

TRA/0711/2440/600.
Hand Fax
19 JUL 2011
RECEIVED

Ref: LSC/TRA/1907/148
Date: 19th July, 2011

Mr. Mohammed Bubashait
General Director
Telecommunications Regulatory Authority
Kingdom of Bahrain

FAX: +973 17532125

SUBJECT: Lightspeed (LSC) Submission in response to the Public Consultation issued by the TRA regarding "the Position Paper on the development, implementation and use of bottom-up fixed mobile network cost models in the kingdom of Bahrain"

Dear Sir,

I am pleased to send to you Lightspeed's contribution to the public consultation mentioned here above.

Kind regards



Philippe Baudin
Chief Executive Officer

Lightspeed (LSC) Submission

In response

to the Public Consultation issued by the TRA regarding

**“The Position Paper on the Development, implementation and use of
bottom-up fixed and mobile network cost models in the Kingdom of
Bahrain”**

Lightspeed (LSC) welcomes the opportunity to participate in raising its comments and views regarding the Position Paper on the Development, implementation and use of bottom-up fixed and mobile network cost models in the Kingdom of Bahrain hereinafter referred to as ("Consultation Paper"), issued by the Telecommunications Regulatory Authority (TRA) on 19 May 2011.

LSC would like to express its appreciation for the time and effort spent by the TRA in order to identify and discuss the key features and principles to support the development, implementation and use of bottom-up cost models of fixed and mobile networks in Bahrain. LSC understands that the main purpose of this model is to determine the cost of supplying retail and wholesale telecom services. LSC, as well, understands that the TRA will build three cost models, one for mobile networks, one for fixed access network and one for fixed core network

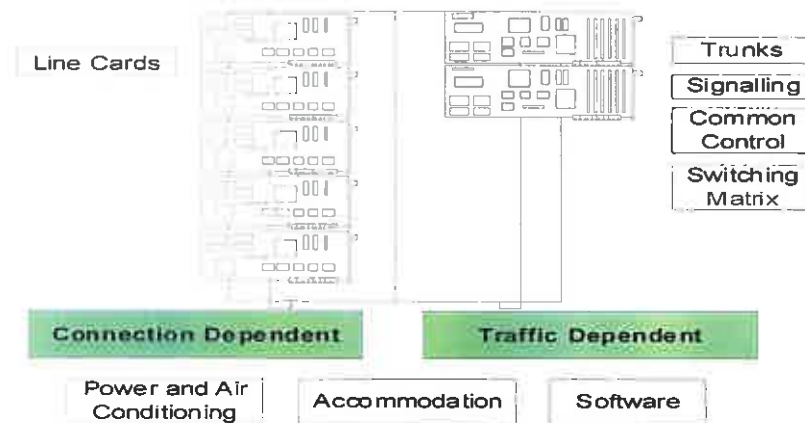
General Comments:

As a market player that is heavily affected by the final decision of the Consultation Paper, LSC would like to highlight its major concerns and hopes that the TRA reviews and adopts in consideration before the issuance of any regulations regarding the matter. Following are our General Comments:

1) Service definition: - LSC stresses that the cost of any telecom service is completely related to the service definition as well as the service measurement unit which should match the OLOs needs and usages. As an example, there is a huge chance that the implementation of local loop unbundling in the Bahraini market will fail because the cost of the services is very high and does not provide a better substitution for licensed operators than using the Bit stream product offered solely by Batelco in the Bahraini market. The expected result from implementing local loop unbundling should allow licensed operators to differentiate their products in terms of variety and price with the ultimate goal of enhancing competition among operators. But this is not the case in the Bahraini market where we have conducted a market study that analyzes prices provided by Batelco to obtain the unbundled local loop product and found that it would be nearly impossible for any new entrant or potential investor to survive in such market conditions. LSC is stating the duct service as an example for the importance of service definition and service measurement unit, by using the current definition the set charge of this service is 180 BD/M/Km. But if this service is offered in accordance to the OLOs needs like sub duct instead of full duct then the full duct can serve four sub duct and the service cost will drop to 1/4 of the current set cost (45 BD/M/Km).

2) Boundaries between Access and Core: - The boundary between access and core is defined by the driver associated with the elements of local switching "caused "by the two activities. Thus the volume of line cards connected to the customer's exchange line is determined by the numbers of customer lines rather than the number of calls made they are known as the connection dependent". The traffic volumes drive the core network dimensions and they are known as "traffic dependent" elements of the local switch. The following diagram illustrates the local switch components.

Local Switch



The transit switches are all part of the core network costs. However, the treatment of remote concentrators (RSU) can be tricky. There are two types of devices that are often called concentrators. One takes customer dependent exchange lines in and concentrates the links to provide traffic dependent capacities into ports on the local switch. The other is a form of pair gain or line extension device. The local switches and the traditional forms of remote concentrators need to be divided in terms of cost between access and core, the access portion is highly dependant on the RSU type and the customer's volume actually connected to the switching (Line cards numbers & RSU).

The international benchmark shows that the percentage of local switch access portions is from 30% to 50%. For example in Jordan Hybrid LRIC the used percentage is 50% which represents the cost of Line cards, Line card racks, Line cards power supply, Line cards associated software...etc.

- 3) Market involvement: - In order to develop, share and validate these models, LSC understand that the TRA needs to involve the relevant operators but LSC stresses that OLOs in the telecom industry need to be involved in order to express their needs and their related remarks and comments. The OLOs involvements in developing the models will enhance transparency and TRA openness.
- 4) Regarding asset lives, asset price and asset price trends: LSC believes that the asset current value and the asset's cost trend should be obtained from more than one supplier and the cheapest one should be adopted.
- 5) Revenue share: - LSC urges the TRA to remove the revenue share from the mobile network interconnection services cost because this cost should be recovered from retail services only. The Fixed network end user should not contribute in the mobile revenue share cost recovery while terminating their calls on the mobile networks.

Specific Comments:

LSC would like to provide the following answers to specific questions raised in the Consultation Paper.

Q1- Do respondents agree with the Authority's preliminary view to implement both pure LRIC and LRIC+ approaches for services handled by the fixed core and the mobile networks? Please elaborate.

LSC agrees with the Authority's preliminary view to implement both pure LRIC and LRIC+ approaches for services handled by the fixed core and the mobile networks due to the followings:-

1. LSC understands that pure LRIC methodology is now increasingly recommended to be used in order to calculate the termination rates for both fixed core and the mobile networks. In year 2009 the European Commission recommends to use a pure LRIC approach in the specific case of termination charges.
2. Using pure LRIC in calculating termination charges for both fixed core and mobile networks will lead to an efficient settlement between the licensed operators, promote efficient service production & consumption, and minimize potential competitive market distortions.
3. If common network costs and corporate overheads are included in the calculation of termination charges, this can lead to cross-subsidies between fixed and mobile operators, so using pure LRIC will prevent such cross-subsidization.
4. Implementing pure LRIC approach alone will lead to the irrecoverable of joint, common network and corporate overhead costs. While if the Authority implements pure LRIC for specific services (Like call termination) and implements LRIC+ for the some interconnections (Leased Line and Broad band services) as well as retail services; this will assure the recovery of the licensed operator common and overhead cost from other services.
5. If the costs of call termination and call origination are different due to implementation of pure LRIC for call termination and LRIC+ for call origination then this can be justified because the call origination is a customer choice service while the call termination there is not any choice for the customer but he is obliged to terminate his call on a monopolized intended network.

Due to above elaboration LSC supports the Authority's preliminary view, and believe that it is necessary to implement the LRIC+ approach at a minimum in the cost model to ensure overall cost recovery and to implement pure LRIC approach in the fixed and mobile core networks for several services such as call termination (as it is in Europe). In the fixed access network, the increment is defined as the whole access network and the Authority is obliged to apply a unique LRIC.

Q2. Do respondents agree with the Authority's preliminary view to implement both the required capacity and the Shapley-Shubik allocation methods for joint and common network costs in the bottom-up models? Please elaborate.

LSC agrees with the Authority's preliminary view to implement both the required capacity and the Shapley-Shubik allocation methods for joint and common network costs in the bottom-up models due to the following elaborations:-

1. LSC understands that telecommunications networks are commonly used to convey traffic (Voice or data traffic) and those networks are dimensioned (Designed) to support the traffic in the busy hour and because many costs are traffic sensitive that is justifying the usage of capacity allocation approach which allocates common and joint costs based on the capacity used by each telecom service at the busy hour.
2. LSC believes that a cost causation principle should be respected while allocating network common and joint costs on to different services and using of the capacity allocation approach conforms to the principle of cost-causation.
3. LSC assures the Authority that using the capacity allocation rule may have sometimes some drawbacks in some specific cases. For example, with the required capacity allocation rule, the voice service may be allocated a very small share of common network costs because it uses much less capacity bandwidth compared with other services. Therefore, the voice service may bear very low costs, which could contrast with the value of the voice service as perceived by market players and consumers. In such a case, the Shapley-Shubik allocation rule may provide a more appropriate outcome.
4. Shapley-Shubik allocation method is setting the cost of a service equal to the average of the incremental costs of the service after reviewing every possible order of arrival of the increment and this guarantees that the cost allocated to a service is lower than its stand alone cost.
5. Shapley-Shubik allocation method has been considered and implemented by some regulators (Such as ARCEP in France & ComReg in Ireland) and can provide useful insights.
6. Although the capacity allocation approach implementation is easily and traditionally used in telecommunications but there is a risk that the cost allocated for some services might be higher than its stand alone cost and this justify using Shapley-Shubik allocation method for such services.

Q3. Do respondents agree with the Authority's preliminary view to allocate un-attributable costs (non-network common costs) on the basis of the EPMU approach? Please elaborate.

LSC agrees with the Authority's preliminary view to allocate un-attributable costs (non-network common costs) on the basis of the EPMU approach in the bottom-up models but it has the following reservations and elaborations:-

1. LSC would like to draw the Authority attention that in case of implementation of pure LRIC approach for some services handled by the fixed core and the mobile networks (Like call termination) then there is no need to allocate any type of common cost on those services' cost.
2. LSC understands that EPMU approach is allocated on each service (In case LRIC+ is implemented) a share of the common costs in proportion to that service's share of total attributable costs, EPMU approach is relatively simple to implement but it does not take into account efficiency considerations.
3. Due to what mentioned in point 2 above and because the alternative method (Ramsey-Boiteux pricing) is difficult to be used in estimating and allocating non-network common costs then LSC recommends to use ABC methodology, as much as they can, to allocate all possible non-network common cost which are retail attributable costs and to keep the percentage of the EPMU within 5% to 12% in order to minimize the consumption-distorting effect of raising prices too much above marginal cost. As a benchmark Jordan estimates EPMU by 6% for both fixed and mobile network while the TRC of Jordan apply Hybrid TSLRIC+ model for interconnection charges calculation.

Given the empirical difficulties associated with Ramsey pricing, and that the EPMU approach is widely used for allocating un-attributable. Therefore, LSC agrees with the Authority to allocate un-attributable costs (non-network common costs) on the basis of the EPMU approach but to keep EPMU within 5% to 12% in order to avoid taking in to account the inefficiency considerations.

Q4. Do respondents agree with the choice of the scorched node approach for bottom-up cost models? Please elaborate.

LSC agrees with the choice of the scorched node approach for bottom-up cost models and it has the following reservations and elaborations:-

1. LSC understands that for both the mobile and fixed networks the nodes location (Base station location as well as switching) faces technical and administrative constraints that cannot be easily modeled, so choosing a scorched node approach means keeping the existing exchange locations as an input for the model which simplifying the model requirement of the network redesigning.
2. LSC believes that designing an optimal network topology is a pre-request for a bottom-up LRIC modeling implementation which is by all means not a straightforward task, and because the existing network topology is built after a demographic, geographic, and technical consideration has been studied so for feasibility reasons, it is appropriate to take the existing network topology as the starting point for the cost allocation and cost reevaluation process.
3. The scorched node approach is often preferred and followed as a key model's principle by many regulatory bodies all over the world and it implies that the existing points of presence are maintained but that does not mean not to optimize existing technologies and their network element components quantities in order to be consistent with efficient competitor one.
4. Retaining the location of the existing nodes does not necessarily mean that potential inefficiencies should not be addressed. LSC like the ERG recommended that inefficiencies should be eliminated even if the scorched node approach is chosen which may involve changing the number or types of network elements that are located at the nodes to simplify and decrease the cost of the switching hierarchy.

For the reasons exposed above, LSC is with the Authority's preliminary view that the scorched node approach should be used for both fixed and mobile models but under a condition that the inefficiency is eliminated in accordance with best practices. For example each node network element contents should be optimized to match the node demand and any excess of the node network element contents should be eliminated.

Q5. Do respondents agree with proposed approach for mobile network cost modelling, and in particular the generic operator? Please elaborate.

LSC partially agrees with proposed approach for mobile network cost modelling, and in particular the generic operator and it has the following reservations and elaborations:

1. Price of assets: - LSC believes that when implementing the bottom-up fixed and mobile network cost models the asset values of each operator should be reevaluated to be the current values of the asset or the modern equivalent replacement value (MEA) of the asset after removing the inefficiency from each node site which related to network elements numbers and quantities.
2. The Authority should not be relied on information provided by operators related to the asset current value, OPEX, and local engineering rules. But instead the Authority should bring the current replacement values of the existing asset after eliminating the inefficiency from a creditable supplier, and for the OPEX the international best practices should be applied (5% of the current asset value can be considered as OPEX). Authority can collect relevant data from operators for the sake of comparison and he can use it as long as it is reasonable.
3. LSC is with modeling existing operators' profiles which enables costs differences that may exist between operators and the drivers of those differences to be identified, and if the identified differences are not material or minimum, especially for mobile operators, then we are with symmetrical pricing by using the generic operator model.
4. There are a number of parameters to be chosen to model a generic operator. The most significant ones includes:
 - a. Operator's market share: we suggest it to be 33% for mobile
 - b. Network technology: we suggest 2G and 3G.
 - c. Choice for the backhaul: we suggest radio (Microwave).

Q6. Do respondents agree with the Authority preliminary position regarding the type of technologies (2G + 3G) to be modelled? Please elaborate.

LSC agrees with the Authority preliminary position regarding the type of technologies (2G + 3G) to be modelled because proven, available and lowest cost technologies should be used in the model as it enables to calculate efficient current costs.

The three mobile operators in Bahrain (Batelco, Zain, and Viva) have deployed both 2G and 3G technologies. Therefore it makes sense to model both 2G and 3G technologies.

Q7. Do respondents agree with the Authority preliminary position regarding the spectrum to be considered when modelling the costs of mobile networks? Please elaborate.

LSC agrees with the Authority preliminary position regarding the spectrum to be considered when modelling the costs of mobile networks, because the larger the spectrum bands assigned to an operator, the lower the number of base stations required and thus the lower the coverage cost. The 900 MHz frequency band possesses better signal propagation characteristics and allows better coverage than higher frequency bands such as the 1800 or 2100 MHz bands.

Q8. Do respondents agree with the Authority preliminary position regarding the treatment of license costs and frequency usage fees? Please elaborate.

LSC agrees with the Authority preliminary position regarding the treatment of license costs and frequency usage fees in its modelling exercise since it represents tangible cost to operators. But LSC does not agree with the Authority to consider the license fee costs as network costs rather than retail costs because license is needed for the whole operator services so LSC is with considering the license fee as a common cost. While the frequency usage fee is considered as a network cost because it relates to the operation of a network. The MVNO does not pay any frequency (Scare resources) usage cost but he pays license fee to be authorized to offer mobile telecom services.

Q9. Do respondents agree with the Authority preliminary view regarding the type of technologies to be considered when modelling the costs of the fixed core network? Please elaborate

LSC agrees with the Authority preliminary view regarding the type of technologies to be considered when modelling the costs of the fixed core network, because the new entrant will invest on the pure NGN without Media Gateway which considered the most forward-looking network as it implicitly assumes that there are no longer PSTN networks as well as it gives a picture of longer term costs.

Q10. What is the respondents view on the type of fiber architecture and technology that should be modelled for the NGA? Please elaborate and formulate substantiated alternative proposal if necessary.

LSC agrees with the Authority preliminary view on the type of fiber architecture and technology that should be modeled for the NGA. Our view is that fiber topology modeled should be prima facie the topology that is likely to be deployed in the medium term which should based on a point-to-point (P2P) architecture.

P2P architecture provides a dedicated fiber pair to each end-user without the need to employ splitters and share capacity in the access network, which is a future-proofed, better accommodate future growth in bandwidth demand, and provides more flexibility in terms of competitive access which is easier to unbundle.

The Authority therefore considers that the cost model for the fixed access network should at least cover P2P FTTH architecture.

LSC argues the Authority to model the cost of a copper network along with the cost of FTTH with P2P architecture.

LSC urges the Authority to provide fiber access to end user by the lowest charges which can be calculated by following two scenarios:

1. First scenario whereby the FTTH network is deployed as a stand-alone network (no sharing with existing infrastructure).
2. Second scenario where the FTTH network is built as an overlay of the current copper network (existing ducts and trenches will be shared for both copper and fiber cables).

Q11. Do respondents agree with the Authority's preliminary view on proposed yearly approach to network dimensioning optimization? Please elaborate

LSC agrees with the Authority's preliminary view on proposed yearly approach to network dimensioning optimization, and it has the following elaborations:-

1. The yearly approach includes a forward looking view by taking into account traffic growth forecasts and accordingly estimates the yearly number of assets without taking into account what was previously built.
2. By using this approach the cost obtained is close to the efficient cost incurred by new entrants, which produces a better build or buy signal to the new entrants.
3. As Bahrain is still a growing market the yearly approach would lead to similar results as with the historical approach, but using the yearly approach optimization method will lead to flexible and better adapted to sensitivity analysis because it does not depend on the availability and accuracy of historical data which is insuring easily workable models for both the Authority and the relevant operators.

Q12. Do respondents agree with the list of services to be considered in the bottom-up cost models? If there is any service requiring significant capacity that is not listed above, please specify it.

LSC agrees with the list of services to be considered in the bottom-up cost models and it specifies in the following table some services which are not mentioned by the Authority (Especially the services which are shaded in the below table:-

FIXED NETWORK

1) Access Services

PSTN/ISDN line access

Asymmetric Digital Subscriber Line broadband access (ADSL shared & naked)

Wholesale Digital Subscriber Line service (WDSL)

All Bit stream service (Copper) all options (DSLAM, REGIONAL, IP)

Unbundled Metallic Path Line (UMPL) OR (LLU) {FULL & SUB}

Co-location space at the MDF or Shelter in the yard

Wholesale FTTH broadband access service

Bit stream service (Fiber) all options (DSLAM, REGIONAL, IP)

FTTH broadband access

Dark fiber

Duct rental & Sub duct rental

Accessing Customer services & Inquiry services

All Other Associated Services (Like Air-conditioning, Electricity, Fire fighting ...etc)

2) Leased lines (Measured by E1 & Multiple of E1 like DS3, STM1 ...etc)

LAN Connect (managed traffic)

IP-VPN

Local leased circuits for retail (Business)

Wholesale MPLS based leased line service.

Local & National leased circuits for OLO (CAT& LLCO), Backhauling included

Signaling link service (for ISI/CSI)

Customer Sited Interconnect link service (CSI)

In-Span Interconnect link service (ISI)

3) Interconnection (cost per unit)

PSTN/VoIP call transit service

PSTN/VoIP call termination service from fixed line (single or double tandem)

PSTN/VoIP call termination service from mobile line

International inbound calls to Batelco PSTN/VoIP line

4) Voice call (cost per unit)

PSTN voice/VoIP off-net to fixed

PSTN voice/VoIP off-net to mobile

PSTN/VoIP voice on-net

PSTN/VoIP call to voice mail

PSTN/VoIP voice off-net to international

5) Other

Inter-operator transit access service

Conveyance of emergency call from PSTN/VoIP

PSTN/VoIP voice free phone origination service

Carrier selection and pre-selection services

MOBILE NETWORK

1) Voice call (cost per unit)

Mobile voice off-net to fixed & to mobile (Call Origination)

Mobile voice on-net

Mobile call to voice mail

Mobile voice off-net to international

2) SMS (cost per unit)

3) MMS (cost per unit)

4) Mobile broadband (Measured by G Byte down load)

5) Interconnection (cost per unit)

MMS terminating access service

SMS terminating access service

Mobile terminating access service

International inbound calls

6) Other

MMS origination service

SMS origination service

Mobile voice free phone origination service

Conveyance of emergency call from mobile

Conveyance of inquiry and customer services from mobile

LSC would like to stress that the 3G services is charged like the 2G services.

Q13. Do respondents agree with the Authority's preliminary view on the treatment of OPEX in the bottom-up cost models? Please elaborate

LSC disagrees with the Authority's preliminary view on the treatment of OPEX in the bottom-up cost models and it has the following elaborations:-

1. Calculating operating costs based on the operators' actual costs (top-down approach) is in contradiction with the bottom-up modeling approach and this means that the OLOs will be obliged to pay for the dominant operator's inefficiency cost.
2. Calculating operating costs based on the operators' actual costs (top-down) with efficiency adjustments and removal of irrelevant costs (Like removal of early retirement cost and basing the network operating cost upon the number of faults in the network) will not lead to an efficient operator cost because the early retirement cost is not a regular process and the high number of network faults is an indicator for inefficient cost due to fault repetition. The higher the number of faults, the higher the operating costs will be. By using

the dominant top-down cost and adjust it as mentioned above this means that the bottom-up model is becoming a hybrid model.

3. LSC is with conducting a bottom-up calculation. For example, this can be carried out by:
 - a) Using percentages provided by suppliers whom often provide estimates of the annual operating costs expressed as a percentage of the investment (Asset current values) OR
 - b) Conducting a benchmark of the OPEX mark-ups (Percentage of the current asset values) used by regulators in other countries. The OPEX cost as a percentages which used by Jordan TRC while applying Hybrid TSLRIC+ are ranged from 5% to 8% so LSC urges the Authority to use the OPEX mark-ups (Percentage of the current asset values) used by Jordan TRC.

Q14. Do respondents agree with the Authority's preliminary view to implement tilted annuities or adjusted tilted annuities in the bottom-up cost models? Please elaborate

LSC agrees with the Authority's preliminary view to implement tilted annuities or adjusted tilted annuities in the bottom-up cost models due to the following elaborations:-

1. One of the key factors to be achieved when calculating the dominant CAPEX cost, which supposed to be beard by new entrants, is to ensure that the two entrants buying the same assets but at different point in time will bear similar annuities. This is a key feature of economic depreciation (Tilted annuities or adjusted tilted annuities) which in theory capable of sending perfect build or buy signals which is not the case for accounting depreciation.
2. In order not to distort the market there should be an insurance of a smooth transition when the asset is replaced which means that the calculated annuities should lead to no significant cost differences for operators investing in the same asset but at a different point in time.
3. Tilted annuity is preferable because it allows a smooth evolution of annual cost despite price changes and despite investment cycles and it evolves without the discontinuities which are one of the main drawbacks of the HCA, CCA-OCM and CCA-FCM depreciation approaches.
4. In the case of FTTH deployment the expected number of FTTH users will likely be low at the beginning but can be expected to be high in the medium and long term which needs to stabilize the annuity per unit of output and keep it stable irrespective of changes in the market value of the asset. This can be achieved using an adjusted tilted annuity which deals perfectly with the increasing/declining levels of output.

Q15. Do respondents agree with the Authority's view that economic asset lives should be used in bottom-up models? Please elaborate.

LSC agrees with the Authority's view that economic asset lives should be used in bottom-up models because estimated asset life of an asset is too short compared to its useful economic life. Accordingly using accounting asset life will lead to high depreciation charge and resulting price will be overestimated. As regulatory bodies need to send appropriate economic signals to the market this should require amending accounting asset lives in order to reflect economic asset lives. The international practice is with using an economic asset life while implementing bottom-up cost model like what happens the British, the French, and the Irish regulator.

Q16. Do respondents agree with the Authority's preliminary view to exclude the working capital which is not related to the network activities or the provision of services?

LSC agrees with the Authority's preliminary view to exclude the working capital which is not related to the network activities or the provision of services while implementing the bottom-up cost model because this is the international practice. Including the working capital which is not related to the network activities or the provision of services will lead to overestimate the dominant cost as well as it will increase the inefficiency of the dominant which is against the LRIC modelling objectives.

Q17. Do respondents agree with the Authority's preliminary view that, except for working capital generated by CAPEX which is taken into account through depreciation formulas, the cost of working capital related to network OPEX should be excluded from the cost model unless operators can provide evidence of a significant and efficient level of such working capital? Please elaborate.

LSC partially agrees with the Authority's preliminary view that, except for working capital generated by CAPEX which is taken into account through depreciation formulas, the cost of working capital related to network OPEX should be excluded from the cost model unless operators can provide evidence of a significant and efficient level of such working capital. LSC is with excluding the working capital irrespective of its generation (Network or non-network CAPEX or OPEX) because this is the international practice as well as it will insure the omission of the dominant's inefficiency targeted by the bottom-up model introduction. More over opening the door to the dominant to provide evidence about its significant and efficient level of any generated working capital might change the LRIC model approach from bottom-up to hybrid one and it will foster the dominant non transparency towards OLOs.

Q18. Do respondents agree with the Authority's preliminary view that it may be appropriate in some cases to use gradients for the setting of regulated prices based on bottom-up models? Please elaborate.

LSC disagrees with the Authority's preliminary view and sees that it may be appropriate in some cases to use gradients for the setting of regulated prices based on bottom-up models because of the followings elaborations:-

1. The services supposed to be priced based on the most appropriate charging basis:

- a) Average usage charging bases. and
- b) Capacity usage charging bases.

If gradients are used (For example peak call prices or off peak call prices) knowing that price difference does not necessarily reflect cost differences this will be in contradict with the interconnection charges definitions (Each OLO should pay in accordance to its usage only) which might lead to under or over recovery of the dominant cost.

2. Accordingly LSC is against setting of calling prices with differences between peak and off peak calls but instead the Authority can use capacity based pricing which will enable the OLO to set their retail price in peak different than its off-peak price.

3. In the case of leased line LSC is against having gradient prices for different levels of quality of service because it can be difficult to identify significant cost differences.

4. LSC is with having gradient pricing of leased line according to capacity so that the OLO can have the cost of 1 M bps of 10 Mbps leased line different than the cost of 1 M bps of 1 G bps leased line or (Multiple of E1 like DS3, STM1, STM4 ...etc). And this can be justified because the leased line can have two cost drivers distance and capacity. So it will not follow that the cost-based price of a 1 G bps leased line should be 100 times

higher than the price of a 10 Mbps leased line but instead there will be a multiplication factor equivalent to cost differences between leased line capacities.

5. LSC agrees to use a gradient for leased lines only so that for example the cost per Mbps of a 1Gbps leased line is lower than the cost per Mbps of a 10 Mbps leased line and when designing gradients attention must be paid to ensure that overall revenues calculated on the basis of these prices recover total costs, no more, no less.

Q19. Do you agree with the Authority's preliminary view to model annual costs over a 4 to 5 year period notably to give visibility to operators and to enable the setting of regulated charges for multi-year periods? Please elaborate.

LSC agrees with the Authority's preliminary view to model annual costs over a 4 to 5 year period notably to give visibility to operators and to enable the setting of regulated charges for multi-year periods because this will increase the market certainty and will give predictability to operators making their investment decisions. In telecommunications, asset lives are generally long, and as a result payback periods for investments are generally long. Consequently, operators need a medium-term view of how regulated tariffs can evolve. A bottom-up model calculating unit costs over several years can be very useful to offer this required visibility.

Q20. Do respondents have any comments and suggestions regarding the overall potential structure of bottom-up models that the Authority intends to develop?

LSC does not have any comments or suggestions regarding the overall potential structure of bottom-up models that the Authority intends to develop except the followings:-

1. Cost allocation: The cost allocation especially for the fixed access network is not clear because we do understand that the routing factor is allocating the cost in case of mobile network and fixed core network but in the case of fixed access we suggest to the Authority to use the service matrix which states the network elements used by each service and the frequency of usage.
2. The overhead cost is not clear. LSC draws the Authority's kind attention that the international best practice uses a mark-up of maximum 12% to represent the common (Overhead) cost. In Jordan for example it is only 6% for the fixed network and 8% for mobile (Efficient operator).
3. The Access services need to be redefined because the current cost of those services is not accepted and the services defined in a way to serve the dominant favors.
4. The Authority supposes to issue a manual and guide explanation for each model.

Q21. Do respondents agree with the anticipated timeline for the development and implementation of the bottom-up cost models? Please elaborate.

LSC agrees with the anticipated timeline for the development and implementation of the bottom-up cost models and it urges the Authority to complete the models during the 4th quarter of 2011 because the current services prices does not help the OLOs to invest neither to diversify and differentiate their services.

Q22. Do respondents agree with the key steps described in sections 6.1, 6.2, and 6.3 anticipated by the Authority for the development, implementation and validation of bottom-up cost models? Please elaborate.

LSC agrees with the key steps described in sections 6.1, 6.2, and 6.3 anticipated by the Authority for the development, implementation and validation of bottom-up cost models but it have the followings comments:

1. Data collection: in case any operator does not supply the Authority with the required data at a required time limit then LSC suggests that the Authority should not delay the project by waiting for such data but instead the Authority should use data from international benchmark instead of the not received data or apply the generic model output as a charges for the operator who denied to send the needed data during the time limited by the Authority.
2. Model granularity: LSC would like to draw the Authority's attention about the granularity of the network needed data which will help the Authority to remove the inefficiency of all specific operator models.
3. Asset current price: the Authority should obtain the asset current value and the asset price trend from more than a supplier and the use the cheapest one price in order to guarantee the removal of the inefficiency of the intended operator.
4. LSC understands that the scorched node approach means that the operator is efficient in choosing the number of node sites but the number of equipment in the same site should be subjected to re-engineering and re-dimensioning which might lead to a reduction in the number of nodes (Nodes existing at the same sight) as well as number of network equipments in the same node.
5. The generic model usage, development, implementation and validation suppose to be more clarified by the Authority.
6. The Authority might need the Asset register and the Account ledgers from the relevant operator (Batelco, Zain, and Viva).

Q23. Do respondents agree with the proposed strategy to involve relevant operators (Batelco, Zain and Viva) in the development and validation of the models? Please elaborate.

LSC agrees with the proposed strategy to involve relevant operators (Batelco, Zain and Viva) in the development and validation of the models. But at the same time LSC urges the Authority to give the OLOs (Other than Batelco, Zain, and Viva) the same involvement opportunity given to Batelco, Zain, and Viva in order to prove the Authority transparency, fairness, openness, and a non discriminatory dealing as well as to have an opportunity to hear the whole market players remarks in all model development, implementation and validation stages.

Q24. Do respondents have any comments regarding the above discussion? Please elaborate.

LSC agrees with the Authority's above discussion regarding the different standard approaches usage and important of those standards. But LSC would prefer if the Authority clarified the usage of each specific model and the usage of the generic model.

In some countries like Jordan the symmetric pricing is used and the model which defines this symmetric pricing is the generic one so LSC urges the Authority to consider the use of symmetric pricing in Bahrain especially if

there is no tangible difference between the relevant operator's charges (Cost of Batelco, Zain, and Viva services).

Q25. Do respondents agree that consideration should be given to setting access and interconnection prices over a medium-term time horizon such as 3 years? Please elaborate.

LSC agrees that consideration should be given to setting access and interconnection prices over a medium-term time horizon such as 3 years because this will lead to create greater certainty and stability for all market players and enabling the new entrants in making investment decisions. In addition setting access and interconnection prices over a medium-term time horizon such as 3 years is becoming an international practice.

Q26. Do respondents agree that in some cases, when there is a significant gap between service costs calculated today and before (due for example to the move from a top-down cost model to a bottom-up cost model), the use of a glide path might be appropriate to move from existing prices to the appropriate cost-based level? Please elaborate.

LSC partially agrees that in some cases, when there is a significant gap between service costs calculated today and previously (due for example to the move from a top-down cost model to a bottom-up cost model), the use of a glide path might be appropriate to move from existing prices to the appropriate cost-based level due to the following confidences:

1. LSC believes that there is a need to define the meaning of "considerable difference between existing rates and bottom-up cost-oriented rates" and suggests that this difference is considerable if the current charges are dropped by more than 30% due to bottom-up modelling.
2. So it may be appropriate to consider the use of a glide path as a transitional mechanism towards the appropriate cost-based level only when the difference is considerable (More than 30%).
3. LSC is convinced that using the glide path will be helpful in order not to distort the market but on the other hand LSC believes that the use of glide-paths also extends the period during which rates remain above cost and thereby defers the gains in consumer welfare that arises from cost-based prices.
4. LSC urges the Authority to consider what mentioned in point 3 above when considering the appropriate duration of any possible glide-path and it suggests the glide path period not to be more than 3 years.
5. LSC suggests that the glide path to start from the current prices after removing from it any revenue share contribution.