



Consultation on Draft QoS Policy and Draft QoS Regulatory Framework

Annex 4:

**Impact Assessment in Relation to the Quality of
Service Regulatory Framework**

Consultation Document

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Communications Regulatory Authority

Comments in response are due by 20th April 2014

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1 Introduction

With the ultimate objective to improve Quality of Service (QoS) for telecommunications services (including Internet services) in Qatar, the Communications Regulatory Authority (CRA) is issuing two draft documents which aim at better regulating QoS in Qatar:

- A QoS Policy which sets out the basis upon which the QoS offered by Service Providers will be measured and regulated by CRA. Its goal is to set policies, objectives and general principles to regulate QoS in Qatar.
- A QoS Regulatory Framework which sets how CRA is going to regulate QoS offered by Service Providers. Its goal is to define Key Performance Indicators (KPIs), targets, measurements methods, reporting and publication procedures, validation and audit approaches and enforcement procedures.

These two documents will impact the telecommunications market in Qatar. As a consequence, CRA needs to assess the impact of the measures and remedies proposed in these two documents. The present document assesses the corresponding impacts.

2 Objectives of the Impact Assessment

An Impact Assessment is an analysis of the likely effect of a new regulation or of a regulatory change. Such an analysis should help identifying regulatory options, and should establish whether regulation is likely to have the desired impact. An Impact Assessment analyses the impact of regulatory options on different stakeholders. The estimated costs and benefits of the different regulatory options are assessed for each type of stakeholder. A synthesis of the impact on the different stakeholders is provided in section 8.

3 Stakeholders impacted by the QoS Policy and QoS Regulatory Framework

The QoS Policy imposes specific obligations on Service Providers through the QoS Regulatory Framework. The following are the main obligations imposed on Service Providers in the QoS Regulatory Framework:

- Measuring KPIs¹;
- Reporting results of the measurements every quarter²;
- Making improvements in their network to meet established targets or paying penalties (through Performance Bond) if targets are not met³.

These obligations generate costs for Service Providers, which may decrease their profit margin or which they may pass on to their consumers through small price increases.

¹ See section 3 of the draft QoS Regulatory Framework (annex 2)

² See section 4 of the draft QoS Regulatory Framework (annex 2)

³ See section 4 of the draft QoS Regulatory Framework (annex 2)

For this QoS Regulatory Framework to be effective, CRA will also have to incur costs. Indeed, CRA will have to:

- Build the QoS Regulatory Framework;
- Publish an annual report on QoS;
- Review the documents published by Service Providers;
- Proceed with enforcement actions;
- Set up dedicated measurement campaigns and conduct specific studies on key QoS issues such as customer satisfaction studies.

Finally, consumers will also be impacted (better QoS but maybe higher retail prices as a result of increased costs for Service Providers).

4 Regulatory options for CRA

In the QoS Regulatory Framework document, CRA has justified why it intends to follow a regulatory approach for QoS consisting in measuring KPIs, in reporting results of the measurements and in following enforcement procedures when targets are not met. CRA could have followed other options. Three additional options in total have been identified by CRA:

- **Option 1:** “change nothing”. Under this option, QoS is regulated as it is now, i.e. with KPIs and targets listed in Service Providers’ licenses (around 30 for fixed services and 6 for mobile services). Fines can be applied in theory in case targets are not met. However, they do not apply in practice.
- **Option 2** is CRA’s proposed option in the QoS Regulatory Framework whereby Service Providers must measure KPIs, must report the results of the measures and must meet imposed targets (if not, Service Providers have to pay defined penalties through Performance Bonds or compensate end-users).
- **Option 3** is similar to option 2 but Service Providers are not financially penalized when targets are not met. In practice, this approach is in fact the same as option 1 because in practice, in the current situation, no penalties are applied. The only difference is the list of KPIs considered.
- **Option 4:** “remove all QoS requirements”. However, given the low level of competition in Qatar, this option is not considered as a realistic option for CRA and will therefore not be considered in the rest of the document.

For each option and for each stakeholder, estimated costs and benefits are assessed.

5 Impact on Service Providers

The obligations defined in the QoS Regulatory Framework apply mainly to all fixed and mobile Service Providers. For example no additional specific obligation is imposed on Service Providers

having Significant Market Power (SMP) only. The proposed regulation is therefore a symmetric regulation.

Estimating the cost of imposing QoS obligations on wholesale services is not relevant for this Impact Assessment. First because the number of wholesale offers is very limited today in Qatar. Second because the regulation of wholesale services QoS is the direct consequence of obligations to provide wholesale services and not the direct consequence of this QoS Regulatory Framework.

As a consequence, the impact on Service Providers is assessed for all Service Providers at the same time and for retail KPIs only.

5.1 Estimated costs for Service Providers

Three types of costs are mainly incurred by Service Providers as a result of the new QoS Regulatory Framework:

- Cost of measuring KPIs;
- Cost of reporting results of the measurements;
- Cost of making improvements in their network to meet established targets or paying penalties (though Performance Bond) if targets are not met.

5.1.1 Estimated costs of measuring KPIs

Under option 1, no additional cost will be incurred by Service Providers since option 1 is the status quo.

Under option 2, several KPIs have to be measured. It is not necessary to assess the estimated cost of measuring each KPI but rather to assess the estimated cost of the methodologies involved to measure a set of KPIs. Indeed, once a given, methodology has been put in place, the incremental cost of measuring an additional KPI on the basis of this methodology is very low. Indeed, a given methodology enables to measure several KPIs. Several methodologies are involved to collect data on QoS measurement:

- Methodology where data is collected by the ordering system or other administrative systems;
- Methodology where data is collected within the network from counters;
- Methodology where data is collected within the network from internal measurements;
- Methodology where data is collected using a specific test for mobile;
- Methodology where data is collected using a specific test for fixed.

For each of these methodologies, Service Providers can incur additional costs to acquire measurement equipment (“material cost”) or to purchase third party work (“third party cost”) or to hire staff to conduct the additional QoS requirements (“staff cost”). An assessment of these costs for each measurement methodology is proposed in the table below:

Table 1 – Estimated Material cost, third party cost and staff costs related to the measurement methodologies involved

<i>Per annum</i>	Estimated External costs (Material cost and third party cost) per annum	Estimated Internal cost (Staff cost) per annum
Data collected by the ordering system or other administrative systems	Equipment is already existing, but it may require modifications of existing implementations (see “staff cost”)	0.5 Full Time Equivalent (FTE) to implement the system and 0.5 FTE to collect the results of the measurement
Data collected within the network from counters	Equipment is already embedded in Service Providers’ systems but it may require modifications of existing implementations (see “staff cost”)	0.5 FTE to implement the system and 0.5 FTE to collect the results of the measurement
Data collected within the network from internal measurements	Equipment is already installed but it may require modifications of existing implementations (see “staff cost”)	0.5 FTE to implement + 1 FTE to collect (as this depends on the size of the network, this may be lower for smaller operators)
Data collected using a specific test for mobile	Assuming drive and walk tests conducted by third parties, the cost is in a range from QAR 1,000,000 to 3,000,000	Time required to supervise third party can be neglected
Data collected using a specific test for fixed	Assuming a campaign conducted by third parties, the cost is in a range from QAR 1,000,000 to 3,000,000	Time required to supervise third party can be neglected
TOTAL per annum	QAR 2,000,000 to QAR 6,000,000	QAR 630,000⁴

Under option 3, same estimated costs as estimated costs for option 2 would be incurred.

5.1.2 Estimated cost of reporting results of the measurements every quarter

Under option 1, no additional cost will be incurred because option 1 is the current situation.

Under option 2, Service Providers will have to produce reports every quarter. Preparing a report requires using the data collected at the end of the KPI measurement process and filling in the template used for reporting purposes. As a consequence, Service Providers will have to allocate staff to this task. It is estimated that one additional FTE will be necessary, i.e. a cost of QAR 180,000 per annum.

⁴ Assuming cost per FTE of QAR 15,000 per month

Under option 3, the same level of estimated cost will apply.

5.1.3 Estimated cost of making improvements in Service Providers' network to meet established targets or paying penalties if targets are not met

Service Providers have to comply with the targets set by CRA. Targets may require improving the networks. Network improvements generate obviously extra costs. It is extremely difficult to estimate the amount of extra cost incurred by Service Providers to meet the additional targets since it depends on each Service Provider network structure and network topology and actual investments in networks which are not precisely known.

If they do not comply with the targets, performance bonds of the Service Providers will be called in by CRA. As a consequence, the amount of performance bonds can be used as a first proxy to estimate the cost of making improvements in their network to meet established targets or be financially penalized if targets are not met.

Under option 1 and under option 3, this cost is null as fines do not apply.

Under option 2, if a Service Provider does not meet a target, it will have to pay QAR 30 000 per month for each KPI for which the target is not met⁵. There are around 300 targets imposed. It is possible that Service Providers will always meet all targets for all services because their current network and organisation provides very high levels of QoS. At the opposite, it is highly unlikely that Service Providers will not meet any of the targets since CRA believes that some are already achieved. As a consequence, assuming that:

- Service Providers meet only 30% of the targets, the annual charge to pay would be QAR 75,600,000⁶;
- Service Providers meet only 50% of the targets, the annual charge would be QAR 54,000,000⁷;
- Service Providers meet only 70% of the targets, the annual charge would be QAR 32,400,000⁸;
- Etc.

These values are maximum values since it is believed that network improvements would cost much less.

5.2 Estimated benefits

Service Providers will also benefit from the QoS Regulatory Framework since KPI measurement and reporting will enable to:

- Get a better understanding of the QoS delivered to end-users;

⁵ Other fines are planned by the QoS Regulatory Framework but their amount is much less limited

⁶ $100 \times 12 \times 30,000 \times 70\%$

⁷ $100 \times 12 \times 30,000 \times 50\%$

⁸ $100 \times 12 \times 30,000 \times 30\%$

- Compete on equal terms by providing objective comparison information between Service Providers in the market and therefore to support the transition of the telecommunications market to a higher level of competition;
- Stimulate customers' usage as they will be more satisfied from the services being provided.

Option 1 will not bring these benefits since existing KPIs are not sufficiently oriented towards end-users services while option 2 will.

Option 3 will provide the first two benefits but not the last since incentives to improve QoS will be too low.

5.3 Summary of estimated costs and benefits for Service Providers

<i>Per annum</i>	Estimated costs	Estimated benefits
Option 1 – Change nothing	No additional cost but bad understanding of QoS delivered to end-users and bad ability to compete	-
Option 2 – CRA's proposed approach	Minimum: QAR 2,810,000 ⁹ if Service Providers' network is at a level which is in line with requested targets (less than 0,1% of Vodafone and Ooredoo's revenues) Maximum: QAR 82,410,000 ¹⁰ if Service Providers' network requires significant improvements (less than 5% of Vodafone and Ooredoo's revenues) ¹¹	Better understanding of QoS delivered to end-users Higher usage, i.e. higher revenues
Option 3 – CRA's proposed approach without penalties	Between QAR 2,810,000 and QAR 6,810,000	Better understanding of QoS delivered to end-users

6 Impact on CRA

6.1 Estimated costs for CRA

Around 2 FTEs are currently working on QoS in CRA. The estimated cost under option 1 is therefore around QAR 360,000.

Under option 2, the QoS Regulatory Framework requires CRA to:

- Build the QoS Regulatory Framework;

⁹ Minimum costs of measuring KPIs + costs of reporting

¹⁰ Maximum costs of measuring KPIs + costs of reporting + costs of penalties (at 30% targets met)

¹¹ In the case of Qnbn, only around 10 KPIs are relevant which means that the impact will be much lower

- Set up dedicated measurement campaigns and conduct specific studies on key QoS issues such as customer satisfaction studies;
- Publish an annual report on QoS;
- Review the documents published by Service Providers;
- Proceed with enforcement actions when targets are not met (mainly conducted by CRA's legal department).

The budget associated with the building of the QoS Regulatory Framework is estimated at QAR 300,000 (CRA's staff working on the QoS Regulatory Framework plus technical experts' fees plus consultants' fees). Assuming the proposed QoS Regulatory Framework will be in place over 5 years¹², the annual estimated cost will be around QAR 60,000.

Dedicated measurement campaigns and specific studies on key QoS issues are expected to cost between QAR 2,000,000 and QAR 10,000,000 per annum depending on the intensity of studies and campaigns required.

Finally, publishing an annual report on QoS, reviewing the documents published by Service Providers and proceeding with enforcement actions should require between additional 2 or 4 FTEs, i.e. an additional estimated cost of between QAR 360,000 and QAR 720,000 per annum.

These estimated costs will be the same with options 2 and 3.

6.2 Estimated benefits for CRA

Thanks to the QoS Regulatory Framework, CRA will better achieve the role it has to achieve as set out in article 2 of the Telecom Law and especially:

- “enhancing the telecommunications sector’s performance in the State of Qatar through encouraging competition and fostering use of telecommunications services”;
- “increasing customers’ benefits and safeguarding their interests”;
- “encouraging sustainable investment in the telecommunications sector”;
- “ensuring that the regulation of the telecommunications sector remains in line with international rules”;
- “ensuring the orderly development and regulation of the telecommunications sector”.

In CRA’s view, these objectives are not fully met today (option 1) because:

- the quality expected by end-users has not been achieved and QoS obligations set in the licenses are not always met; and
- Qatar has important ambitions with regards to QoS.

¹² This is a very conservative assumption for the purpose of this Impact Assessment since CRA's QoS Regulatory Framework is expected to be in place for a much longer period of time

Also, they will not be met under option 3 because option 3 will not provide sufficient incentives to Service Providers to improve QoS.

6.3 Summary of estimated costs and benefits for CRA

	Estimated costs	Estimated benefits
Option 1 – Change nothing	No additional cost but objectives not fully achieved	-
Option 2 – CRA’s proposed approach	Between QAR 2,420,000 and QAR 10,780,00 per annum depending on the number of independent studies	CRA’s statutory objectives will be achieved
Option 3 – CRA’s proposed approach without penalties	Between QAR 2,420,000 and QAR 10,780,00 per annum depending on the number of independent studies	CRA’s objectives to increase investment and benefits to customers will not be achieved

7 Impact on end-users

7.1 Estimated costs for end-users

There is no cost for end-users under wither option¹³.

The Service Provider costs for Option 2 and for Option 3 have already been stated and even if they are passed on to end-users through higher prices, this does not need to be counted again as this would result in them being counted twice¹⁴.

7.2 Estimated benefits for end-users

End-users will enjoy many benefits from the QoS Regulatory Framework:

- Higher QoS;
- Better information to select a Service Provider;
- Better information to understand areas where QoS is not good.

If Service Providers do not conduct network improvement QoS will not be higher but end-users will be compensated for that up to an amount of maximum QAR 6 per year¹⁵.

7.3 Summary of estimated costs and benefits for end-users

¹³ It could be said however that bad QoS levels generate costs for business customers since they could lead to lost business opportunities

¹⁴ the additional costs for end-users could be between QAR 2,810,000 and QAR 31,000,000 , i.e. between QAR 0.5 and QAR 8 per year and per customer. See §5

¹⁵ Assuming 30% of targets met only

	Estimated costs	Estimated benefits
Option 1 – Change nothing	<ul style="list-style-type: none"> • Insufficient level of QoS experienced • Difficulty to assess QoS and to compare Service Providers 	No risk of increase in prices due to better QoS
Option 2 – CRA’s proposed approach	Between QAR 0.2 and QAR 7 per month and per customer only if Service Providers pass on to customers cost increases ¹⁶	<ul style="list-style-type: none"> • Higher QoS or compensation if targets not met • Better information to select a Service Provider • Better information to understand areas where QoS is not good • Potential financial compensation when targets are not met
Option 3 – CRA’s proposed approach without penalties	Between QAR 0.2 and QAR 0.6 per month and per customer only if Service Providers pass on to customers cost increases ¹⁷	<ul style="list-style-type: none"> • Better information to select a Service Provider • Better information to understand areas where QoS is not good

8 Conclusion on impacts

In light of this impact assessment, CRA is of the view that the estimated benefits expected from the QoS Regulatory Framework largely outweigh the estimated costs which should represent less than 5% of existing Service Provider revenues in the very worst case scenario (70% of targets not met while CRA believes many of the targets being imposed would be met today). Option 3 is similar to Option 2 but generate similar estimated costs while not sufficiently encouraging Service Providers to improve QoS levels in a context where competition is low.

The new QoS Regulatory Framework should increase QoS provided in Qatar but also provide much better information on QoS to end-users and therefore fill the gap between expected QoS and experienced QoS. This will also increase competition between Service Providers and provide Qatar with telecommunications infrastructure of very high standards.

The following table summarizes the impact on stakeholders:

¹⁶ Assuming 1 million customer per operator

¹⁷ Assuming 1 million customer per operator

	Option 1 – Change nothing		Option 2 – CRA’s proposed approach		Option 3 – CRA’s proposed approach without enforcement procedure when targets are not met	
	Estimated costs	Estimated benefits	Estimated costs	Estimated benefits	Estimated costs	Estimated benefits
Service Providers	No additional cost but bad understanding of QoS delivered to end-users and bad ability to compete	-	Minimum: QAR 2,810,000 if Service Providers’ network is at a level which is in line with requested targets Maximum: QAR 82,400,000 if Service Providers’ network requires improvements	Better understanding of QoS delivered to end-users Higher usage, i.e. higher revenues	Between QAR 2,810,000 and QAR 6,810,000	Better understanding of QoS delivered to end-users
CRA	No additional cost but objectives not achieved	-	Between QAR 2,420,000 and QAR 10,780,000 per annum depending on the number of independent studies needed	CRA’s statutory objectives will be achieved	Between QAR 2,420,000 and QAR 10,780,000 per annum depending on the number of independent studies	CRA’s objectives to increase investment and benefits to customers will not be fully achieved
End-users	Risk of insufficient level of QoS experienced Difficulty to assess QoS and to compare Service Providers	No risk of increase in prices	Between QAR 2,810,000 and QAR 82,400,000 per annum only if Service Providers pass on to customers cost increases. In this case, Service Providers impact must be reduced accordingly Otherwise 0.	Higher QoS or compensation if targets not met Better information to select a Service Provider Better information to understand areas where QoS is not good	Between QAR 2,810,000 and QAR 6,810,000 per annum only if Service Providers pass on to customers cost increases. In this case, Service Providers impact must be reduced accordingly Otherwise 0.	Better information to select a Service Provider Better information to understand areas where QoS is not good

9 List of acronyms

ETSI	European Telecommunications Standards Institute
FTE	Full Time Equivalent
ITU	International Telecommunications Union
KPI	Key Performance Indicator
CRA	Communications Regulatory Authority
QoS	Quality of Service
SMP	Significant Market Power