

CONSULTATION

Dominance in Interconnection Markets

Dominance in Interconnection Markets

A Further Consultation by the Telecommunications
Regulatory Authority

2nd June 2003

Purpose: Further consultation regarding dominance in certain interconnection markets.



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1 Introduction

1.1 Relation to previous Consultation document

This further consultation is issued pursuant to sections 3, 57 and 58 of the Telecommunications Law relating to Interconnection and Access, and, Tariffs for Telecommunication services.

This Consultation develops further the issues raised in the Consultation document published by the TRA on 15th March 2003. The TRA received three responses to the early consultation document, and a summary of these responses can be found in the Annex to this Consultation.

The consultation document to which responses have been received restricted itself to the task of identifying dominance, in relation to Batelco, and was principally concerned with the period up until full liberalisation in July 2004.

The nature of the responses that have been received, has resulted in the TRA extending the scope of this document to encompass not only the identification of dominance in defined markets, as it applies to various types of licensee, but also to discuss the regulatory measures that may be applied in response to a finding of dominance.

This document is primarily focussed on a consideration of the circumstances that apply in the period until mid-2004, although in order to address these issues, in certain places we have outlined the situation that may prevail after full liberalisation occurs in July 2004.

1.2 The present Document

Before being able to determine dominance, and in particular the dominance of Batelco, the TRA must define the relevant markets in which such dominance applies. Where these markets concern interconnection between licensed Public Telecommunications Operators, and Batelco is found to be dominant, this determination initiates a 3-month period within which Batelco must develop and publish its Reference Interconnect Offer (RIO), which must include all relevant interconnection services. The TRA may "...issue an order specifying the terms and tariffs if it does not approve the contents of such offer in this respect, which order shall be effective from the date of issue, unless the Authority specifies another date".

The RIO will form the basis for any interconnection agreement reached between Batelco and other licensed operators. Unless the TRA specifies otherwise, interconnection prices in the RIO should be based on a forward-looking long-run incremental cost methodology¹.

Where dominance relates to connection between Batelco and entities that are not licensed Public Telecommunications Operators, then the connection between them is termed as 'access' rather than interconnection. Note that 'access' may also include physical or logical connections between licensed Public Telecommunications Operators. The law notes that the TRA may require a dominant operator to provide a Reference Access Offer (RAO).

A RIO will include many services that when supplied by themselves outside of the scope of interconnection, would normally be provided in accordance with regulations dealing with access.

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In addition to interconnection and the services included in a RIO by a dominant operator, there are several markets and related services for which licensed service providers and operators can rightly expect access. These markets will be identified and discussed in a subsequent Consultation paper that will be published shortly. This impending paper will address those initial cases for which the TRA is considering requiring Batelco to publish a RAO, and a description of the terms and conditions the TRA is minded to require of these access offers. Several of these access services should also be included in a RIO.

At present there is no market that is operating for interconnection or access within Bahrain, as Batelco is *de facto* the only operator providing telecommunications services. This situation is in the process of changing with the licensing of a Second Mobile Operator (SMO), and will change further with the establishment of the Bahrain Internet Exchange (BIX), and when entry by independent internet service providers (ISP) and value added service (VAS) providers occurs. Thus, there will shortly be demand in Bahrain for different interconnection and access services, and the set of relevant interconnection markets the TRA has defined in this Consultation is intended to reflect this.

In principle, the TRA will pursue cost-based prices (i.e. based on long-run incremental cost) for interconnection that cannot be economically replicated by new entrants, and where the interconnection is required by them to compete with a dominant incumbent on relatively equal terms. In enduring dominance cases, the TRA's view is that this costing rule may reasonably also apply in the provision of access by a dominant operator, to licensed Public Telecommunications Operators or Licensed Telecommunications Service Providers. However, where dominance is not considered to be enduring, access prices are likely to be at retail or retail-minus.

1.3 Transition to full liberalisation

From July 2004, Batelco will lose its remaining monopoly status. This may result in three important types of changes:

1. Changes in market definitions;
2. The possible removal of Batelco's dominance in some cases, and
3. Changes in the nature or cause of Batelco's dominance in certain markets.

The changes outlined by the three points above, and the consequential impact on the Bahraini telecommunications sector suggest that in addressing Batelco's dominance in the period leading up to July 2004, the TRA should be mindful that changes occurring with the arrival of full liberalisation in July 2004 do not result in undue disruption to companies or consumers. At several places in this document the TRA has identified some of these issues.

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2 Definitions and relevant references within the telecommunications law

2.1 Regarding Interconnection and Public Telecommunications Operators

“**Interconnection**”: the physical and logical linking of telecommunications networks used by the same or a different organisation in order to allow the users of one organisation to communicate with users of the same or another organisation, or to access services provided by another organisation;

“**Telecommunications network**”: a network permitting the conveyance of messages, sound, visual images or signals between defined termination points by wire, radio, optical or other electro-magnetic means;

“**Public telecommunications operator**”: a licensed operator authorized to provide public telecommunications services or to operate a public telecommunications network **under an individual license**;

A public telecommunications operator shall have the right to interconnect, and the obligation to negotiate in good faith on request the interconnection of, its telecommunications network to the telecommunications network of another public telecommunications operator at any technical feasible point, in each case as specified in its license or in a regulation issued by the Authority.

A licensee that is determined to be dominant in a relevant market can be required to file a reference interconnection offer. It can also be required to provide fair and non-discriminatory access to certain facilities or services where it is considered uneconomic for competitors to provide these themselves.

A **Reference Interconnect Offer (RIO)** is defined as:

A published reference document that sets out the full list of basic interconnect services and the terms and conditions, including charges, on which the licensee offers to interconnect with other licensees. The offer forms the basis of commercial negotiations between licensees to establish interconnect.

The Authority may issue an order specifying the terms and tariffs if it does not approve the contents of such offer in this respect, which order shall be effective from the date of issue, unless the Authority specifies another date.ⁱⁱ

2.2 Regarding access

“**Access**”: the making available of telecommunications facilities and/or telecommunications services to another licensed operator for the purpose of providing telecommunications services, and including the connection of equipment by wire or wireless means, access to physical infrastructure including buildings, ducts and masts, access to mobile networks and access to number translation or networks offering equivalent functionality.

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3 Relevant interconnection markets

3.1 Voice services

There are a number of types of services that are commonly discussed under the term “interconnection”. For fixed networks, these include: call termination, call origination and may also include transport or transit services.

On the networks of mobile network operators (MNOs) they include termination and origination and transport as well as mobile roaming, and interconnection of outgoing and incoming international traffic.

In the mobile context, the licensing of a second mobile operator now makes this aspect of interconnection pressing. There are five basic interconnection scenarios that the TRA has included in its considerations for this Further Consultation:

- Mobile to fixed termination;
- Mobile to mobile termination;
- Mobile to fixed interconnection for outgoing international traffic;
- Fixed to mobile termination (for domestic originated and terminated calls), and
- Fixed to mobile termination for incoming international calls terminated on the MO network.

The first three of these represent two forms of terminating interconnection that will be required by the second mobile operator (SMO), i.e.:

- Termination of calls made by users of MNO services on the fixed public telecommunications network,
- Termination of calls made by users of MNO services on mobile telecommunications networks within Bahrain, and
- Carriage, and / or the provision of services, enabling calls made by users of SMO services to be terminated on any network outside Bahrain.

The fourth and fifth bullets address termination services offered by MNOs. There are known to be ‘externalities’ associated with calls to mobiles, and the TRA will be mindful of these when defining relevant markets, assessing dominance, and deciding on the form of any regulatory intervention. These issues are addressed in section 3.1.1.

International aspects of both incoming and outgoing international traffic as it affects the SMO, are discussed in section 3.1.2.

3.1.1 Mobile termination

There are both externality costs and benefits associated with calls to mobiles:ⁱⁱⁱ

- a) Externality benefits are enjoyed by fixed line callers being able to access subscribers to mobile network operators (MNO) although if termination on MNOs is at costs, it is subscribers to MNOs that pay for and enable this option,

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- b) Externality costs arise because on average, when choosing an MNO, subscribers do not take full account of the prices charged by MNOs to other networks for terminating incoming calls^{iv}.

Point a) suggests that fixed line callers should pay to MNOs a price higher than the full resource costs involved in having their call terminated on an MNO, but only insofar as the competition between MNOs for subscribers is sufficiently vigorous so that these extra revenues are competed away through reduced MNO subscriber prices. Where there are only two MNOs, competition between them is unlikely to be sufficiently vigorous to result in high termination charges being fully passed through as lower charges for MNO subscribers. Thus, in Bahrain, the TRA will not at this time expressly seek to have the first externality internalised through allowing higher MNO termination charges.

The implication in regard to point b), is that each MNO represents a separate market for the termination of calls received from other networks, and thus each is dominant in the market for the termination of such calls.^v

The TRA proposes not to declare the SMO to be dominant in such a market at this stage, since the TRA does not consider it appropriate to declare dominance where the SMO has no customers as yet. Rather, the TRA proposes to declare that termination on Batelco's mobile network is a separate market, and thus Batelco is dominant in this market. The TRA preferred approach is to then require that interconnection charges between Batelco and the SMO be symmetrical.^{vi}

There are a number of technological solutions that are used in providing services in addition to voice on mobile networks, including SMS, GPRS, EDGE, and potentially also technologies associated with third generation networks. While several of the services supported by these technologies may involve limited demand substitutability, the economies of scope involved in their provision make stand-alone provision uneconomical. The types of cost structures associated with these services have resulted in them being referred to as "cluster markets". This describes a situation in which there are several services that need not be strong substitutes for each other, which are placed into the same product market due to the uneconomic nature of stand-alone provision.^{vii}

The TRA's analysis has led it to the view that a mobile communications cluster market exists for the retail provision of the following services:

- Basic voice services;
- Certain established supplementary and value-added voice services;
- Basic and value added messaging, and
- The provision of emergency call services by MNOs.

When receiving 'calls' for termination from the SMO, the TRA therefore considers that the MNO of Batelco should provide for established value added services that Batelco provides to its customers, to be included as a part of the interconnection service it offers. The Batelco RIO would therefore need to include these capabilities.^{viii} Research evidence suggests that to avoid competitive distortions, this would be a reciprocal requirement for the SMO.

In the previous Consultation document on interconnection, the TRA proposed that in regard to emergency services, Batelco should provide the SMO with interconnection and carriage across its network of emergency calls and the technical features normally

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provided with such call services, and access to its emergency call processing facilities. In its reply to the Consultation, Batelco has agreed to this. The TRA therefore intends to require Batelco to include in its RIO, the technical and commercial details of these interconnection and access services. These services will be provided to the SMO on a forward-looking LRAIC basis.^{ix}

It is not intended to be a requirement of this consultation that Batelco provide the SMO with access to end-user value added services.

3.1.2 International services

Mobile licensees have rights to provide certain international services to users that are connected to their networks.

The rights to provide international services afforded by the Mobile Licence do not extend to the provision of facilities that must be licensed through an International Facilities License (IFL), nor do they extend as far as the rights that will be available under the International Services License (ISL).

Batelco is the only operator in Bahrain to currently have an IFL, and this monopoly will remain in place until 01/01/2004, after which that activity will be subject to full competition. Similarly, Batelco will be the only recipient of an ISL until 01/07/04.

The SMO is, however, perceived to have a range of options for the immediate provision of international services to its customers. It may:

- rent a circuit or circuits from Batelco with which to independently connect the licensees Mobile Network to any other network (including carriers' carriers) outside Bahrain;
- enter into a specific commercial arrangement with Batelco for the carriage of international traffic to and from the licensees network, i.e. a retail minus option;
- obtain access to Batelco's international correspondent services for both incoming and outgoing international traffic, i.e. a cost based option.

In the previous Consultation document the TRA noted that it considered the leased lines option would place the SMO in a significantly inferior competitive position to that of Batelco. The leased line option would require the SMO to also make correspondent arrangements with administrators in other countries where the accounting rate system is followed, or arrange with international facilities providers to have end-to-end links, and arrangements for onward services (chiefly transit and call termination) in foreign countries. Moreover, for the time being Batelco controls the price of leased lines, and also restricts customers' choices by offering a maximum leased line bandwidth of 2Mb. In the Consultation document, the TRA stated that it considered the leased line alternative was therefore unlikely to be an adequate substitute for the correspondent services enjoyed by Batelco, and we reaffirm this opinion here.

The market structure that will exist at least until July 2004 is shown below in Figure 1.

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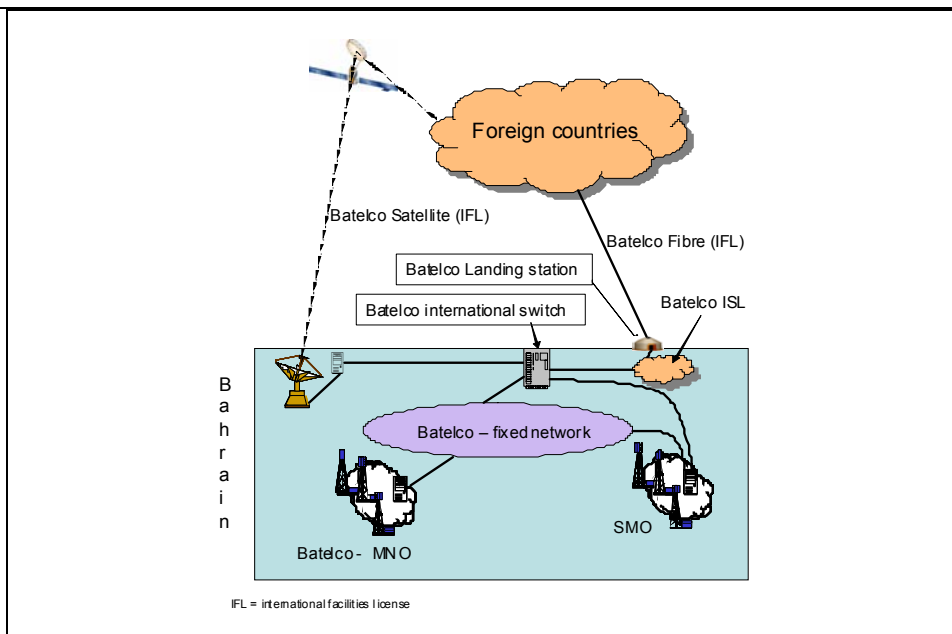


Figure 1: International PSTN market structure

The retail minus option (which has been proposed by Batelco) would appear to provide very much the same service as *international correspondent services*. The TRA's view is that the primary difference between them is price. In this regard, one major problem with the retail minus approach concerns its potential to undermine competitive neutrality between Batelco and the SMO. As yet, Batelco has no accounting separation and under these circumstances it can be argued that non-discriminatory access would require that Batelco provide access to the SMO on a long-run incremental cost basis.

From our analysis of the profitability of Batelco's international services sector, a retail minus proposal would still afford Batelco very high profits for its international services facilities. As Batelco would be providing a similar service to end-users as those provided by the SMO, the implication appears to be that the level of competition between the SMO and Batelco would be rather limited if the wholesale price for the SMO was much higher than Batelco's own long-run costs including a fair return for capital employed.

If Batelco was to be required to offer the SMO some form of retail minus access prices to Batelco's international outgoing and incoming services, Batelco would be the only provider of this service at least until July 2004, and Batelco would also exercise a significant degree of control over the SMO's retail tariffs as it competes with the SMO in the provision of mobile network services to end-users. Without close regulatory scrutiny there is potential here for a price squeeze. The TRA therefore considers that the retail minus approach is not a wholly adequate substitute for access to Batelco's international correspondent services. In the period up until July 2004, the TRA reaffirms its opinion stated in the previous consultation document, that there is a separate market for *international correspondent services*, which will include the provision of both incoming and outgoing international services.

Having set out a number of reasons why the provision by Batelco of either of the first two bulleted options would not be an ideal regulatory solution, there are also a number

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of reasons which make unsuitable a regulation requiring the SMO to obtain access to Batelco's *international correspondent services* on a long-run incremental cost basis. We develop these arguments below.

- If priced on the basis of long-run incremental cost, such a regulated solution would only operate for an interim period, possibly ending with full liberalisation in July 2004. From this time the SMO will be in a position to provide its own international facilities and services, or possibly purchase those offered by other new entrants. There is however, likely to be a transition period where the SMO still require Batelco to provide it with these services. In this period the price charged to the SMO by Batelco may rise significantly above long-run incremental cost, perhaps requiring the SMO to alter some of its retail prices for a period until it has made alternative arrangements.
- To the extent that Batelco must make specific investments to provide the SMO with access to its international correspondent services, Batelco will need to have reasonable assurance of cost recovery in the period up to July 2004, as the SMO is able to shift to other options at this time. It would thus appear appropriate for this risk to be transferred to the SMO such that investments that are made in order to provide the service which would in other circumstances be recovered over periods longer than 1 year, would be charged to the SMO as up-front fees or as a rental aimed at a 1 year recovery.
- There is also potential for a regulation that requires Batelco to price access to its international correspondent services at long-run incremental cost, to provide confidential information to the SMO about Batelco's costs. This may be inappropriate given that these services are potentially competitive.

While the TRA reaffirms its opinion stated in the previous consultation document, that in the period up until July 2004, there is a separate market for *international correspondent services*, the TRA is leaning toward an interim regulatory solution that provides the following:

- implementation of accounting separation between Batelco's international services, and its domestic services. This should enable the purchasing of international services by any licensed operator in Bahrain to be transparent.
- the provision of a Reference Access Offer (RAO) by Batelco, which includes access to Batelco's international services at a substantial discount.^x

Markets in the international sector may well change fairly rapidly following liberalisation, and the TRA proposes to revisit the issues as and when required. However, this is an area of activity that the TRA would wish ultimately to be largely unregulated. In the mean time, the TRA reaffirms its view that Batelco is dominant in the market for international correspondent services.

3.1.3 Directory information

There will be a market for the data, which enables entities to provide such things as directory enquiry (DQ) services and operator assistance (OA) services. Batelco appears presently to be dominant in this market. The TRA notes that Batelco's licence requires it to provide other licensed operators with access to Batelco's directory information database on "reasonable and fair terms ...".

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The TRA notes that there is potentially a competitive non-neutrality problem relating to the provision of this information. The method of cost sharing, where each party charges the other its costs, has the effect of unloading much of the overall costs of making directory data available to competitors, onto (small) new entrants, with the larger incumbent incurring much smaller costs, i.e. a small entrant is asked to pay a price relating to Batelco's data-base costs, while Batelco is asked to pay according to some measure of the cost faced the entrant in preparing a similar database for Batelco.

These costs can be said to be associated with competition as opposed to monopoly. In cases such as this, where licensees face costs in order to enable competition to proceed, a rule that each operator require the other operators to pay these costs has the effect of treating competitors differently and appears to be inequitable, i.e. costs of the largest operator are offloaded onto small ones and visa versa. Such an arrangement would not appear to be in keeping with the competitive neutrality principles that underpin the law in Bahrain. Therefore, the TRA's favoured approach to dealing with these costs would be to ask each licensed operator to bear its own cost in providing this data to other licensed operators.

Consultation:

The TRA welcomes comments from respondents on this proposal.

3.1.4 Relevant Interconnection markets

The TRA's analysis suggests that the relevant operator-to-operator 'product markets' for interconnection services are as follows:

1. call termination on public fixed networks;
2. call termination on Batelco's mobile network^{xi},

The relevant markets that involve the provision of higher-level services to licensed service providers or operators, therefore need to be addressed under the subsequent access consultation, are:

3. International correspondent services for fixed to mobile termination for incoming calls, and mobile to fixed access to Batelco's international outgoing service.
4. Access to Batelco's domestic transit services.
5. Access to Batelco's emergency call services.
6. Access to Batelco's DQ information.^{xii}

The geographic scope of these markets appears to be the Kingdom of Bahrain. Reasons for this are:

- Termination applies to the whole network of an operator. Operators are licensed to provide service over the whole of Bahrain.
- Given license coverage, there appear to be no differences in the demand and supply of either of these services that would permit more narrow market definitions at this stage.

With liberalisation in July 2004, more narrow geographic definitions may evolve.

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Consultation:

The TRA is interested in receiving the views of consumers, businesses, and in general stakeholders, concerning whether they consider that for the Bahrain telecommunications sector, these are the relevant markets for interconnection of voice services.

3.2 Value Added Services

Section 57 of the Telecommunications Law requires that a licensed operator in a dominant position must offer access to its telecommunications network and telecommunications facilities on fair and reasonable terms to any licensed operator on request.

That requirement comes into sharp focus with the immediate availability of Value Added Services (VAS) and Internet Services (ISP) licenses (ISP services are addressed below in Section 3.3). VAS licenses are not individual licenses and thus VAS and ISP licensees obtain *access* to a dominant public telecommunications operator's services; they do not get interconnection and are not covered by a RIO.

The issues that relate to VAS providers will therefore be dealt with in the forthcoming access consultation.

3.3 Data services

ISP services in Bahrain are now liberalised. The law also provides for the establishment of the Bahrain Internet Exchange (BIX). In order that the regulatory environment enables entry and competition in the provision of ISP services to end-users, there are several issues that need to be considered by the TRA for possible attention. These are:

- Fixed-to-fixed call origination for dial-up ISP services;
- Mobile to fixed call origination for dial-up to ISP services;
- Connectivity between ISP points of presence (POP) and the BIX;
- Connectivity between ISP points of presence (POP) and the Internet connectivity services supplied by Batelco;
- Connectivity between BIX and Batelco in Bahrain, and
- International Internet connectivity.

As was noted above for VAS licensees, ISP licences are not individual licenses and thus ISP licensees obtain *access* to a dominant public telecommunications operator's services; they do not get interconnection and are not covered by a RIO.

The issues that relate to ISP providers will therefore be dealt with in the forthcoming access consultation.

The BIX, however, will receive an individual public telecommunications operator licence and hence issues of connectivity between the BIX and the ISL licensee of Batelco and international Internet connectivity remain to be addressed.

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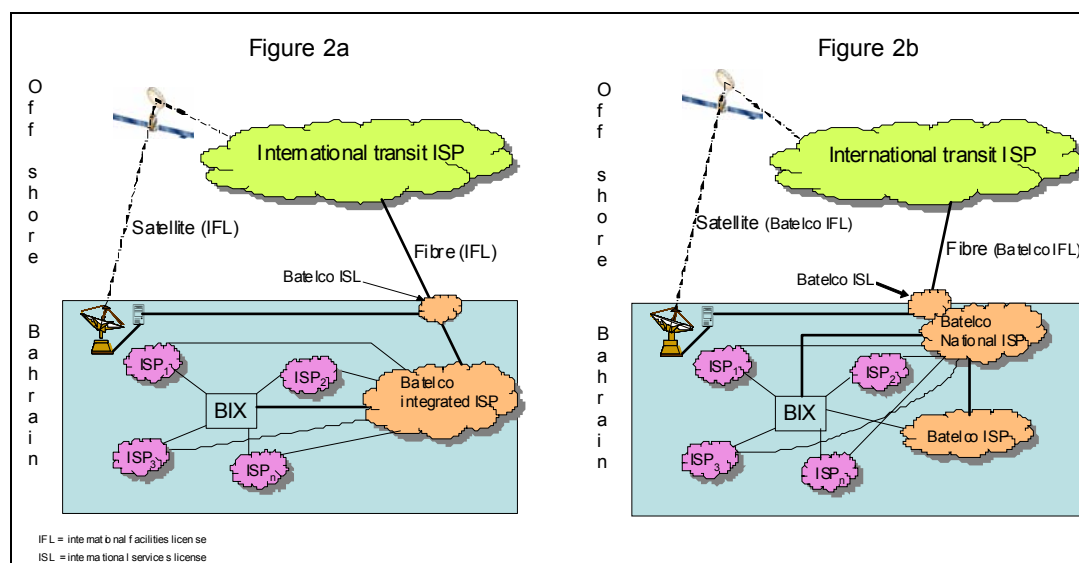
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3.3.1 Internet connectivity

In the case of Internet connectivity involving domestic IP addresses only, the service is potentially competitive. ISPs will take the data to the BIX where it will be handed over to the ISP on which the IP number is registered. The TRA is therefore of the view that for Internet connectivity involving domestic IP addresses only, there is no requirement to define the relevant interconnection or access market as there is no obvious market power problem and thus no intention at this stage to regulate the market.

Between now and July 2004, Batelco is the only entity able to provide Internet connectivity with the outside world. Until this time the law requires all entrant ISPs to obtain connectivity either through the BIX or through Batelco's ISP. The BIX is not able to receive either an international facilities license or an international services license before July 2004. The option of being able to lease international leased lines and to buy Internet transit services and to obtain any peering arrangements it can negotiate at a point outside of Bahrain, is not presently available to the BIX.^{xiii} Clearly, the BIX has no choice up until July 2004 but to buy *international Internet connectivity* from Batelco. Where packet delivery or retrieval involves IP addresses outside of Bahrain^{xiv}, as will be the case for a majority of packets which are the result of Bahraini Internet users, ISPs, either individually or through the BIX, will need to hand this traffic to Batelco and to receive the return packets from Batelco.^{xv} Batelco would be able to price this service as a monopolist, whether or not it was a wholesale or retail service.

Figure 2: International Internet connectivity



Moreover, the BIX and Batelco's ISP will both be competing to provide international transit access to ISPs.^{xvi} The legal vehicle through which this will be done is Batelco's international services license. This market structure is shown in Figure 2a. In the absence of regulation, where Batelco operates as an integrated end-user and national ISP, as would appear to approximate the present case due in part to Batelco's existing integrated accounting system, the BIX and Batelco would effectively be obtaining international transit services at different prices. In order to address this problem it is possible to require Batelco to account separately for Internet service bought or sold in Bahrain. We can show this diagrammatically by separating Batelco's ISP into a National and an end-user ISP as shown in Figure 2b. Under this structure Batelco's

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end-user ISP would buy international transit access on the same terms as the BIX, thus addressing the discrimination problem. However, through the legal vehicle of Batelco's ISL, Batelco the *National ISP* would still be able to price this service to both entities as a monopolist – it would be buying a transit service off-shore, and would be the monopoly seller of access to this service in Bahrain.

Moreover, as Batelco also operates at the level of an end-user ISP in competition with other end-user ISPs (that are yet to establish themselves), Batelco will have a substantial degree of control over retail prices in the retail market for end-user ISP services. This means that the BIX and independent ISPs potentially face a price squeeze through Batelco being able to control both wholesale and retail prices. A requirement that at the international connectivity level, Batelco sell transit to the BIX and Batelco's own end-user ISP on a non-discriminatory basis is not enough to prevent such a price squeeze occurring.

In considering regulations that the TRA may impose to address this problem the TRA is also mindful of the fact that market circumstances will change from July 2004, and thus the regulations may also need to change at this time. Should the TRA seek to prevent Batelco from charging excessively for access to its international transit service, (and we acknowledge that in terms of international practice, this would be exceptional), such a regulation would likely need to be either withdrawn or significantly modified from July 2004, as the BIX (and others) would then be able to obtain international facilities and services licenses, and would be able to provide an international transit service through its own IFL licensee, or an other's, control of fibre or satellite capacity out of Bahrain. It appears that the TRA's finding of dominance in the market for international transit services, is a temporary one.

If the TRA was to seek to control the price Batelco charges for its international internet transit service,^{xvii} whether prices were based on long-run incremental cost or any other cost-based approach, the TRA would need to understand Batelco's costs. This is likely to be a complex task, not least because international transit contracts are confidential.

For these reasons the TRA's view is that an alternative approach is required to controlling the level of the international transit price charged by Batelco. While we have noted the potential price squeeze above, the TRA favours the solution that requires Batelco to provide non-discriminatory wholesale access (e.g. retail minus) to transit services. However, as noted already, non-discriminatory access alone would not prevent Batelco from charging a monopoly price to the BIX and its own ISP.

Given that Batelco's exclusivity as the provider of international transit services will end in July 2004, the TRA considers that a requirement for Batelco:

- to implement accounting separation between Batelco the international transit provider, and Batelco's domestic ISP services, and
- to provide the BIX with non-discriminatory access to international internet connectivity.

would provide an acceptable regulatory solution in the interim period.

The TRA sees two main reasons why Batelco may not fully exploit its market power in the prices it charges the BIX:

- Batelco runs a greater risk of losing disgruntled end-user customers to competitors should end-user ISP prices decline sharply after July 2004;

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- The level of additional entry and facilities competition may well be dependent on the degree to which Batelco decides to exploit its market power where possible, in the period leading up to July 2004.

To the extent that entities hold foreign Internet content in Bahrain for ease of end-user access, they are reducing the demand for international connectivity from Batelco.^{xviii} These services are thus likely to be in the market for international Internet connectivity. Clearly, if these services are provided in Bahrain at present, they are being provided by Batelco.

The issues relating to the provision of these services as ‘access services’ will, therefore, also be dealt with in the forthcoming access consultation paper.

Consultation:

The TRA welcomes comments by respondents on these proposals.

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4 Dominance of Batelco in Interconnection services – Summary

The TRA's is of the view that the relevant wholesale, or operator-to-operator, 'product markets' for interconnection services are as follows:

- Call termination on fixed networks.
- Call termination on Batelco's mobile network.

The TRA considers Batelco to be dominant in these markets, and Batelco's RIO should therefore at a minimum be developed around these services. The prices for these call termination services should be set on the basis of forward looking incremental costs (LRAIC) including a mark up for common costs.

The TRA considers that the geographic scope of all the markets identified above is the Kingdom of Bahrain

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5 Review

In a national telecommunications market, such as Bahrain, that is expected to be subject to considerable development and change over the short to medium term, it is appropriate to review market analyses and the determination of market power on a regular basis. This will help to determine how competition is developing and the extent to which it is meeting the overall objectives of choice, quality and value in telecommunications services for end-users in Bahrain.

It is proposed that the determination of market power is reviewed no later than 2 years from the date of this determination. If, in the TRA's opinion, market circumstances suggest that an earlier review of the determination would be appropriate, or if a market player or other such interested party should present a compelling case for an earlier review, then the TRA will be prepared to consider undertaking it.

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6 Consultation

The TRA welcomes comments on the relevant interconnection markets identified and the proposed determination of dominance for Batelco.

Views submitted will be considered by the TRA in drawing up its final Determination of Dominance in certain interconnection markets at the end of this consultation.

Responses may be sent in writing by post or e-mail to:

The Telecommunications Regulatory Authority

PO Box 10353

Manama

Bahrain

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Submissions and comments may be published by the TRA on its web site, unless the respondent provides a justified request for confidentiality.

The Telecommunications Law requires a public telecommunications operator to provide a reference interconnection offer (RIO) within three months of it being formally found to be in a dominant position.^{xix} This consultation represents a further clarification and conclusion of the issues raised in the previous consultation paper, and the TRA has therefore deemed that the consultation period for this paper will be **14 days**.

The closing date for comments is 14 days from the date of publication of this consultation paper, i.e. 16 June 2003.

CONSULTATION

Dominance in interconnection markets

A1 Responses to the consultation

The TRA received three responses to its consultation document.

One of the respondents seemed to lose sight of the time frame relating to the TRA's assessment that Batelco was dominant in certain markets. The TRA states here that the Consultation is principally focussed on addressing the period up until July 2004, which is when full liberalisation occurs. Until this time Batelco's monopoly is in most cases protected from competition. However, the TRA acknowledges that more 'expansive' market definitions, e.g. *termination on fixed networks*, rather than *termination on Batelco's fixed network*, mean that the TRA is unlikely to have to amend this definition from July 2004. Two of the respondents commented on this issue. In the present paper, the TRA has adopted the recommendation of both respondents and employed the more general wording. Moreover, the TRA agrees that for call termination it appears to make little difference from where the call was originated, although until 2004 it is clear that our interest is restricted, for example, to mobile originated calls, which terminate on Batelco's fixed network.

In regard to Batelco's mobile network, however, the TRA has remained with its original definition of Batelco's mobile network, although we agree with one of the respondents, that in this case call termination by MNOs should be price reciprocally.

There was a concern that non facilities based businesses would be granted interconnection rights to Batelco's network. It was noted by one respondent that the usual approach was to provide non facilities based service providers with wholesale access, i.e. 'retail minus'. According to this respondent's interpretation of the Consultation Document, the following was being proposed as requirements placed on Batelco:

1. To provide ISPs with an international transit service at incremental cost,
2. To provide the SMO with an international correspondent service at long-run incremental cost, even though the SMO and other new entrants have the possibility to self supply in future, and
3. The SMO and other new entrants competitors would gain access to Batelco's value added services at incremental cost-based rates.

All three issues are discussed in this paper and so we do not address them specifically here. However, the TRA notes that its finding of dominance in the first consultation paper did not include the TRA's view of the pricing methodology that should apply to the service. The present situation regarding dominance may change in some cases relatively abruptly following full liberalisation in July 2004, and markets or dominance may change accordingly.

One respondent was concerned by the TRA's inclusion of transit services in a discussion concerning termination on a mobile network. The TRA's intention here was to identify the components of the call. The TRA agrees that transport and termination are not normally addressed by the same regulations. However, for termination on fixed networks, transit will be a component that is frequently demanded, and would thus need to be included as an element in a dominant operator's RIO. Clearly, until July 2004, no other licensee can provide this service.

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One respondent suggested that the cluster market as defined in the earlier Consultation, should be defined to include “basic and value added messaging” rather than “SMS”. The justification for this slightly wider definition was that mobile messaging is evolving beyond SMS. The TRA has changed the definition accordingly. Another respondent stated it was unclear about the relevance of the TRA’s inclusion of a cluster market relating to 2.5G network interconnection. The issue is explained further in the main body of the present document.

One of the respondents considered that it was appropriate at this stage for there to be a mobile to mobile termination market that was not network specific. The stated reason for this was because a mobile operator provides a range of complementary services to its customers and the most relevant perspective is competition on a network basis rather than competition in relation to a particular aspect of network competition. The TRA’s inclination is to eventually define a market for termination of each mobile network due to the externality cost noted in the main body of this document.

The TRA noted that in its view, firms that base a business around holding internet content close to the edges of the Internet, were in competition with major transit providers. One respondent considered these to be sufficiently different services that they should not be regarded as substitutes. The respondent considered that it was better to view cache and mirror site operators as providers of countervailing market power to any power that might be possessed by a provider of international Internet connectivity. The TRA considers that such a relationship suggests that cache and mirror sites may be in the same market as transit providers, i.e. they are connecting users to content and provide an alternative to transiting packets from distant sites.

Two respondents requested the TRA to provide further explanation of the analysis used to reach the market definitions. The TRA has provided additional discussion in the present paper.

Two of the respondents also provided commentary on the regulatory measures that the TRA should or should not take. As these were not part of the first Consultation document we have not reported specifically on these comments here.

Two of the respondents considered that the TRA should outline in the consultation document the form of the regulation it preferred in the markets defined. The present document has presented information about this.

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A2 A list of respondents to the earlier consultation on dominance in interconnection markets

- An AudioTex Service Provider
- Batelco
- Kalaam Ltd.

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Endnotes:

- ⁱ Under Section 3(18) the TRA may find an operator to be dominant in an interconnection market, but specify different terms and conditions of interconnection. For example, the TRA may require that a share of the dominant operators common costs are allocated to interconnection prices. In unusual cases, such as, in the case of a nascent service, or where dominance is related to a patent, a finding of dominance may result in no regulatory action.
- ⁱⁱ Section 57 of the Act suggests that anything classified as interconnection requires Batelco to offer this service at forward-looking long-run incremental cost, and to be included in its RIO. The TRA notes however, that section 3(18) enables it to deviate from this if there are sound reasons for doing so.
- ⁱⁱⁱ Externalities are a form of market failure. They are a benefit or cost caused by an event, but which are not taken fully into account in the decision to go ahead with the event. Examples include: a beekeeper who incidentally provides a pollinating service for nearby farmers (a beneficial externality) and cigarette smoking which gives rise to externality costs borne by others around them who must passively smoke and which has been proven to damage health.
- ^{iv} Where there is only two or three MNOs, there may be insufficient competition between them to enable these costs to be internalised, even assuming subscribers were highly sensitive to these charges.
- ^v The European Commission is planning to define markets on this basis.
- ^{vi} Research evidence suggests that a small operator that is free to set its own termination charge where the incumbent's interconnection price is regulated, may price this service excessively. Thus, reciprocity is the recommended solution.
- ^{vii} The Australian Competition and Consumer Commission (ACCC) defined a cluster market as follows, "...a bundle of related services, in cases where the costs of unbundling mean that suppliers of component services are unable to defeat a small but non-transitory price increase by a hypothetical monopolist supplying the whole bundle of services. These unbundling costs could be costs incurred directly by the purchaser (e.g. additional transactions costs) or additional costs incurred by suppliers of single services (e.g. economies of scope) which are then reflected in the relative prices of the bundled and unbundled services." ACCC Declaration of local telecommunications services – A report on the declaration of an unconditional local loop service, local PSTN originating and termination services, and local carriage service under Part XIC of the Trade Practices Act 1974, July 1999, p40.
- ^{viii} Research evidence suggests that networks that are not greatly different in size have sufficient incentive to retain such addition and established value added service when exchanging traffic across networks.
- ^{ix} While the TRA may regulate the amount that Batelco can keep for calls originated on its fixed telecommunications network and terminated on a mobile telecommunications network, the TRA has no plans at this stage to regulate the retail price charged for calls that terminate on either mobile network, unless there is evidence of anticompetitive behaviour.
- ^x The TRA notes that information from other jurisdictions suggests that new entrants are required to discount international services by approximately 20% to 30% in order to win viable numbers of customers from the incumbent.
- ^{xi} Once the SMO becomes established the TRA is likely to declare a market for termination of calls on its network.
- ^{xii} Note, that while access to these service may be the subject of regulation which is not concerned with interconnection between licensed network operators, these services are normally also included in a RIO.

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- ^{xiii} The TRA will address the issue of future market definitions and dominance in the international sector at a later date. The issue of domestic and international leased lines will also be covered by a separate consultation document to be released by the TRA shortly.
- ^{xiv} Indeed, Internet traffic is normally charged for on a return traffic basis in part because the proportion of origination packets to termination packets is a small fraction of one.
- ^{xv} The BIX cannot obtain an International Services License (ISL) until July 2004 and so can not use leased lines and contract for Internet transit services and any peering arrangements it can negotiate at a point outside of Bahrain.
- ^{xvi} Transit is the service sold by ISPs to other ISPs that are lower in the level of the (loose) internet hierarchy. Outside of the peering arrangements between core ISPs, it is the main way internet connectivity is maintained.
- ^{xvii} International transit on the Internet provides virtually complete Internet connectivity. It is a quite different service to that provided by carriers for PSNT traffic.
- ^{xviii} The services covered by this description include: caching, content delivery networks (CDN) and mirror sites.
- ^{xix} Section 57(b)