



Traffic Management and Pricing Practices Guidelines

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Introduction

1. These Guidelines elaborate the policy of the Telecommunications Regulatory ('the Authority') with regard to the issue of net neutrality as set out in the Authority's Position Paper, dated 6 October 2016, which is itself designed to meet the objectives set out in the Fourth National Telecommunications Plan ('NTP4'), issued by the Ministry of Transport and Telecommunications and endorsed by the Council of Ministers.¹ In particular, the NTP4 calls upon the Authority to "establish clear guidelines to ensure that the delivery of lawful content and applications is not subject to unreasonable discrimination by telecommunications operators."
2. This document constitutes the guidance requested in the NTP4 and should contribute to the consistent application of the Authority's conclusions outlined in section 6 of the Position Paper, thereby contributing to regulatory certainty for stakeholders.
3. In terms of the legal basis for these Guidelines, the Authority has a duty to protect the interests of subscribers and users in respect of a range of matters, including quality of services. The Authority shall exercise all powers and take actions as may be reasonably necessary to give effect to the provisions of the law.² These Guidelines are one mechanism for ensuring that the interests are adequately protected.
4. While these Guidelines are non-binding, the Authority expects operators to comply and will have regard to these Guidelines when examining whether a regulatee has complied with its regulatory obligations. They are without prejudice to the legal position or the rights and duties of the Authority to exercise its powers and prerogatives as envisaged by the Telecommunications Law of 2002. The Guidelines are not a substitute for any regulation or law and does not constitute legal advice.
5. These Guidelines will be periodically reviewed and may be amended as appropriate in light of further market and technological developments and possible changes in the law, regulations, or practice of the Government or the Authority.
6. The Guidelines are intended to:
 - (a) Create awareness about what rights subscribers and users have when using an Internet access service;
 - (b) To give operators a clear understanding of the conduct that will be considered acceptable and reasonable in terms of traffic management policies and practices and pricing practices;

¹ Part VI 'Access to Internet Applications and Services'.

² Telecommunications Law, at Art. 3(b)(1) and 3(c)(18) respectively.

- (c) To indicate how the Authority intends to supervise compliance by operators and take enforcement action when appropriate.

Application and definitions

7. These Guidelines are applicable to all Public Telecommunication Operators ('operators') that are licenced by the Authority, whether under individual and class licences, under the Telecommunications Law of 2002 to provide public telecommunications services or offer public telecommunications networks. A 'public' telecommunication service is one that is made 'available to the public'. As such, the provision of a private telecommunication service, such as an internal corporate network, would not fall within the scope of these Guidelines.
8. In particular, the Guidelines are designed to govern the provision of the following telecommunication services:
- Basic data service: "a telecommunications service, including mobile radiocommunications, that consists of the conveyance of messages..."³
 - Internet services: "provided to the public whose provision consists of subscriber interaction with the Internet or the transmission of information to or over the Internet".⁴
9. Together, these services shall be referred to in the Guidelines as Internet Access Services ('IAS'). Such services provide end-users with access to the public Internet, which would enable connectivity to broadly all (but not every) area of the Internet, whatever the form of transmission network or end-user equipment.
10. The Guidelines, as with the Position Paper, sometimes makes a distinction between managed and non-managed IP networks. While not always used in a technically accurate manner, the purpose is to distinguish between transmission services where an operator is able to offer certain guarantees in relation to the handling of transmitted data (e.g. priority delivery) and those over which no such guarantees can be offered (e.g. a 'best efforts' service). IP-based services where the operator offers service quality guarantees because they are optimised for specific content, applications or services specifically requested by the end-user, are referred to in these Guidelines as 'specialised services'. Examples of specialised services include IPTV, VoD, business VPN, and managed VoIP.
11. An IAS must be distinguished from the provision of content and application services that are made available over such transmission services, which are referred to as Over-The-Top ('OTT') services, as outlined in the Position Paper (at 3.2). We distinguished OTT services into three broad categories: communications, ecosystems and content. This classification was for the purpose

³ Individual Licence for National Fixed Services and for Mobile Telecommunications, at section 2.1.

⁴ Class Licence for Internet Services, at section 2.1.

of helping the Authority analyse the regulatory impact of OTT services and is not intended to provide an exhaustive list of what types of lawful content and applications are protected under these Guidelines. In addition, an operator may provide both IAS and OTT services, but these Guidelines are only concerned with the obligations of the operator in respect to its provision of the former, IAS.

12. When mention is made of 'end-users' of IAS, unless the context clearly indicates otherwise, the Guidelines are referring to both the providers of OTT services, as well as those that consume these services, to the extent that both are presumed to be dependent on an operator of an IAS to reach each other. The focus of these Guidelines, however, is on protecting consumers.
13. Where a provider of the OTT services operates its own telecommunications network, which is interconnected to an IAS, then the terms of that interconnection agreement may be subject to these Guidelines to the extent that the object or effect of such terms impacts directly or indirectly on the Authority's policies on net neutrality.
14. As provided for in the Telecommunications Law of 2002, the concept of 'consumers' must be further subdivided into Subscribers and Users, the former having a contractual relationship with an operator. Consumers can be natural or legal persons, such as companies. Consumers may also subscribe to an OTT service, but issues concerning these relationships are beyond the scope of these Guidelines and the jurisdiction of the Authority.
15. The Authority recognises that the nature of OTT applications can require discriminatory treatment in the transmission and handling of the data traffic by operators in order to enable certain services to be delivered. When reference is made to discriminatory practices, the focus is therefore on decisions and measures taken by individual operators rather than the technical treatment of transmitted data consequent from the standards, protocols etc. utilised by OTT service providers in the operation or delivery of any content or applications over the Internet.
16. These Guidelines are intended to assist individual operators, when acting independently, in evaluating current and future traffic management and pricing practices in respect of OTT services. They are not intended to, nor can they be relied upon to, encourage or condone the development of harmonised commercial practices among operators, which could amount to a concerted practice that infringes competition rules.⁵
17. These Guidelines are without prejudice to any obligations placed upon operators to safeguard the integrity of public telecommunications networks from practices that have been held by the Authority to threaten such integrity, such as

⁵ Telecommunications Law, at Art. 65(b)(2).

Emergency Order 1 of 2015, concerning certain practices relating to voice over internet protocol traffic.⁶

Consumer rights

18. The primary purpose of these Guidelines is to ensure that operators do not implement technical, operational or legal mechanisms designed to control or prevent consumers from accessing lawful content and applications over the Internet. As such, net neutrality should be seen as an element of the consumer protection regime. These Guidelines must be read in conjunction with the Consumer Protection Regulations, issued by the Authority; although the Regulations take precedence in the event of a conflict.

19. By referring to 'lawful' access, the requirements under these Guidelines should not interfere with any obligation an operator may have to block access to content or applications on the Prohibited Material List recorded on the Central Management System and actioned by the licensee through the operation of the Unified Technical Solution, in accordance with Resolution No. 12 of 2016 promulgating the Internet Safety Regulation.⁷ In addition, operators may also, from time to time, be required to block access to specific sites, content and applications by order from the Authority.⁸

20. One key mechanism for protecting the interests of subscribers and users is through the imposition of transparency obligations upon operators. Transparency should be achieved throughout the life-cycle of a user's interaction with the IAS, including the following examples of possible approaches:

- When advertising and marketing of such services (e.g. restrictions on usage);
- The applicable contractual terms when signing-up to the service (i.e. customer acquisition);
- Enabling the ongoing monitoring and comparison of quality of service metrics (e.g. the provision of a user dashboard);
- Upon termination of the relationship (e.g. outstanding fees).

Providing adequate user transparency is seen by the Authority as critical in generating demand-led competition in the marketplace, which the Authority has a duty to promote.⁹

21. Reflecting the Consumer Protection Regulations, transparency requires the provision of clear and comprehensive information to the consumer. The former involves considerations of intelligibility as much as legibility; therefore care should be given to using plain and straightforward language to describe the applicable

⁶ http://tra.org.bh/media/document/Emergency_Order_No_1_of_2015.pdf

⁷ <http://tra.org.bh/media/document/Internet%20Safety%20Regulation%20-%20English.pdf>

⁸ E.g. TRA Emergency Order No. 4 of 2010, 'Blocking of www.nonotalk.com' and Emergency Order No. 5 of 2010, 'Blocking of www.seefcall.com'.

⁹ Telecommunications Law, at Art. 3(b)(2).

terms and conditions. Such information must be made available in both the Arabic and English languages.

22. In terms of consumers being able to exercise effective choice, and therefore generate demand-side competitive pressure in the market, operators must grant subscribers the right to terminate any existing agreement when the operator introduces any new traffic management policies and tiered pricing structures that are likely to be detrimental to either the obligations or the rights of existing subscribers.¹⁰
23. Any such termination may be subject to an obligation on the subscriber to pay a reasonable price for any terminal equipment that has been provided by the operator, proportionate to the remaining initial subscription period foreseen under the contract. Any early termination price must not penalise the subscriber and must reflect the actual cost of the equipment. Alternatively, the subscriber may be asked to return the terminal equipment to the operator.
24. The Authority shall periodically seek the views of the Consumer advisory groups, representing both residential and business user, or the general public through public consultations and surveys, on both the content of these Guidelines and industry practices of relevance to these Guidelines.

Reasonable traffic management practices

25. In today's internet, different types of traffic almost inevitably require a certain degree of traffic management. The latter is required both to ensure efficient use of the network and to maintain the quality of certain types of content delivery such as video that is sensitive to time delays.
26. In practice, traffic management can be manifest in jitter, packet loss, different latency or bandwidth for certain categories of data. Reasonable traffic management measures would therefore need to reflect, subject to the actual limits in network capacity, the needs of different types of data such as video or voice, which require low latency and, in the case of video, high bandwidth, versus services such as email or text messaging that can function in an acceptable way even at relatively high latency or low bandwidth. Such traffic management measures might be purely technical or quality-related.
27. However, the purely technical or quality-related nature of a certain practice may not always be apparent. Therefore, in order for a traffic management practice to be deemed reasonable, the Authority will use additional criteria that would need to be met in order for a measure to be deemed reasonable.
28. First, traffic management measures must not discriminate between essentially the same, similar or competing content, applications and services based on their

¹⁰ Operators will have the burden of showing that any change will not be detrimental, for at least the vast majority of subscribers.

different origin or OTT provider. This could, for example, be the case where an operator has a commercial arrangement with an OTT provider to give preferential treatment to its traffic or, alternatively, decides to throttle traffic from OTT providers who do not pay a surcharge to use the operator's network. Such discrimination will be presumed to be anti-competitive and in breach of the Consumer Protection Regulations, in terms of limiting the choice available to end-users. The anti-competitive or adverse consumer effects of a certain traffic management practice that adversely impacts the functionality of a certain application, such as a competing OTT voice service, could also be used by the Authority as evidence of a discriminatory traffic management practice, despite having a prima facie technical basis, unless a strictly temporary justification such as force majeure can be provided. While specialised services will not be presumed to be discriminatory, it is the responsibility of every operator to demonstrate that the specialised service in question is:

- not offered to the detriment of the availability or agreed quality of the IAS;
- optimised for specific content, services or applications, or a combination thereof as requested by the end-user;
- not usable or offered as a replacement for IAS;
- not used to circumvent these Guidelines.

29. Second, where a traffic management measure affects different types of content, services and applications in a way that does not discriminate based on their origin or the OTT provider, the measure would still need to be objectively justifiable in terms of pursuing a technical quality of service requirement and proportionate in terms of restricting the impact to that which is strictly necessary, including duration. If the measure is used to address congestion caused by certain services, the operator should be able to demonstrate that it reduces the adverse impact of such congestion on other services. On the other hand, operators should avoid blocking any service causing congestion or throttling it to the extent that would render it inoperable. If the measures are used in order to address a temporary congestion, they should be limited to the duration of the congestion. A minimum standard of IAS should always be ensured for all end-users and traffic management practices should not result in the downgrading of 'basic' Internet traffic, but rather in the upgrading of 'premium' traffic.

30. Third, in order to show that these criteria have been met, any reasonable traffic management measures would need to be transparent in terms of their availability in case of any ex-post review by the Authority, carried out at its discretion, and their accessibility for consumers, as reflected in the Consumer Protection Regulations.

31. Traffic management measures may include, in relation to certain content, applications or services one or more of the below:

- Blocking or restricting
- Slowing down, degrading or throttling
- Altering or interfering (e.g. adding advertisements to ad-free content).

- Offering premium treatment

32. Not all of these measures will warrant the same regulatory approach in a particular situation. The Authority has therefore drafted two lists to assist operators to make a decision on the acceptability of certain measures they may be considering. The Black List indicates measures that the Authority would presume to be in breach of these Guidelines. The White List indicates measures that the Authority would presume to be reasonable traffic management practices. The lists are indicative and are not meant to be exhaustive.

MEASURE TYPE	BLACK LIST	WHITE LIST
<p>Blocking or restricting content, applications and services</p>	<p>BLOCKING OF LAWFUL CONTENT, APPLICATIONS OR SERVICES</p> <p>Blocking of lawful content could involve, either based on the IAS contract or unilaterally, specific content, applications or services (e.g. a video sharing hub website), or apply generally for certain types of services (e.g. third-party VoIP by means of disabling certain IP ports).</p> <p>These and similar examples of blocking are not reasonable, unless strictly applied to illegal content that has been designated as such by a competent authority. This exception, unless specifically requested by a competent authority, should not cover all the traffic from content hubs, such as Facebook or Twitter, based on some of the accessible content being considered illegal.</p>	<p>BLOCKING OF SPECIFIC CONTENT SUCH AS AN URL THAT HAS BEEN CLEARLY DESIGNATED AS ILLEGAL BY A COMPETENT AUTHORITY</p> <p>In order for blocking of specific content to be lawful, the operator needs to rely on a specific written or verbal law enforcement order by a competent authority in Bahrain, referring to specific items such as a web page, an application, or one or more IP addresses.</p>

MEASURE TYPE	BLACK LIST	WHITE LIST
	<p>NETWORK-LEVEL AD BLOCKING</p> <p>Network level blocking or restricting of advertisement that are part of lawful content, application or service is not reasonable.</p>	
<p>Slowing down, degrading or throttling</p>	<p>SLOWING DOWN, DEGRADING OR THROTTLING SPECIFIC CONTENT, APPLICATIONS OR SERVICES</p> <p>Slowing down could be based on the existence or absence of a commercial or personal connection between the operator and the third-party OTT provider. For example, the Authority would deem it unreasonable if an operator prioritised the traffic from OTT providers who had partnership or similar commercial arrangements with the operator. The Authority would further deem it unreasonable if an operator slowed down the traffic from all OTT providers who did not have a partnership or a similar arrangement in place with the operator.</p>	<p>REASONABLE AND NON-DISCRIMINATORY TRAFFIC MANAGEMENT BASED ON CERTAIN CLASSES OF CONTENT, APPLICATIONS OR SERVICES DUE TO BANDWIDTH OR OTHER OBJECTIVE NETWORK LIMITATIONS, PROVIDED SUCH MEASURES ARE ADEQUATE, PROPORTIONATE AND TRANSPARENT</p> <p>If necessary for the functional and efficient access to services, allowing on a strictly non-discriminatory and non-arbitrary basis certain types of services, such as voice or video, before others, such as email or website browsing. To qualify as 'reasonable', the criteria of non-discrimination, including the lack of anti-competitive effects, adequacy, proportionality and transparency as explained in these Guidelines must be met.</p>

MEASURE TYPE	BLACK LIST	WHITE LIST
	<p>SLOWING DOWN, DEGRADING OR THROTTLING CLASSES OF- OR SPECIFIC CONTENT, APPLICATIONS OR SERVICES THAT COMPETE WITH THE OPERATOR'S OWN NON-IP SERVICES</p> <p>An operator would not be allowed to degrade content, applications or services that might compete, at the OTT level, with its own non-IP services. This would include, for example, OTT messaging services that compete with the mobile operator's own SMS, VoIP that competes with traditional PSTN voice telephony, or video that competes with the operator's non-IP television services.</p>	
	<p>SLOWING DOWN, DEGRADING OR THROTTLING CLASSES OF CONTENT, APPLICATIONS OR SERVICES THAT COMPETE WITH THE OPERATOR'S OWN SPECIALISED SERVICES</p> <p>This prohibition would apply if certain classes of OTT content, such as VoIP or VoD, would be interfered with in a way that would not discriminate within the same class of content, application or service, but would render this class of service intentionally inferior</p>	<p>PROPORTIONATE, NON-DISCRIMINATORY AND TEMPORARY SLOWING DOWN OF CERTAIN CLASS OF CONTENT, APPLICATIONS OR SERVICES IN CASE OF CONGESTION</p> <p>Proportionate and strictly temporary slowing down of a particular class of content, application or service in order to tackle network congestion. Such measures may specifically target a specific application or service within the class only if congestion is linked to such specific</p>

MEASURE TYPE	BLACK LIST	WHITE LIST
	<p>to the operator's own specialised services with whom such OTT services would potentially compete. While an operator would be allowed, at the end-user's request, to set up a virtual channel to provide better quality of service; manipulating OTT service availability on the remaining available bandwidth with the object or effect of creating a quality of service differentiation between managed and unmanaged services would be unreasonable. While an operator would be expected to prioritise technical requirements of specialised services, such as high-definition IPTV transmission, it is the operator's responsibility to ensure that such requirements do not interfere with the bandwidth for the IAS that has been agreed between the operator and the end-user over the same access link, or otherwise adversely impact content, applications or services provided via the IAS.</p>	<p>application or service due to exceptional circumstances, such as a cyberattack, or where temporary queuing is necessary in cases of specific major new software releases.</p>

MEASURE TYPE	BLACK LIST	WHITE LIST
	<p data-bbox="555 292 1249 435">ANY UNREASONABLE SLOWING DOWN, DEGRADING OR THROTTLING OF CLASSES OF- OR SPECIFIC CONTENT, APPLICATIONS AND SERVICES</p> <p data-bbox="555 512 1249 655">Any other slowing down, degrading or throttling of classes of specific content, applications and services that does not meet the 'reasonable' criteria of the White List.</p>	
<p data-bbox="188 919 495 946">Altering or interfering</p>	<p data-bbox="555 919 1249 986">ALTERING CONTENT INCLUDED IN THIRD-PARTY CONTENT, APPLICATIONS OR SERVICES</p> <p data-bbox="555 1034 1249 1217">Where an end-user is paying for internet access, altering or otherwise interfering with content, applications or services would be considered unreasonable. Adding advertisements to third-part ad-free content would be deemed unreasonable.</p>	

MEASURE TYPE	BLACK LIST	WHITE LIST
	<p data-bbox="555 288 1254 395">ALTERING ADVERTISEMENTS INCLUDED IN THIRD-PARTY CONTENT, APPLICATIONS OR SERVICES</p> <p data-bbox="555 448 1254 746">The general prohibition on altering third-party services equally applies to advertisement content. An operator cannot disregard the prohibition of content modification on the ground that content in question is an advertisement. Such behaviour may severely affect OTT business models and cannot be justified absent consent from the OTT third-party whose content is being modified.</p>	

Reasonable pricing practices

33. Tiered pricing implies that consumers whose consumption patterns require heavy data traffic are charged an extra fee for the extra traffic. By adopting this approach, operators charge add-on tariffs to consumers willing to use certain applications, thereby generating new revenue streams and recovering, at least partially, the revenue loss associated with growing Internet-based communications.
34. Different pricing tiers can relate to the use of managed or specialised services provided by the operator offering the IAS. As we point out in the context of traffic management measures, this type of tiered pricing is acceptable as long as these services do not adversely impact content, applications or services provided via the IAS.
35. However, the Authority could prohibit tiered pricing where an operator enters into a commercial arrangement with an OTT player to offer access to the OTT services as part of a package that would give it data allowance or speed and bandwidth preference over other similar OTT services. Not only could that constitute a vertical anti-competitive agreement, but it could also mean that the operator has taken advantage of the two-sided market structure at the expense of end-users paying for the IAS. Such a situation would be of particular concern where several operators entered into such deals with a limited number of OTT players. This could have as its object or effect a foreclosure of the market for one or more types of Internet services and applications. When evaluating whether agreement-based tiered pricing should be prohibited, the Authority may look at criteria such as whether the arrangement in question involves payment for priority treatment; whether it is exclusive or open to other similar content, services or applications providers and other operators; whether it favours affiliated content, services or applications providers; or how transparent it is.
36. With respect to 'zero-rating' by mobile operators, where certain OTT services are not considered part of a subscriber's standard data allowance, the TRA's general position is that such practices are acceptable. Zero-rating offerings should be operator-initiated and not the result of a commercial agreement reached with particular OTT providers, which is likely to be presumed by the Authority to be an anti-competitive vertical agreement.
37. Instead, zero-rating offers should reflect the desire of operators to promote their own IAS, through attracting users to certain popular OTT services; or the fact that certain OTT services may be very data heavy and yet indispensable for operators wanting to respond to end-user preferences. Since mobile broadband data access is less efficient and, therefore, costlier than fixed or Wi-Fi access, operators seek ways to optimise mobile data consumption without compromising the preferences of end-users. All of the above would be legitimate reasons to implement 'zero rating'.

38. However, the Authority would still expect operators to adequately manage situations where a consumer exhausts his/her general data allowance but would continue to be eligible to receive zero-rated services. First, operator policies on such practices would need to be transparent toward both the Authority and end-users. Second, any general data allowance would need to comprise a reasonable amount of data required for a mix of various online services, including web browsing, short video streaming, messaging and emailing. While an operator would not be expected to include regular movie streaming or long video calls, the general data allowance would have to enable functional mobile broadband access over the period of subscription duration. A merely symbolic allowance would not be acceptable. Third, any throttling measure would need to be proportionate and subject to prior warning in good time before the allowance has been fully used. The Authority would not recommend blocking entire traffic that is not zero-rated, and would instead recommend the slowing down of such traffic as a possible measure.

Supervision and enforcement by the Authority

39. In accordance with Article 53 of the Telecommunications Law of 2002, the Authority has the authority to supervise the implementation of these Guidelines, including requesting information and documentation relating to the procedures and practices of operators in relation to traffic management and pricing, as well as any other matters concerning the treatment of users.

40. Requested information may include the following:

- Technical details of how certain content or applications are handled by the operator's network or its IAS, including statistics and other measurement specifications generated by its systems;
- A detailed justification of any practice and associated details, such as the time period(s) during which such practices were carried out;
- Financial arrangements entered into with a provider of OTT services, such as revenue sharing agreements; or
- The provision of records detailing past practices and complaints received from users.

41. The Authority reserves the right to carry out its own tests on an operator's systems, in order to measure and monitor the provision of the IAS and/or the operator's compliance with these Guidelines. Such measurement and monitoring may be compared with any information made publicly available by the operator about the operation of its IAS.

42. In developing and enforcing these Guidelines, the Authority shall have due regard to the best practices and experiences in other jurisdictions.

43. The Authority shall also investigate any complaint that it receives about any breach of these Guidelines, in accordance with Article 72. Where a breach is confirmed, the Authority will take enforcement action as appropriate within the limits of its powers and duties.
44. Where an investigation is undertaken, or a complaint received, the onus is on an operator to be able to objectively justify its practices. The Authority will examine both the intended object of any measure or practice as well as its effect.
45. The range of enforcement actions that the Authority may take against a non-compliant operator or IAS could include the following:
- Order the operator to cease and desist the non-compliant practice;
 - Impose technical requirements or quality of service standards that the operator is required to meet within a specified time period;
 - Impose periodic financial penalties on the operator until it becomes compliant;
 - Order the operator to compensate users for past non-compliant conduct.
46. The Authority anticipates that enforcement action will generally be applicable to one or more specified operators. However, in exceptional circumstances, action may be imposed upon all operators in the market.
47. The Authority acknowledges and the Guidelines recognise that addressing the 'net neutrality' issue can involve achieving an appropriate balance between the interests of users and those of operators. From the operators' perspective, this will require an open and on-going dialogue with the Authority to enable it to be fully informed of anticipated changes in the procedures and practices of an operator with respect to certain matters arising from this guidance. Without such openness, the risk is that the Authority may be forced to intervene in ways that are more disruptive to the operator's business than would be the case if an operator had engaged with the Authority from the outset.