03) 09rev1.

[7] The criteria are based on a review of the most recent EC framework for SMP analysis and on information from Kenya, Saudi Arabia, Lebanon

Table 2-1 below provides an overview of criteria that UCC could use to assess the state of competition. In practice, UCC will select up to three or four criteria that are most appropriate for assessing competition in a specific market. The criteria that we expect to be most important for the competition analysis in Uganda, are highlighted in the table below. They include:

- Horizontal and vertical market concentration (C1 and C2);
- Entry barriers (C3 and C4);
- Pricing and non-pricing conduct (C5 and C6);
- Countervailing power (C8);
- Innovation (C10).

**Table 2-1: Overview of criteria to assess effective competition**

| Category | Criteria | Indicators/Proxy |
|---|---|---|
| Market structure | **Horizontal market concentration (C1)** | • Market shares, concentration ratios and HHI |
| | **Vertical market concentration (C2)** | • Facilities and services that are controlled by multi-product vertically integrated operators |
| | **Structural barriers to entry (C3)** | • Sunk costs<br>• Economies of scale and scope<br>• Technological advantages or standards<br>• Access to financial resources<br>• Distribution and sales network |
| | Legal and regulatory barriers to entry (C4) | • Licences, patents, exclusivity provisions, availability of spectrum |
| Conduct suppliers | **Pricing strategies (C5)** | • Pricing trends; the extent of reaction to a price change, existence of leadership<br>• Excessive pricing; cross subsidisation; predatory pricing<br>• Collusion between providers |
| | **Non-pricing behaviour (C6)** | • Refusal to supply or delay in access to wholesale<br>• Advertising and branding<br>• Switching costs<br>• Collusion between providers<br>• Product service diversification/bundling |
| Conduct consumers | Market transparency (C7) | • Availability of product/service information<br>• Possibility to compare information |
| | **Countervailing power[8] (C8)** | • Number of consumer groups, percentage of large consumers; importance of buyer to supplier |
| | Preferences and life-style (C9) | • User pattern and preferences |
| Performance | **Innovation (C10)** | • Product choice and differentiation<br>• Technologies |
| | Economic efficiency (C11) | • Trends in cost-profit margins |

[8] Typically, this is only really used in a wholesale context, since it is a bargaining interface context, not a one-to-many context. In the latter, consumer response is better considered in the context of demand-side substitution/market definition

| | | |
|---|---|---|
| | Affordability and consumer satisfaction (C12) | • Quality of service parameters (call completion, congestion, disruption rate; time for installation and repairs, number and quality of reported complaints)<br>• Tariff structure design, percentage of household expenditure<br>• Universal coverage |

*Source: PwC*

A more detailed description of these criteria is provided in Appendix 3.

The above list provides a set of potential criteria for the assessment of each market. Given that our proposed market definition has not yet been agreed and finalised with the UCC we limit ourselves to presenting a possible option in this respect. The table below can be taken as an indication of the type of criteria that we would expect to be most suited to the assessment of competition in each market.

However, it should be emphasised that a proper market analysis is not a simple check-list procedure. Rather, it is a specific assessment of the strength of market power held by firms in a market, often requiring some judgment. The criteria below should be seen as usefully informing this assessment rather than being determinative in and of themselves.

## 2.3 Potential criteria to be used in each market

As mentioned above, the UCC will need to select appropriate criteria for the assessment of each market. Given that our proposed market definition has not yet been agreed and finalised with the UCC we limit ourselves to presenting a possible option in this respect. The table below can be taken as an indication of the type of criteria that we would expect to be most suited to the assessment of competition in each market.

**Table 2-2: Markets and potential criteria for competition analysis in Uganda**

| No | Market | Potential Criteria |
|---|---|---|
| **RETAIL** | | |
| **1** | Voice services (fixed and mobile) | • Market shares, concentration ratios and HHI (C1)<br>• Vertical integration (C2)<br>• Structural barriers to entry (C4),<br>• Pricing behaviour (C5)<br>• Switching costs (C6)<br>• Market transparency (C7) |
| **2** | Internet services (retail, broadband and | • Market shares, concentration ratios and HHI |

| | | |
|---|---|---|
| | dial-up) | (C1)<br>• Structural barriers to entry (C4)<br>• Vertical integration (C2)<br>• Pricing behaviour (C5)<br>• switching costs (C6) |
| **3** | Leased line services (retail) | • Market shares, concentration ratios and HHI (C1)<br>• Vertical integration (C2)<br>• Structural barriers to entry (C4)<br>• Pricing behaviour (C5) |
| | **W H O L E S A L E** | |
| **4** | Fixed termination | • Market shares (100%) (C1)<br>• Absolute barriers to entry (C4)<br>• Absence of countervailing buyer power (C8) |
| **5** | Mobile termination | • Market shares (100%) (C1)<br>• Absolute barriers to entry (C4)<br>• Absence of countervailing buyer power (C8) |
| **6** | Fixed call origination | • Horizontal market concentration (C1)<br>• Barriers to entry (C4)<br>• Refusal to supply (C6) |
| **7** | Mobile call origination | • Horizontal market concentration (C1)<br>• Barriers to entry (C4)<br>• Collusion (C5)<br>• Refusal to supply (C6) |
| **8** | Transit | • Market shares, concentration ratios and HHI (C1)<br>• Vertical integration (C2)<br>• Economies of scale (C3)<br>• Pricing behaviour (C5)<br>• Refusal to supply or delay in access to wholesale (C6) |
| **9** | International access | • Market shares, concentration ratios and HHI (C1)<br>• BTE (Sunk costs)<br>• Vertical integration (C2)<br>• Pricing behaviour (C5)<br>• Refusal to supply or delay in access to wholesale (C6) |
| **10** | Transmission links (wholesale leased lines and transmission links (trunk and | • Market shares, concentration ratios and HHI (C1)<br>• Structural barriers to entry (sunk costs, |

| | | |
|---|---|---|
| | partial private circuits (PPC)) | economies of scale) (C4)<br>• Vertical integration (C2)<br>• Pricing behaviour (C5)<br>• Refusal to supply or delay in access to wholesale (C6) |

*Source: PwC*

We expect to discuss the application of these and other potential remedies with the UCC and then to refine and revise the above table as may be required on this basis.

# 3 Regulatory Remedies

## 3.1 Principles

Remedies and obligations imposed on regulators to be found dominant in any market, must be based on the underlying competition problem identified and be proportionate and justified in light of the overall regulatory objectives of UCC. In more detail, UCC needs to observe the following principles:

- Reasoned decisions: UCC needs to produce a reasoned decision for the remedy it imposes and in particular the remedy needs to be linked and in proportion to the nature of the problem identified. This is to ensure that the least burdensome but effective remedy can be selected.

- Focus on wholesale markets: Regulation at the retail level should only be implemented when it is likely that regulation at the wholesale level will not be sufficient for achieving the objective of regulation. Where (infrastructure) competition is not possible (e.g. because of economies of scale, scope or other entry restrictions) remedies imposed need to ensure sufficient access to wholesale markets.

- Encouraging transition to competitive market: where (infrastructure) competition is feasible available remedies should assist in the transition process to sustainable competitive markets

- Incentive compatibility: Remedies need to be formulated in such a way that the advantages to the regulated party outweigh the benefits of evasion and require a minimum of on-going regulatory intervention.

## 3.2 Potential remedies

In the current context of the communications sector in Uganda, there are indications that competition problems exist in wholesale markets (e.g. that the dominant provider attempts to deny access or interconnection to infrastructure at affordable price or engage in delaying tactics).

Standard remedies include:

- Transparency: a transparency obligation (Art 9) making public specified information (accounting information, technical specification, network characteristics, prices etc.);

- A non-discrimination obligation that is to apply equivalent conditions in equivalent circumstances, and not to discriminate in favour of the regulated firm’s own subsidiaries or partners;

- Accounting separation to make transparent the internal transfer prices to the regulated firm’s own downstream operation in order to ensure compliance with a non discrimination obligation or to prevent unfair cross-subsidies;

- Access; an access obligation that consists of obligations to meet reasonable requests for access or interconnection or use specific network elements. These may include a range of obligations, including a disclosure obligation to negotiate in good faith over terms and conditions of providing access; and

- Price control: a price control and cost accounting obligation, which can require operators to set cost-oriented access charges or the imposition of a price control on the regulated firm. This is restricted to cases where the market analysis suggests that otherwise access charges might be sustained at an excessively high level, or where the firm might engage in a margin squeeze to the detriment of consumers.

## 3.3 Potential application of remedies in Uganda, by market

Without pre-empting the results of the quantitative analysis of the markets as described above it may be useful to provide a list of markets where we would expect, at this stage, to find a need for ex ante regulation. For these markets we provide what, at this stage, appear to be the most likely remedies that may be used by the UCC should these markets turn out to be deemed as non-competitive.

**Table 3-1: Markets and potential remedies in Uganda**

| No | Market | Proposed Criteria |
|---|---|---|
| | **R E T A I L** | |
| **1** | Voice services (fixed and mobile) | • N/A (competitive once wholesale issues are addressed) |
| **2** | Internet services (retail, broadband and dial-up) | • N/A (nascent market, competitive once infrastructure rollout has progressed, and even then wholesale remedies more appropriate) |
| **3** | Leased line services (retail) | • N/A (competitive once wholesale issues are addressed) |
| | **W H O L E S A L E** | |
| **4** | Fixed termination | • Price control: determination of cost based charge; transparency |
| **5** | Mobile termination | • Price control: determination of cost based charge; transparency |
| **6** | Fixed call origination | • Price control: determination of cost based charge; |
| **7** | Mobile call origination | • Price control: determination of cost based charge) |
| **8** | Transit | • Price control: determination of cost based charge |
| **9** | International access | • Price control: wholesale price to be based on avoidable cost discount. |
| **10** | Transmission links (wholesale leased | • Price regulation: |

| | | |
|---|---|---|
| | lines and transmission links (trunk and partial private circuits (PPC)) | o For end to end leased lines: wholesale price to be based on Retail minus (avoidable cost discount)<br>o For trunk segments and PPCs: cost based charges required – application of imputation tests where deviations are expected |

*Source: PwC*

# 4 Conclusions

The UCC's mandate includes an active role in regulating competition in the sector. We have reviewed the competition framework in Uganda (institutions, legal instruments, and specific provisions) found that, despite some gaps and inconsistencies, the existing legal and regulatory framework provides a sound basis for competition regulation in the communications sector in Uganda. A major concern, however, is the absence of a Competition Law, a Competition Authority and a Competition Tribunal. We also propose that the UCC should be equipped as may be necessary with a view to taking on a proactive role the monitoring and enforcement of competition.

In terms of regulatory approach to competition regulation, we recommend that UCC should apply a mix of ex ante and ex post regulation, weighting the benefits of potentially preventing anti-competitive conduct under ex ante regulation with the cost of a relatively heavy handed form of regulatory intervention. Ex ante regulation should be focused on wholesale markets with identified market failures.

This report provides a framework for a market analysis of the competition sector in Uganda, including the definition of markets, the assessment of the level of competition in different markets, and the application of potential suitable remedies in markets where competition is found to be insufficient.

In this document, we have outlined a total of ten markets: three retail markets including and seven wholesale markets. For each proposed retail market we have set out the related wholesale markets.

We have also provided a framework of criteria for competition analysis in each of these markets with a proposal in relation to which criteria might be most suitable in which markets.

Finally, we have outlined potential remedies that may be used in markets where an operator is found to be dominant. Again, we have provided our initial view on which remedies are likely to be among the most appropriate candidates for ex ante regulation in which markets.

As a next step, we propose to agree and finalise with UCC the exact delineation of each market, the respective criteria to be applied to assess the state of competition, and the expected outcome in terms of dominance designation and applicable remedies. Following agreement with the UCC we would then prepare a consultation document that would be used to solicit stakeholder views on key issues related to the UCC's approach to market analysis.

# 5 Appendix 1: International examples of relevant markets

**Table 5-1: Relevant Markets identified by EC in 2003 and 2006**

| | EC Relevant Markets 2003 | EC Proposed relevant markets 2006 |
|---|---|---|
| Retail (provision of connection to and use of public telephone network at fixed locations) | 1. Access to the public telephone network at a fixed location for residential customers<br>2. Access to the public telephone network at a fixed location for non-residential customers<br>3. Publicly available local and or national telephone services provided at a fixed location for residential customers<br>4. Publicly available international telephone services provided at a fixed location for residential customers<br>5. Publicly available local and/or national telephone services provided at a fixed location for non-residential customers<br>6. Publicly available international telephone services provided at a fixed location for non-residential customers | 1. Access to the public telephone network at a fixed location for residential and non-residential customers |
| Retail (other) | 7. The minimum set of leased lines (leased lines up to and including 2 MB/sec) | |
| Wholesale | 8. Call origination on the public telephone network provided at a fixed location<br>9. Call termination on individual public telephone networks provided at a fixed location<br>10. Transit services in the fixed public telephone network<br>11. Wholesale unbundled access (including shared access) to metallic loops and sub-loops for the purpose of providing broadband and voice services<br>12. Wholesale broadband access ('bit-stream' access, network access)<br>13. Wholesale terminating segments of leased lines<br>14. Wholesale trunk segments of leased lines<br>15. Access and call origination on public mobile telephone networks<br>16. Voice call termination on individual mobile networks<br>17. Wholesale national market for international roaming on public mobile | 2. Call origination on the public network provided at a fixed location<br>3. Call termination on individual public networks provided at a fixed location<br>4. Wholesale (physical) network infrastructure access (including shared or fully unbundled access) at a fixed location<br>5. Wholesale broadband access<br>6. Wholesale terminating segments of leased lines, irrespective of the technology used to provide leased or dedicated capacity<br>7. Voice call termination on individual mobile networks |

| | | |
|---|---|---|
| | networks<br>18. Broadcasting transmission services to deliver broadcast content to end users | |

**Table 5-2: Identified markets in other jurisdictions**

| | Kenya (proposed) | Lebanon | Saudi Arabia | Malaysia (Access List 2005)) |
|---|---|---|---|---|
| Retail | 1. Mobile voice<br>2. Fixed voice including access | 1. Access to PTS at fixed location for residential<br>2. Access to PTX at a fixed location for n-r c<br>3. Public Telephony at fixed location for residential customers<br>4. Public Telephony at originating at a fixed location and terminating at a mobile location for residential customers<br>5. Publicly available access to the internet from a fixed location for residential customers<br>6. Publicly available international telephony provided at a fixed location for residential customers<br>7. Public mobile telecommunications services for residential customers<br>8. Internet service provision for residential customers<br>9. Publicly available domestic and international telephony provided at a fixed location for non-residential customers<br>10. Domestic telephony originating at a fixed location and terminating to a mobile for onon-residential customers<br>11. Publicly available access to the internet from a fixed location for non-residential customers<br>12. Public mobile telecommunications services for non-residential customers<br>13. Internet Service Provision for | 1. Fixed access services<br>2. Local and national fixed voice call services<br>3. International voice call services<br>4. National mobile services<br>5. Business data services<br>6. Internet access services | |

| | | | | |
|---|---|---|---|---|
| | | non-residential customers<br>14. Leased lines up to and including 2 MB/s capacity<br>15. VPNs and Managed Network Services | | |
| Wholesale | 3. Mobile termination<br>4. Fixed termination<br>5. Fixed call transit<br>6. Interconnection | 16. Access circuits (narrow and broadband) to a public telecommunications network<br>17. Call origination from a public telecommunications network<br>18. Call termination on a public telecommunications network<br>19. Transit services over a fixed public telecommunications network<br>20. International roaming on public mobile networks<br>21. Unbundled access (incl shared access) to metallic loops and sub-loops for narrowband and broadband services<br>22. Terminating segments of leased lines<br>23. Trunk segments of leased lines<br><br>Different types of wholesale leased lines:<br>1. Up to 2 MB/s and those over 2 MB/s<br>2. Short or urban leased lines; and<br>3. Long distance or backbone leased lines | 7. Fixed voice call termination services<br>8. Transit interconnection service<br>9. Line sharing services<br>10. Broadband access services<br>11. Leased line services<br>12. Mobile call termination services<br>13. National roaming services<br>14. International voice call services | 1. Fixed Network Origination service<br>2. Equal Access (PSTN) Service<br>3. Fixed Network Termination Service<br>4. Mobile Network Termination Service<br>5. Interconnect Link Service<br>6. Private Circuit Completion Service<br>7. Domestic Network Transmission Service<br>8. Internet Access Call Origination Service<br>9. 3G-2G Domestic Inter Operator Roaming Service<br>10. Inter Operator Mobile Number Portability Support Service<br>11. Infrastructure Sharing<br>12. Domestic Connectivity to International Services<br>13. Network Co-Location Service<br>14. Network Signalling Service<br>15. Full Access Service<br>16. Line Sharing Service<br>17. Bitstream Services<br>18. Sub-loop Service<br>19. Digital Subscriber Line Resale Service<br>20. Internet Interconnection Service<br>21. Broadcasting Transmission Service<br>22. Digital Terrestrial Broadcasting Multiplexing Service |

# 6 Appendix 2: Criteria for assessing dominance (Competition Bill 2004)

The Ugandan Competition Bill 2004 provides guidance on the criteria to determine the state of competition in a market as set out in Box 1 below.

**Box 1: Dominance criteria as listed in the Competition Bill (2004)**

Section 44 (3) of the Competition Bill states that for the purpose of determining whether an enterprise enjoys a dominant position, or otherwise, one or more of the following factors may be taken into account:

i. Market share of over 33 percent;
ii. Size and resources of the enterprise;
iii. Size and importance of the competitors;
iv. Economic power of the enterprise including commercial
v. Advantages over competitors, which may be measured by reference, among other factors, to product range, established trade marks, customer loyalty, vertical integration of the firm, sales or service network;
vi. Technical advantages enjoyed by the firm, which may be judged with reference, among other factors, to patents, know□how and copyright;
vii. Dependence of consumers;
viii. Monopoly status or dominance acquired as a result of any Act, or by virtue of being an undertaking of the Government,Government company or a public sector undertaking ;
ix. Entry barriers if any, which may be judged by reference, among other factors, to regulatory barriers, financial risk, high capital cost of entry, marketing entry barriers, technical entry barriers, economies of scale, high switching costs for customers;
x. Countervailing buying power;
xi. Market structure and size of market.
xii. Any other factor which the Commission considers relevant.

*Source: Ugandan Competition Bill 2004*

# 7 Appendix 3: Background –Basic Concepts and Issues

## 7.1 Interplay of sector and competition regulation

### 7.1.1 Sector and competition regulation

In many jurisdictions worldwide, responsibilities used to be clearly allocated between competition authorities and sector regulators. While competition authorities have focused on reducing anti competitive conducts across the economy, telecommunications sector regulation have focused on restricting incumbents' monopoly power and on providing an enabling framework for opening markets to competition.

With increased competition in the market, however, boundaries between sector and competition regulation have become blurred. Many countries use a mix of competition and sector regulation and telecommunications regulators often apply competition law or policy in carrying out their mandate.

The typical mandate of sector regulatory authorities and competition authorities can be compared and contrasted in several ways. The main differences are with regard to the policy focus, timing and scope as well political economy issues. Table 7-1 lists some of these key differences.

**Table 7-1: Typical differences between competition and sector regulation**

| | **Telecommunications authority** | **Competition authority** |
|---|---|---|
| Policy focus | • Price and quality regulation of incumbent operator<br>• Manage transition from monopoly to competitive markets<br>• Additional policy objectives including social (e.g. universal service) or environmental objectives | • Deterring market participants from interfering with the operation of competitive markets |
| Process | • Ex ante and ex post regulation<br>• Mix of formal/legal and less formal procedures | • Ex post regulation<br>• Driven by specific complaints and case-by case investigations<br>• Formal procedures |
| Scope | • Industry specific | • Economy wide, multiple industries<br>• Narrowly defined intervention powers and remedies |

*Source: PricewaterhouseCoopers*

### 7.1.2 Transition from monopoly to competition

It is generally desirable to minimize government intervention in competitive markets. As a result, the question arises about the role of sector specific regulation in an increasingly competitive market. International experience has shown that governments around the world have opted for a variety of models to deal with communications markets that are not fully but reasonably competitive.

- The EC regulations provide that ex ante SMP regulation need to be complementary to competition law. Ex ante regulation can only be applied where competition law would insufficiently address the market failures concerned. Furthermore, a market would be removed from the list of predetermined services once there is evidence of sustainable and effective competition in that particular market.

- Under the Canadian Telecommunications Act, the Canadian Radio-television and Telecommunications Commission CRTC has a duty to forbear (refrain) from regulation where telecommunications services are ‘workably competitive’, that is where no operator possesses substantial market power. For the purpose of the forbearance clause, CRTC is requested to regularly carry out market studies to assess market power in relevant markets.

- Some countries rely on economy wide rules of competition regulation and it is the competition authority that intervenes in the telecommunications sector, if required. For example, in 1997 the Australian Competition and Consumer Commission (ACCC) became responsible for both implementation of competition rules and policies in the telecommunications sector as well as economic regulation of telecommunications operators include the incumbent operator at that time, Telstra.

- In the UK, OFCOM has concurrent authority to deal with competition matters arising in the telecommunications sector, but most coordinate with the Director General of Fair Trading, which has the primary responsibility for enforcing the provision of UK competition legislation. In addition, the Competition Commission acts as an appeal body for certain decisions taken by sector regulators.

- Other governments have opted for some form of ‘potential regulation’, i.e. they established mechanism, which allow some regulatory authority to control prices and quality if and when regulated outcomes are judged unsatisfactory. In Nebraska, a US state, the entry to the telecommunications sector and prices are unregulated, but the sector regulator may intervene if a certain level of complaints is reached.

Clearly, there are differences and trade-offs in relation to the division of responsibilities between sector regulators and competition authorities. However, there are justifications for telecoms regulator to have a continuous role in an increasingly competitive market, including:

- A need for ex ante rules that define the environment conducive to the emergence of competition in markets where competition is not fully operational;

- A need for ongoing supervision on issues such as interconnection, quality of service and establishment and enforcement of licence conditions;

- A need to implement policies other than competition related policies such as universal services or national security.

Furthermore, in most emerging economies, including Uganda, it will take a substantial period of time until markets are fully competitive and, for the time being, the Ugandan Communications Commission has the mandate to safeguard competition in the communications sector.

## 7.2 Market power, dominance and effective competition

Market power or dominance can be defined as 'the ability of a firm or group of firms to raise price above the current level for a non-transitory period without losing sales to such a degree as to make this behaviour unprofitable.' [9] The following aspects are covered by most definitions of market dominance:

- Ability of market players to influence prices;
- Ability to undertake actions resulting restriction in output (or quality of service);
- Link between price increases and increase in profitability;
- Reference to the benchmark of a competitive price level;
- Persistence of market power (symptoms above) over a continuous period of time.

While definitions differ, market dominance is commonly interpreted as a more extreme form of market power. The World Trade Organisation[10] and EU[11] competition law define market dominance as 'a position of economic strength enjoyed by an undertaking which enables it to prevent effective competition being maintained in the relevant market by affording it the power to behave, to an appreciable extent independently of its competitors, customers and consumers.' Joint (or collective) dominance refers to a situation where a dominant position is held by two or more undertakings that are legally and economically independent of each other.

In the United States, it has been largely left to courts to decide what constitutes dominance and, for the most part, they have applied criteria based solely on market shares. In fact, most definitions of market dominance imply the possession of higher market shares than its competitors. Usually the thresholds of market share vary between twenty-five and fifty percent (and sometimes more), depending on the jurisdiction.

However, increasingly other indicators have been used as an indicator for market dominance. This is because a high market share alone may not result in market power. Firms with high market shares may still be constrained from raising prices by, for example, the threat of existing and new competitors or 'countervailing power' of customers in the market such as, for example, their willingness to do without the service if the price increases (see UCCs Fair Competition Regulations 2005, Regulation 13 (4 b)). We will discuss some of these criteria in more detail in Section 2.

While often market dominance is used as a proxy for lack of competition, it is difficult to draw a clear demarcation line between the concept of market dominance and that of lack of effective competition.

---

[9] This is definition used by Oftel (now Ofcom), the UK sector regulator, in Oftel: Draft Guidelines on Market Influence Determinations, 1999.

[10] WTO document Working Group on interaction between competition and trade policy: Background note on fundamental principles of competition policy **WT/WGTCP/W/127**

[11] OECD Working party on Telecommunications and information services policies; Indicators for the assessment of Telecommunications Competition, 17 Jan 2003 (DSTI/ICCP/TISP (2001)6/Final; Bishop, S. and Walker, M (1999): the Economics of EC Competition Law. For EC: Case United Brands v Commission, ECR/COMP 207;

The EC defines effective competition as the continuing absence of players with a dominant position (or significant market power). Others argue that the concept of effective competition should go beyond this interpretation by including dominant firms conduct as well as consumers' benefits from competition, such as the quality of service, choice, innovation and economic efficiency.

In Nigeria, the Act provides for the regulator, the Nigerian Communication Commission to intervene in case a firm in a dominant position is engaged in conduct that 'substantially lessens competition in any communication market' (Section 92 (4) of the Communications Act). In line with this provision, the Competition Practice Regulations 2007 list conduct or practices that shall deemed to result in a substantial lessening of competition including failure to provide interconnection or other essential facilities to a competing Licensee, discrimination, bundling of services, or the supply of services below long run average incremental costs.

## 7.3 Significant market power

The Terms of Reference for this assignment request the consultant *inter alia* to identify operators with significant market power (SMP).

As part of its reform package issues in 2002, the European Commission (EC) re-launched the concept of SMP to bring telecommunications sector regulation in line with competition law in EU member states. It has since been adopted in other jurisdictions outside EC, but less so in developing and emerging markets.

The EU defines[12] SMP as the ability of a firm to act independently of competitors and customers. Initially, the SMP concept was understood as an established threshold of twenty five percent of market share above which the operator (the incumbent) was automatically subject to certain regulations. The revised framework has eliminated the 25 % threshold and aligned SMP instead with the principle of dominance as defined under EU competition law.

SMP regulation under EC law takes a forward looking approach. It requires the National Regulatory Authorities (NRA) to assess SMP in each (of eighteen) predetermined retail and wholesale market based on a range of criteria (see section 2 for discussion of some of these criteria).

In case that an operator is classified as having SMP, it is subject to ex ante regulation resulting in obligations including one or more remedies which may include the following: accounting separation requirements, mandatory publication of reference interconnection offers, or the obligation to align interconnection prices to costs. It is important to note, however, that a SMP designation does not mean that such an undertaking has abused its dominant position, but that an abuse is likely to occur if not regulated *ex ante* (see Section Ex post vs. ex ante regulation for a discussion of ex ante vs. ex post regulation).

The 2002 Framework Directive is currently under review. In relation to SMP regulation, it is envisaged to phase out ex ante regulation, where possible, in view of increased competition. Furthermore, it has been proposed to focus ex ante regulation on wholesale rather than retail markets and thus reduce number of predetermined product and service markets from eighteen to

[12] EC Commission guidelines on market analysis and the assessment of significant market power under the Community regulatory framework for electronic communications networks and services (2002/C165/03).

seven markets. A list of markets as predetermined by the EC in 2002 and redefined in the Reform Proposal[13] (2007) is set out in Appendix 1.

## 7.4 Market barriers

In Section 7.1 we argued that high market share alone may not translate into market power where markets are contestable. In contestable markets, barriers to entry or exit would be so low that the threat of potential entry or substitution of products prevents the incumbent(s) from exercising market power.

In practice, however, the existence of market barriers to entry and exit will often limit the opportunity of potential competitors to restrain the incumbents' market power. Entry barriers either make entry more costly, more difficult, or impossible, and thus create an asymmetry between incumbents and new entrants. In addition, barriers to exit may reduce, or destroy altogether, a firm's incentives to enter the market in the first place. Common barriers to entry/exit include:

- Legal and regulatory barriers: barriers that result from legislative, administrative or government measures including patents, exclusivity periods, or limited access to spectrum.

- Economies of scale and scope: barriers that result from the differences in size between an established and a new entrant as well as the ability of larger operators to make use of synergies between different products produced jointly by the same firm.

- High capital/sunk costs: If a new entrant comes into the market, he will face high start up costs. Some of these costs will be 'sunk', that in the event the business fails, these assets cannot be recovered through deployment outside the relevant market.

- Network externalities: The value of telecommunications networks increases depending on the number of subscribers. Once a 'critical mass' is reached, a new entrant will face difficulties to overcome brand loyalty of the incumbent's product (e.g. in case of low onnet call charges).

- Bottleneck/essential facilities (e.g. termination on another operator's network, or access to transmission links).

However, in the telecommunications sector entry barriers may diminish over time due to on-going technical progress and other factors.

## 7.5 Ex post vs. ex ante regulation

The benefits of markets and competition in terms of efficiency, innovation, etc. are well known and widely accepted. However, there is a need for governmental intervention (ex post or ex ante) in cases of market failure for reasons of market power, barriers to entry and/or exit, informational asymmetries, etc.

Competition regulation in telecommunications commonly aims at ensuring that end users achieve long term benefits in terms of pricing, innovation and choice of products, that products are

[13] Commission of the European Communities: Report on the outcome of the Review of the EU regulatory framework for electronic communications networks and servicesin accordance with Directive 2002/21/EC and Summary of the 2007 Reform Proposals (COM(2007) 696 final), 13.11.2007.

responsive to consumers' demands, that competition is promoted in all markets, that connectivity of communications services is ensured, and that economically efficient investments are carried out.

In addition to economic efficiency objects governments may pursue other objectives such as affordability of access to communications services or the promotion of a particular industry or technology that are deemed to be in the public interest. In this case a balance needs to be struck between competing objectives.

Regulators may intervene ex-post or ex-ante depending on nature of the regulatory regime. In practice, however, most countries will apply a mix of ex post and ex ante regulation depending on the maturity of the market, the respective mandates of regulatory institutions and regulatory traditions.

*Ex post* regulation is mainly concerned with the conduct of market players. Competition laws generally focus on *ex post* regulation: they impose a mixture of: (i) pre-transaction clearance procedures; (ii) contract notification obligations; and (iii) powers given to the competition authority or courts power to prevent anti-competitive behaviour once it has occurred.

In contrast, e*x ante* regulation is mainly concerned with market structure that is the number of firms and level of market concentration, entry conditions, and the degree of product differentiation. It sets forward looking expectations for firm behaviour and makes rules and regulations accordingly. The main advantages of *ex ante* regulation are that:

- It avoids damage from anti-competitive behaviour by anticipating and preventing it;
- It increase certainty, transparency and predictability for market participants with regard to the implications of anti-competitive behaviour as well as with regard to information requirements;
- Disputes may be avoided or resolved more easily as rules are established.

However, there is a risk that *ex ante* regulation may lead to unnecessary or excessive intervention and may even prevent potentially beneficial behaviour. The EC Commission SMP guidelines[14] state that:

> *'As far as emerging markets are concerned, […] where de facto the market leader is likely to have a substantial market share, should not be subject to inappropriate ex- ante regulation. This is because premature imposition of ex-ante regulation may unduly influence the competitive conditions taking shape within a new and emerging market.'*

Furthermore information requirements on regulators and on the regulated industry and thus associated costs are high and procedures are lengthy. The ex ante regulatory guidance on interconnection orders for competitive local operators in the US and Canada, for example, took regulators more than two years to reach a final decision on interconnection rates, terms and conditions and in Canada, the work continued thereafter in a number of industry technical committees. Moreover, given the technical dynamics of the sector, ex ante regulations may be out of date relatively quickly, if rules are not sufficiently flexible. Finally, some argue that sector regulators who are more likely to issues ex ante decisions may be more prone to regulatory capture by the regulated industry than competition authorities.

[14] *SMP guidelines, section 32.*

While informational and monitoring requirements are likely to be less under *ex post* than under *ex ante* regulation since competition authorities can limit monitoring and information gathering to firms that are the subject of investigations, information collection under *ex post* regulation can also be a challenge. This is because the firm under investigation has little incentive to provide the required information. Furthermore, the following limitations with regard to *ex post* regulation need to be taken into account:

- Ex post regulation may create regulatory uncertainty as to when their competitive behaviour would be regarded as anti-competitive;

- It does not prevent harm to competition but only ameliorates it and it does not address temporary departures from competition benchmarks;

Finally, the difficulties remain on how to manage the interplay between industry specific *ex ante* regulation and competition law (as discussed above).

However, an important argument in favour of ex post regulation is that is the least disruptive form of regulation. This argument carries even more weight in an emerging market context such as Uganda.

## 7.6 Market structure

### 7.6.1 Horizontal market concentration

The most obvious indicator to measure competition is the number of competitors in a particular market. Additionally, the relative market shares must be considered, since theoretical and empirical evidence suggests that there is a link between market shares and profitability (in terms of price cost margins). However, there is no clear cut answer to the question about the exact market share above which market dominance concerns would be justified.

The Ugandan draft competition bill (2004) refers to a share of thirty three percent, but lists a number of other factors that need to be taken into account. The Communications (Fair Competition) Regulations 2005 set the threshold at thirty five percent above which the firm is presumed to be dominant. According to Nigerian Competition Practices Regulations (2007) any firm with more than forty percent of total gross revenues will be presumed to be dominant. Similarly, in EC practice and case law, it is presumed that:

- Undertakings with market shares of no more than 25 percent are not likely to enjoy a dominant position in the market;

- Single dominance concerns (as opposed to joint dominance concerns – see section 7.10) normally arise with market shares above 40 percent;

- Very large market shares i.e. in excess of 50 percent are seen as evidence of the existence of a dominant position.

Another important consideration is the development of market shares over time. Generally, the persistence of high market shares strengthens the presumption of dominance. While a declining market share may still give raise to dominance concerns, a fluctuation in market shares is likely to indicate a lack of market power.

There are different methods for measuring market size and market shares depending on the characteristics of the relevant market:

- Revenues: In the case of differentiated products and significant price differences, values in sale and their associated market share are commonly used. Furthermore, revenues are also a more appropriate measure in the leased line markets than, for example, leased line termination points, which may vary in quality. In the interconnection market, revenues accrued for terminating calls to customers on fixed or mobile networks would be an appropriate measurement.

- Volume sales: Volume data can be used if there are no large differences in price, i.e. for example for bulk products, such as wholesale conveyance minutes. In contrast, for terminating calls on fixed and mobile networks, call minutes can have different values (local, long distance and international) and use of revenue would be the most appropriate measurement.

- Comparison between value and volume sales: In most cases it may be appropriate to analyse both volume and value sales. A higher market share by value than by volume, for example, may show that a firm is able to price above competitors – potentially an indication of dominance.

- Capacity and subscribers: Analysis of capacity of leased lines or number of subscribers may give some indication of market power in these respective markets. However, in case those subscribers are heterogeneous (e.g. residential and business), it may be more useful to compare similar groups of subscribers, if data is available.

Finally, in addition to common analysis of market shares, there are two widely used measures to assess the horizontal structure of a particular market: concentration ratios and the Herfindahl-Hirschman Index (HHI). Concentration ratios calculate the percentage of market turnover, that is accounted for by the largest three, four or five firms, resulting in so-called CR3, CR4 and CR5 ratios. The HHI is calculated by summing the squares of the market share percentages of each supplier, which gives a higher weighting to larger firms.

### 7.6.2 Vertical integration

Vertical integration can be found to be economically efficient due to the realisation of economies of scope (and scale). However, a vertically integrated firm can increase market power and exercise dominance by:

- Control and denial of access to essential facilities and bottleneck infrastructure, that is a facility that a competitor cannot practically or reasonably duplicate;

- Favourable links between integrated company and other companies (e.g. affiliated companies);

- The ability of the integrated firm to bundle products thus offering cheaper services and excluding the new entrant.

By its very nature, in the communications market bottleneck infrastructure leads to the dependence of other market players on the controlling firm's fair and indiscriminate supply of the required wholesale inputs so that there is a level playing field at the retail markets.

### 7.6.3 Structural entry barriers

High vertical and horizontal concentration and the control of essential facilities may effectively constitute market barriers for new entrants and thus negatively affect competition. Other related barriers that give an advantage to the incumbent and prevent new entrants from entering at a low cost include:

- Economies of scale/scope and sunk costs
- Discriminatory access to wholesale products
- Technological advantages and superiority
- Access (or lack of…) to capital markets/financial resources
- Distribution and sales network
- Advertising, brand image
- Switching costs.

Finally, in addition to the barriers discussed above, there may be legal and regulatory barriers that prevent new entry or create asymmetric conditions in the market (see Section 7.6.4 below).

### 7.6.4 Legal and regulatory entry barriers

Legal and regulatory barriers are not based on economic conditions, but are based on legislative, administrative or other measures by governments that have a direct effect on the condition of entry and the position of operators in the market. Legal and regulatory entry barriers include, for example:

- Licensing;
- Limit of the number of undertakings with access to spectrum (for example due to regulators decision about the optimum number of players in a market);
- Regulated retail rates (below costs); or
- Technical standards or patents.

## 7.7 Conduct (supplier behaviour)

Market structure conditions may (or may not) lead firms to behave anti-competitively. The main criterion to identify anti-competitive conduct relates to the pricing behaviour of firms. The ability to price at a level that keeps profits persistently and significantly above the competitive level is an important indicator for market power (excess pricing). Other indicators for anti-competitive pricing behaviour include:

- Cross subsidisation between competitive and non-competitive markets;
- Predatory pricing whereby a firm lowers its prices below costs until equally efficient competitors are forced to exit the market. The firm then raises its price to a monopoly level to recoup its lost profits.
- Vertical price squeezes may occur where a vertically integrated firm controls an essential wholesale input to the retail service such as interconnection (or, for instance, wholesale leased lines). It would provide the wholesale service only at a price in excess of costs and charge its own downstream operations below costs.

- Price discrimination.

Other forms of anti-competitive non-pricing behaviour include, for example, a dominant firm's refusal to provide access to essential facilities or delays and procrastination in the negotiation of interconnection agreements.

Furthermore, firms may seek to lock in consumers to prevent them from switching to alternative products, technologies or providers, so that consumers' switching costs outweigh the potential benefits of switching to another providers. Proxy indicators for consumer lock-in effects include the cost of equipment or long term contracts with one provider. In addition, increased differentiation may hamper switching between suppliers, if others are not able to imitate the differentiation.

Finally, supplier conduct in the market with regard to the quality of service provided to customers can be identified through the regulator monitoring of quality of service parameters.

A dominant firm's conduct is not automatically anti-competitive or illegal but may simply be a business strategy that gives the incumbent firm a competitive advantage. This may include, for example, high spending on advertising or the development of an effective distribution network.

There is an iterative feedback loop between market structure indicators and conduct of firms in a given market. Conduct by firms may result in barriers to entry which, in turn, have an impact on the market structure. For example, if a dominant firm strategically prevents competitors or new entrants to access their infrastructure or delays the negotiation of interconnection agreements, this will be reflected in the market structure in terms of high concentration ratios.

## 7.8 Conduct (consumer behaviour)

Consumers may have the ability to influence the conduct of firms, the performance of the market and ultimately the market structure. Their ability to influence and the kind of influence exercised depend on three main factors:

- Market transparency;
- Consumer countervailing power;
- Life-style and demand patterns.

Firstly, the transparency of the market depends on the extent to which consumers have access to information as well as the ability to use the information. For example, consumers may find it difficult to compare complex products and tariff packages offered by several providers, if charges and services are not easily available or presented in a comparable way.

Periodic surveys of households and business by the regulator or consumer associations are an important source of information to identify consumers' perspective on the transparency of the market. Furthermore, these indicators may be measured through data collection on the following aspects:

- Existence of regular notification of prices and available service options;
- Level of content and information contained on the regulators, operators, consumer bodies and other websites;
- Provision of requested information by operators (or their sale agents) at consumer interface locations.

Furthermore, consumers are able to exert countervailing power against anti-competitive practices, when buyers are large and powerful. Indicators to measure countervailing power may include:

- The number of large users for relevant services and their portion of total revenues of operators;
- The percentage of telecommunications costs in relation to total expenditure incurred by main buyers;
- The number of complaints from consumers in connection with service provision.

## 7.9 Performance/Consumer benefits

The criterion of performance measures how well industries accomplish their tasks in society's interest. In industrial economics theory, the industry performance is a result of the market structure and the conduct by market player. Economic performance refers to two dimension of (economic) performance as efficiency and technological progress (or static and dynamic efficiency).

In addition, performance may also be interpreted as consumer benefits. For the purpose of this assignment, we propose the following indicators to provide a picture of consumer benefits created by the industry:

- Choice and innovation: it is an important outcome of a competitive market, if consumers have choice between a wide range of services and services reflect the technological potential in a given market.
- Price and affordability: while market forces may not always result in prices that are affordable to all consumers, it is an indication of effective competition if products are tailored to different consumer profiles reflecting their respective willingness and ability to pay for that particular service.
- Quality of service: according to the International Telecommunications Union (ITU), quality of service can be defined as the collective effect of service performances, which determine the degree of satisfaction of a user of the service. Quality of service parameters monitored by regulators may give a useful indication of comparative quality of service performance between operators as well as trends over time.

Furthermore, profitability can be an important indicator for the relative efficiency and innovation of an industry. However, sustained high profits of an individual firm in the relevant market may be an indication of single dominance, whereas high profits across companies indicates the absence of fierce price competition or collusion (see Section 7.7 on pricing strategies).

Finally, universal access to communications services can also be used as an indicator to assess whether the industry achieves the public interest objectives set by the government.

## 7.10 Joint dominance criteria

When an assessment is made on the existence of joint dominance, above criteria form the basis In addition, a number of conditions (JDC) can be identified that are likely to lead to a joint dominance situation.

Firstly, each member of the dominant oligopoly must have the ability to know how the other members are behaving in order to monitor whether or not they are adopting the common strategy. The following criteria create conditions for such a situation:

- Highly concentrated markets in which a few players have a high market share (JDC 1);
- Companies can easily obtain good knowledge of their competitors' prices and customers (helps to detect cheating rivals) (JDC 2);
- Markets are mature (JDC 3) and demand is stagnant or there is only moderate growth (JDC 4);
- Products are homogeneous (JDC 5);

Secondly, any tacit coordination must be sustainable over time. As a result, a retaliatory mechanism of some kind must be in place that would affect any firm that deviates from the co-ordinated practice. (JDC 6). An example would be a credible threat of stronger price competition that would unequally impact upon the firm breaking the collective agreement. In addition, excess capacity makes it more difficult to maintain a collective agreement since providers would have an incentive to produce at a lower price by using their excess capacity (JDC 7).

Thirdly, the existence of existing and future competitors that would be able to counteract a collective dominant position should be taken into account. The following criteria are relevant in that regard:

- Barriers to entry (JDC 7);
- Similar cost structures (JDC 8);
- Mature technology and limited potential for product differentiation (JDC 9)
- Demand elasticity (JDC 10).

Finally, various informal or other links between undertakings concerned may be relevant. This includes common patterns of price movements or established contractual links. However, such links are not a sufficient condition as they may be an indication for increase in input prices or self-regulatory mechanism in the industry that are in the overall public interest.