**LIST OF CONSULTATION QUESTIONS AND RESPONSES ON INFRASTRUCTURE SHARING FRAMEWORK**

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| **Questions** | **Responses from Stakeholders** |  | **Position of the Regulator (POTRAZ)** |
| ***Question 1*** | ***Do you agree with the general views which the Authority buys into regarding the benefits that may be realised if Infrastructure is shared in Zimbabwe? If not please provide reasons.*** |  |  |
| ***Responses*** | ***Computer Society of Zimbabwe***  ***Majority agreed with the general views of the Authority****.*  *The minority felt that there is lack of sincerity in the investment of newer technology by some of the MNOs. The MNO in power are the one who will dictate the pace at which we are going to get new technologies. Let us share the non-active infrastructure, if that works then we can hazard sharing of the active infrastructure.*  *Sharing may also increase risk through single points of failure. To illustrate: If all providers share the same duct or premise that is rendered unusable, all their clients go down. So there is need to plan for redundancies, which is an additional cost.*  *Some felt that as infrastructure is a national asset an independent body should be formed to install the passive infrastructure and this is shared by the operators. While government and the regulator may not have the capital to pay for the infrastructure, a private sector initiative might be able to finance this.*  ***Dandemutande***  *Yes we agree in principle with the benefits of infrastructure sharing but stress that the benefits to Zimbabwe may differ based on existing market structures and deployments to date.*  ***Econet Wireless***  *POTRAZ lists several benefits of infrastructure sharing for stakeholders, which Econet is well aware of in view of the fact that it already shares mobile base stations with other parties. While these benefits are theoretically sound, the benefits are stated as absolute when in fact a number of limitations and drawbacks also exist. We address each of these separately:*  *1. Benefits to operators: While we agree that infrastructure sharing may in some instances yield Capex and Opex savings for operators, the extent of these savings depends on the degree of regulatory intervention, and varies according to each operator’s current and future network infrastructure. Any requirement on an operator to augment the capacity of his towers, and then provide access to these towers at cost-oriented prices is only a benefit to all operators if there is reciprocity.*  *Econet is of the view that the most beneficial approach to infrastructure sharing for operators is in the case of the USF. Econet has contributed many millions of Dollars to the USF and Econet trusts that POTRAZ has similarly collected USF contributions from other operators. The USF has provided some infrastructure for shared use and a greater focus on the judicious spending of the USF contributions could increase coverage in underserved areas – resulting in real benefits of sharing mobile base stations built with a common pool of money.*  *Crucially, in respect of reciprocity, we point out that Econet does currently share infrastructure on a commercial basis with a number of entities, including our direct competitor Telecel, while our requests to access NetOne’s sites, and our offers to share our own infrastructure with NetOne have gone unanswered. We are therefore in a position to understand that mandatory infrastructure sharing would bring no benefits to any of the operators, as these are either already doing it (Econet, Telecel), or not interested (NetOne).*  *Finally, a significant reduction in investment and capital expenditure could also happen in a more radical and unintended fashion, with negative consequences for the market: forcing Econet to share its future towers could undermine our business case for roll-out in new areas which are from the start barely profitable, leading us in the extreme cases to reconsider the deployment altogether.*  *2. Benefits to consumers: It is Econet’s submission that service-based competition does not increase coverage or promote innovation. Econet is of the view that coverage will not increase from the moment that the underlying passive infrastructure is shared. Rather, this creates a bottleneck whereby failure of the infrastructure will lead to the suspension of service for all operators using it (see the example in our submission above regarding power at a mobile base station). Such potential for failure would not be the case if infrastructure-based competition had been in place.*  *It is uncertain that the pace of network roll-out could be accelerated with infrastructure sharing. This is conditional on (i) ensuring that negotiations for sharing will be faster than deploying one’s own infrastructure and (ii) POTRAZ having the capacity and capability to mediate and arbitrate in a timely manner the inevitable disputes that will arise from sharing.*  *While we acknowledge that consumers should theoretically be able to benefit from more choice (of provider, and of services), we are concerned that relying on common infrastructure generally does not result in innovation and the consumer choice may in fact reduce. In addition, the possible reduction in the cost of services are in our view unlikely and this possible reduction would have to be properly analysed as Capex savings are likely to be negligible on a per subscriber per month basis. Finally, we re-iterate that the risk posed by undermining the business case for roll-out in new areas (described in paragraph 1 above) could penalise potential consumers rather than benefiting them.*  *3. Increased competition benefits: Econet notes that unlike certain other claimed benefits, the Consultation Paper acknowledges that increased competition may occur. However Econet is of the view that this possible benefit will not occur in Zimbabwe as: (i) there is no indication of “new players coming into the sector”, as this is not a situation created by infrastructure sharing, but rather through licensing new operators. It is only if POTRAZ was considering or had opened up the sector for additional license applications that this could possible be relevant; (ii) with no new entrants coming in, it is only existing operators who could potentially benefit and no clear indication why one operator should benefit at the expense of another? (iii) with regards “bottleneck facilities”, Guideline 11 already contains a mechanism to deal with this. Econet would have expected POTRAZ to implement Guideline 11 if this was a real concern, then Econet would expect POTRAZ to implement Guideline 11 and not wait for the process outlined in the Consultation Paper to take its course.*  *4. For dominant operators, a shift from coverage competition to service based competition: We share from the outset our surprise by the reference to dominance, considering that the Act, the Guidelines and the Competition Act do not contain a definition of dominance. In the absence of a legal or regulatory recognition of dominance it is not surprising that POTRAZ has not made any designation of dominance.*  *By agreeing on the leasing of sites on a commercial basis, Econet and Telecel have shown that the shift has already been made for the entire industry apart from NetOne and TelOne, as indicated by the 120 sites Econet currently shares with Telecel.*  *5. Risk reduction by sharing risk across multiple parties, having a strong bearing on cost of capital: We understand POTRAZ refers to the risk to investment. In the case of new infrastructure deployed using a common pool of money, such as the USF, we agree with this statement. Furthermore, it would only be true if operators committed to lease those facilities prior to construction, if facilities are constructed in the hope that they will be leased, the risk will be increased. We are further in profound disagreement with this statement when sharing is required post-deployment: on the contrary, the risk to any investment drastically increases if assets are to be shared, as the return on these assets is reduced.*  *6. Environmental benefits: Econet is concerned that the statements made are very simplistic. Fewer masts will mean that the masts that are constructed will have to be much larger than the individual masts deployed by operators. Masts will need to be many times larger than as currently constructed to bear the load of multiple operators. If operators deploy the same equipment, just on a single mast, there will not be any saving of power. It is also very unlikely that operators will share power, given the concerns about a single point of failure noted above. Accordingly, concentrating operators on a single infrastructure may have some limited benefit to residents further away from the infrastructure, but those close by will suffer noise and pollution that is many times higher than at a single operator facility. Likewise there could be some aesthetic benefits in having fewer masts, however those masts will need to be much larger with multiple antennae on each mast.*  *7. Regulatory benefits (expanding to uneconomical areas and speeding up universal access to services at a much lower cost): Econet has been a proponent of using the USF to help expanding network coverage. Unfortunately the USF has not been used to expand network coverage as efficiently as Econet had hoped and there are various sites that have been approved by the USF, however the funding has not been released. Even then…this does not however have a lower overall cost, but a lower cost per operator, assuming the deployment is done jointly and these costs are equitably shared. Econet is in favour of reducing the USF levy since it has contributed millions of Dollars over the years to the USF and this has been mostly un-used. Reducing or removing the USF can help Econet find a business case to expand in new areas, rather than through shared infrastructure. However, this would imply that POTRAZ believes joint deployments will be more successful and more economical than Universal Service mandated rollouts, which for the latter, see the infrastructure being shared by at least three operators.*  *8. Optimal usage of scarce finite resources: Econet disputes the suggestion that infrastructure sharing can lead to optimisation of scarce national resources. At the start, we do not agree that spectrum and rights of way are scarce, secondly the Consultation Paper does not take the notion of spectrum sharing any further and the examples given are of new spectrum allocations being shared. In addition, while it may be useful to share the costs of new civil works, as indicated above, this can lead to a brittle network with multiple single points of failure. A preferable approach is the construction of multiple divergent infrastructures and the leasing of those on commercial terms to ensure redundancy*  ***Liquid Telecoms ( Views similar to Econet Wireless)***  *POTRAZ lists several benefits of infrastructure sharing for stakeholders, which Liquid Telecom is well aware of in view of the fact that it already shares with other parties. A number of limitations and drawbacks exist in POTRAZ’s simplistic consultation. Moreover POTRAZ has failed to explain how the current regulatory environment accommodates infrastructure sharing.*  *The report prepared by Analysys Mason provides a summarised view of the current regulatory framework regarding infrastructure sharing. We would expect POTRAZ to review this in great depth before starting to suggest views on possible benefits of changing the regulatory environment. It must be noted that a changing and unpredictable regulatory environment is often cited as one of the most impeding factor for private investment in the telecommunication industry.*  *We address each of these limitations and drawbacks cited by POTRAZ below:*  *1. Benefits to operators: While we agree that infrastructure sharing can yield capex and opex savings for operators, the extent of these savings depends on the way sharing is implemented and varies according to each operator’s current and future network footprint. The consultation hints at making infrastructure “incumbent” operators responsible for augmenting the capacity of existing optical / wired backbone transmission network for sharing. The said consultation also stipulates that access should be provided at cost-oriented prices. In effect, this amounts to requiring operators that have invested in extensive infrastructure (such as Liquid Telecom’s fibre network) to deploy additional ducts and fibre strands for their competitors to access, for both existing and future assets. Doing so at cost-oriented prices removes at best our incentive to invest, and if the costs are erroneously allocated it puts our existing investment at risk. Instead, we would expect that the taxpayer-funded local loop network, until now enjoyed unilaterally by TelOne, would indeed be made available to other local operators at cost. This would be a fair benefit to operators given that the copper assets are a national resource that all Zimbabwean operators should be able to use and that much of the asset value will already have been recouped by TelOne. Moreover, it is not certain whether a cost-orientation on Liquid Telecom’s assets would lead to a better access price: although Liquid Telecom’s prices are commercially agreed, they are indirectly based on a cost that is less than the hypothetical cost we would incur should we have to deploy a fully shareable infrastructure. Finally, a significant reduction in investment and capital expenditure could also happen in a more radical and unintended fashion, with negative consequences for the market: forcing Liquid Telecom to extend its planned investments in order to accommodate tenants – beyond those it already shares with – could undermine our business case for future roll-outs, leading us to reconsider specific deployments altogether.*  *2. Benefits to consumers: Assuming that some benefits to operators could be achieved, whether or not consumers benefit from infrastructure sharing is dependent on a number of factors. It is dubious that the service quality (such as continuous availability) could be improved with service-based competition, from the moment that the underlying passive infrastructure is shared. Rather, this creates a reduction of structural redundancy whereby failure of the infrastructure will lead to the suspension of service for all operators using it at once. This would not have been the case if infrastructure-based competition had been in place. Moreover, it is uncertain that the pace of network roll-out could be accelerated with infrastructure sharing. This is conditional on (i) ensuring that negotiations for sharing will be faster and more attractive (in terms of balancing risks and rewards) than deploying one’s own infrastructure and (ii) POTRAZ having the capacity and capability to mediate and arbitrate in a timely manner the inevitable (and lengthy) disputes that will arise from sharing. While we acknowledge that consumers should be able to benefit from more choice in theory (in practice choice is already available given Liquid Telecom’s existing approach to open access to its network), the reduction in the cost of services will depend on a complex balance between investment levels, risk perception (including regulatory risk) and possible commercial rewards (both in terms of increased number of customers and average revenues). We believe that consumers would benefit most by levelling the field between TelOne and other operators by unbundling the local loop.*  *3. Increased competition benefits: Sharing might increase competition in the geographical areas where it occurs, if the commercial arrangements are such that investments and rewards are properly balanced. We believe that infrastructure sharing of privately-invested assets must be made possible on a commercial basis only, to enable operators to recoup their investment while allowing service-based competition to flourish. Publicly-invested assets, such as the copper local loop, should be shared to increase competition.*  *4. For dominant operators, a shift from coverage competition to service based competition: We share from the outset our surprise by the reference to dominance, considering the absence of any dominance designation by POTRAZ. It is understood that in the Zimbabwe market, dominance could primarily be applied to TelOne, which has a monopoly over the copper network serving more than 300,000 premises, and over ADSL broadband provisioning. We agree that TelOne is failing to address demand considering the small proportion of copper subscribers which have an ADSL subscription. We note that Liquid Telecom does not compete for coverage, given its open-access network policy.*  *5. Risk reduction by sharing risk across multiple parties, having a strong bearing on cost of capital: We understand POTRAZ refers to the risk to investment. In specific situations, Liquid Telecom found that the terms of the sharing agreement can be commercially negotiated between collaborative operators. However the link that POTRAZ makes to cost of capital is unclear.*  *6. Environmental benefits: Regarding fibre deployments, they are either buried or use poles. Buried fibre does not pose any material environmental risk and several fibre routes can be laid without increasing this risk. Fibre on poles is usually ignored in the landscape, as it usually rides on existing high-voltage power lines (it does not add any visual element beyond the electricity network). Sharing mobile towers might reduce the visual impact, but we nevertheless point out that mobile co-location could be perceived as harmful to public health if radiation emissions are concentrated.*  *7. Regulatory benefits: Infrastructure sharing can sometimes justify investments in economically unviable areas, in particular in the context of using pooled funding. This does not however have a lower overall cost, but a lower cost per operator, assuming the deployment is done jointly and these costs are equitably shared. We note that this should be addressed by the universal access fund (USF), in particular the few shared facilities that have been sponsored in unserved areas by this fund. However, while Liquid Telecom continues to provide funds to the USF, the release of funds from the USF is practically inexistent. This is in turn is making Liquid Telecom’s other services more expensive and has no impact on service availability in underserved areas. We would like to obtain more information about POTRAZ’s plan for USF, given the comment suggesting a reduction in the USF levy. This would imply that POTRAZ believes that commercially-agreed joint deployments will be more successful and more economical than mandated roll-outs. The report prepared by Analysys Mason mentions a number of regulatory risks (see section 3.1) that should be investigated by POTRAZ.*  ***Makoni Rural District Council***  *Yes. As a strategy in telecoms infrastructure sharing provides efficiency in the operation of MNO’s and foster’s competition while preserving the environment which is viable and enables the economy to adapt the technological advances.*  ***NECF***  *Agree*  ***Netone***  *We agree with the general view.*  ***Telone***  *Tel.One agrees with the general views by the Authority on the benefits of infrastructure sharing (mentioned in the row below). However, there is need for clear guidelines on pricing and the infrastructure to be shared. The guidelines on pricing according to ITU are shown in Appendix 1, point (d),*    ***Views***  ***Benefits to operators-*** *infrastructure sharing provides opportunities for significant reduction in investment or capital expenditure.* ***Benefits to consumers*** *- infrastructure sharing benefit consumers by increasing the availability of telephony services,  accelerating the pace of network rollout. Increasing consumer choice and reducing the cost of services.*  ***Increased competition benefits-*** *Infrastructure sharing may stimulate competition by lowering the entry barriers for new entrants  thus increasing the possibility of new players coming into the sector.*  ***Risk reduction-*** *with infrastructure sharing, risk is spread across all sharing parties thus a substantial reduction is achieved.* ***Environmental Benefits*** *- site and mast sharing can substantially reduce the total.*  ***Regulatory Benefits*** *- Infrastructure sharing can help expand services for the reach of all including to seemingly uneconomical  areas and resettlement areas where people are sparsely populated and ARPU are low.*  ***Optimal usage of scarce finite resources*** *- Infrastructure sharing helps in optimal usage of scarce national resources, such as  spectrum resources and rights of way.*  ***For dominant operators*** *there will be a shift from coverage competition to service based competition.*  ***Telco***  *Yes , but implementation issues have to be clearly covered or laid out*  ***University of Zimbabwe***  *Yes we do agree with the above. Of course we would expect that the infrastructure sharing is also going to ensure that a proper network design is done to ensure business continuity.*  ***Zimbabwe Youth Investment Group***  *Yes in particular the environmental, regulatory benefits and optimal usage of scarce finite resources. In line with current MDG’s if these benefits are realised Zimbabwe will be able to 1. Ensure Environmental Sustainability 2. Improve Maternal Health through easier access to global information in rural areas and resettlement areas 3. Achieve Universal Primary Education through the access to the internet and other communication services in above mentioned areas. Further to this consumers on a national level will benefit from the availability of more services.* |  | The Authority notes that the majority is in agreement  with its views on the benefits of infrastructure sharing.  Concerns raised with regards to the issue of risk and  the need to plan for redundancies is noted. The  Authority will take measures to ensure this is addressed  Besides, we do not envisage a situation where all  Operators will share the same infrastructure.  We also agree that the benefits to Zimbabwe may  differ in view of our market structure and  deployments on the ground. However, we believe  that it is never too late to start exploiting any  possibility of sharing infrastructure wherever feasible  in order to exploit the full benefits arising therefrom.  On the view that the extent of savings on capex and  opex by operators that can accrue to operators if they  share infrastructure is dependent on the degree  of regulatory intervention and varies according to  operators’ current and future network plans, the  Authority does not fathom a situation whereby its  Interventions can end up increasing the costs of  service provision.  On the view that cost savings from infrastructure  sharing are only possible if it is done on a of reciprocal  basis, the Authority’s view is that this is not always the  case and it is very circumstantial. Each case will be  analysed on its merits.  On the view that the USF is the approach to  infrastructure sharing, the Authority’s view is that  it is only one avenue where infrastructure sharing is  being practiced to ensure that underserved areas are  served. We need a holistic approach so as to  fully exploit the sector and the nation’s network  effects for us to be able to make services affordable  to the generality of the population.  On reduction in investment and capital expenditure, as  possible impact of infrastructure sharing, the Authority  will not allow this to happen as it will ensure that  measures and incentives are in place to  keep the investment appetite alive. This can be done  through various incentives which can be offered to  encourage infrastructure development.    With regards to the uncertainty on the prospect of  Infrastructure sharing accelerating network roll out,  it should be noted that the essence of this consultation is to craft  a framework which ensures speedy and efficient  Infrastructure sharing. i.e to come up with obligations  for operators and the regulator aimed at facilitating  fast and efficient infrastructure sharing.  On the concern that consumer choice and innovation  may be reduced as a result of infrastructure sharing,  our position is that this will not be allowed to happen  as the regulator will be pro-active to such possibilities.  On the prospect of increasing competition as an  outcome of infrastructure sharing, our expectation is  premised on the fact that increased competition does  not only come about as a result of new players but also  comes as result of competitors being able to compete in  the same geographical areas. Besides, who says no  new operators are coming in??  Section 11 of SI 28 is not adequate for the Authority to  Facilitate effective infrastructure sharing- hence the  need for a comprehensive framework.  Whether defined or not defined in the Act, guidelines,  in any market there exists dominant operators. In  simple terms, these are operators who wield significant  market power such that if they “cough, the market  sneezes.”  The Authority does not see any impediments to  operators committing themselves to lease  infrastructure prior to construction. This is just a matter  of strategy on the part of any one of the licensed  operators.  How does sharing reduce the return on investment,  in particular if it is meant to reduce cost of service  provision?  The authority is not sure if sharing means bigger masts  and not stronger material to be used to construct the  masts. This issue is addressed at length in the  consultation document. The Authority is aware and will  consider each case as appropriate.  This is not a forum to discuss the USF. The USF is a  separate avenue where infrastructure sharing is in  practice. We would like to see infrastructure sharing  in other areas- a holistic approach.  The Authority maintains that spectrum and rights of  way are scarce finite resources in the economic sense  that these resources are limited against unlimited  human wants. This means we have to make sound  economic choices on how best they can be utilized by  all of us. In the case of rights of way, i.e. land, streets,  roads, waterways, tunnels e.t.c , they are limited and  use of them is generally constrained by municipality by-  laws. As such, it is often not possible to allow rights of  way to all operators hence the need to make sharing  obligatory.  We note the report prepared by Mason for Econet and  Liquid. We have perused it still maintain that we need  a comprehensive infrastructure sharing framework to  carry us forward to the post 2015 development agenda  Same as above.  The desired framework is expected to be all inclusive  and is not targeted at any individual operators. Same  conditions will apply across the board.  Same as above.  All sharing agreements will be done on a commercial  Basis within the guidelines to be provided by the  Framework and subject to approval of the Authority for  Purposes of checking against anti- competitive  Behaviour.  If it turns out that TelOne is a dominant operator, then  the agreed rules will also apply to it.  Same as above.  Noted. The regulator is alive to the potential harm on  the human body due to electromagnetic field  emissions.  As above. This is not a forum to discuss the USF.  Noted  Noted  Noted  Noted.  Noted  Noted  Noted  Noted |
| ***Question 2*** | 1. ***Do you agree with the above views on factors that may inhibit Infrastructure sharing? If not please provide reasons.*** |  |  |
|  | 1. ***In your view which of the above factors are possible impediments to infrastructure sharing in Zimbabwe and how best can they be addressed?*** |  |  |
| ***Responses*** | ***Computer Society of Zimbabwe***   1. Yes 2. Lack of a vibrant civil society and customer lobby group to push for sharing is an additional inhibitor. Operators might not be keen to invest in the rural areas if they have to share. To address this issue in rural areas it should not to mandatory but encouraged in order to facilitate growth.   ***Dandemutande***   1. *Yes. We agree in principle with the named factors that may inhibit infrastructure sharing.* 2. *These are the factors that we see as impediments to infrastructure sharing:-*   *Coverage as a competitive tool*  *Monopolistic tendencies, Operator asymmetry*  *Asset management model, Regulatory regime*  *(c) We are not in a position to be able to offer resolutions to these*  *impediments.*  ***Econet Wireless***  *POTRAZ has listed a number of factors that it considers to potentially inhibit infrastructure sharing. We provide our assessment of these below, noting from the outset that there is no empirical evidence of any of these factors being demonstrated in the Zimbabwean market.*  *First we would like to note one additional impediment not mentioned in the Consultation Paper: lack of financial pressure to share. The research commissioned by Econet (see the Analysys Mason paper attached) has suggested that even where regulation requires it, operators appear not to share where they do not feel a financial pressure to do so (e.g. because margins are high or the perceived benefits are too low). In this context we observe that NetOne is one operator in Zimbabwe that has chosen not to share, even though Econet has made numerous requests to share infrastructure. Therefore NetOne does not appear to have been subject to such financial pressure. This suggests that NetOne considers its taxpayer funding to be sufficiently plentiful, that cost saving and efficiency are not required.*  *1. Operators with coverage advantage are unlikely to voluntarily share: we do not consider there is a correlation between coverage and willingness to share infrastructure. As a matter of fact, evidence in the Zimbabwe market would seem to point to the contrary. Econet, has many towers, yet currently shares 120 towers with its competitor Telecel. However, operator NetOne, arguably with a smaller network footprint than Econet, has consistently refused to grant Econet access to its infrastructure, despite our numerous requests.*  *2. Monopolistic tendencies among big players: as the holder of the largest market share in the mobile market, Econet can only interpret this statement as being theoretically directed to it. We have not engaged in monopolistic behaviour and there has been no objective finding that we have and in fact, we currently share facilities (including mobile base stations) openly with other operators (although this offer has been consistently refused by NetOne).*  *3. Differences in technology and site quality between operators may inhibit sharing agreements: Econet agrees with this statement, particularly with regards existing sites, where the design of the infrastructure (particularly masts) may not allow for a large number of additional antennae to be installed, at a usable height while still allowing the site owner reasonable opportunities for expansion of its own network. For this reason, we are of the view that infrastructure access should be on commercial terms and not mandated.*  *4. Personnel issues may impede progress on establishing sharing agreements: Econet agrees that organisational culture may inhibit sharing and this is indicated by the difference in approach between Econet and Telecel (on the one hand) and NetOne (on the other). For the rest, as the Consultation Paper does not envisage the formation of a joint venture company, we are not convinced of the relevance of the remaining factors.*  *5. Infrastructure sharing needs a properly crafted asset management model: Reference is made to joint ownership, which seems not to be relevant here. While Econet agrees that legal and commercial issues must be addressed, we do not see this as a possible impediment but rather as the facilitator of appropriate access arrangements.*  *6. Regulations in place may not allow infrastructure sharing: Econet does not view that as an impediment in Zimbabwe. POTRAZ has developed an appropriate regulatory framework, through the Guidelines, which seeks to implement the provisions of the Act. The framework is in place; it is now incumbent on POTRAZ to implement it and a fair manner.*  *Econet recognises that there may be possible impediments to infrastructure sharing, however if parties see benefit in sharing and are free to enter into commercially viable sharing arrangements, then rationality will prevail in most cases. In our view the biggest impediment to appropriate access to facilities is the failure to unlock USF funds in a consistent and efficient manner to allow for infrastructure to be built that is designed and intended to be shared. The second impediment would be introducing mandatory sharing instead of letting commercial models prevail. The culture in certain operators, particularly NetOne is also a significant inhibitor. However we should not ignore the significant challenges of trying to impose a sharing framework on existing infrastructure, particularly factors such as:*  *1. Space and capacity limitations on existing towers*  *2. Difficulty and high costs involved to upgrade infrastructure*  *3. Defaults in payment by some operators and lack of enforcement of regulatory and contractual obligations by relevant authorities.*  *4. Difficulty in striking sharing agreements between parties, and uncertainty over POTRAZ’s capacity to address disputes in a timely manner.*  *We believe most of the above can be addressed by a less interventionist approach, in view of the successful sharing model currently occurring in the market.*  ***Liquid Telecoms (Same analysis as Econet Wireless)***  ***Makoni Rural District Council***   1. *Yes.* 2. *Factors below can be seen as factors of infrastructure sharing*   *Coverage as a competitive tool:*  *MNO’s who perceive coverage as a competitive tool is less likely to indulge into voluntary sharing. Hence to counter this Regulatory should instil strict mandates in conjunction with the government.*  *Monopolistic tendencies among big players*  *Open access should be employed with help of the regulatory authorities to ensure discipline within the industry by instilling direction to pave way for a healthy competitive environment.*  *Personnel issues*  *There is need for a mediator to oversee the proceedings of a joint venture company so as to come to an understanding/agreement on the sharing of resources.*  *Regulatory regime*  *Regulations in in place may hinder infrastructure sharing hence there is need for revision of policies by regulatory authority.*  ***NECF***   1. *Agree.* 2. *Coverage as a competitive tool is an impediment in our Zimbabwean situation as the major players are using coverage to gain a competitive advantage. Operator Asymmetry is also a problem as some operators are already using some technologies which are much more advanced than others. Because of this, sharing of infrastructure becomes a problem as it becomes expensive for the other players to upgrade their systems to match that of their competitors enabling them to share the some infrastructure. For example, in Zimbabwe Econet wireless by May 2014 where aiming on the 5G technology whilst other service providers are still lagging behind with Net-one still finishing its upgrade to 4G by September  2014. These problems can only be addressed by the telecoms regulator forcing the different players in the telecoms industry to comply with specific technologies by a given date. This will force them to share the cost of setting up the different technologies which are expensive to setup giving the consumer the best service at the end of the day.*   ***Netone***   1. *Whilst we agree with the above-stated views, there are some very*   *fundamental issues that inhibit infrastructure sharing which need to*  *be highlighted.*  ***Network Infrastructure Design***  *It must be noted that when a network operator designs its infrastructure, the design is planned to address the network operator’s specific business requirements. For example the tower design will take into account the number of microwave antennas that the operator intends to install for immediate and future requirements. Wind loading factors will be taken into account to ensure that wind deflection will not result in poor signals and or no signals at all. This has a direct impact on network quality and network availability. When another network operator approaches the other network operator for sharing, their intended network infrastructure deployments would not have been planned by the other network operator for immediate and future needs.*  *It is important to mention that base station towers have a life span of 25 years or more if they are properly designed and constructed. Tower infrastructure is a long-term investment. For example towers that were commissioned in 1997 have been able to accommodate all evolving technologies that include 2G, 3G, 4G and microwave antennas with space diversity due to internet protocol (IP) microwave which needs very high quality, etc. Soon to be deployed technologies like 5th Generation systems will have to be accommodated on the same towers including other technologies that will evolve over the 25-year or more life-span of a network operator.. It will be myopic and very unfortunate for a network*  *operator to fail to deploy its own infrastructure due to inadequate space which could have been shared with another operator.*  ***Cost of Capital Investment***  *Substantial capital expenditure is incurred in developing network infrastructure. A network operator will source the required capital through very expensive short-term loans. It would therefore be fair for any prospective sharer to not only pay for the very low site sharing charges but should also shoulder other costs that could have been incurred by the infrastructure developer.*  ***Sharing Parties must all have Network Infrastructure to Share***  *Infrastructure sharing means that sharing parties all have infrastructure that can be shared in all the possible scenarios and environments that can be encountered by a network operator around Zimbabwe. This sharing must also be done amongst network operators who have a vision to develop their network across the whole of Zimbabwe and who have some developments happening in various locations around the country or who have already deployed infrastructure in the previously-mentioned areas. In other words network infrastructure sharing means that network operator A comes to network operator B and requests for example 10 sites for sharing in areas where network operator A does not have network coverage. In turn network operator B will also counter-request 10 sites for sharing where network operator B does not have network coverage. The areas that will be offered for sharing by both operators will be in almost similar coverage environments.*  *Lack of network infrastructure on the part of an operator requiring sharing is therefore an inhibitor to network infrastructure sharing. Approaching another network operator for infrastructure sharing without having any network infrastructure to offer in return ceases to be sharing and it becomes infrastructure leasing. It is important to point out that all network operators have an obligation from the regulator to develop network infrastructure and leasing infrastructure without any efforts to also develop own infrastructure*  *is unfair, predatory and defeats the whole essence of licencing network operators to provide network services countrywide.*  *(a) impediments to*  *infrastructure sharing include:*  ***1.*** *Infrastructure design which usually takes care of an*  *operator’s own current and future needs only.*  ***2.*** *The cost of capital investment which would also need*  *sharing.*  ***3.*** *Lack of infrastructure to share on the part of other network*  *operators.*  ***Telecel***   1. *Agree* 2. *Possible impediments are coverage, monopolistic tendencies and operator asymmetry*   ***Telone***  ***a)*** *Tel●One agrees with views of the factors that may inhibit infrastructure sharing.*  *b) Tel●One views points 2, 3, 4 and 5 factors as the biggest impediments to infrastructure sharing in Zimbabwe.*  ***Factors that may inhibit IS***  * Coverage as a competitive tool – operators who perceive coverage  as their competitive tool are less likely to go voluntary sharing.*  * Monopolistic tendencies among big player – often big players in the  market have access to strategic sites and rights of way. Denying  new entrants or small operators’ access to such resources tends to  slow down new entrants network deployments.*  * Operator asymmetry-operators may fail to enter into infrastructure  sharing agreement due to differences in technology and site quality.*  * Asset management model- without a proper crafted asset  management model, infrastructure sharing might fail to take off.*  * Regulatory regime- regulations in place might to allow infrastructure  sharing.*  *Tel●One views points 2, 3, 4 and 5 as the possible impediments to infrastructure sharing in Zimbabwe.*   1. *Regulatory authority (POTRAZ) may find it necessary to provide direction when monopolistic tendencies behaviour is detected or is being expected to prevail within the market.* 2. *The operators with similar technologies or technologies that can be integrated may be allowed to engage in infrastructure sharing. Other existing operators and new entrants may be encouraged to invest in technologies that can be integrated with the technologies already invested so as to allow infrastructure sharing.* 3. *On the factor of staff resistance, labour laws, and transformational issues, the Regulator may train the operators’ strategic staff on the benefits of infrastructure sharing, whilst at the same time craft the policy (in the form of Corporate Governance Framework) that calls for every staff member to comply.* 4. *On the issue of asset management, the Regulator should provide guidelines (in consultation with all operators) taking into account all legal and commercial issues about the jointly owned or shared. The operators will then work within the guidelines laid down by POTRAZ.* 5. *The regulator with the help of the government may also come up with the guidelines which all the operators are required to comply. i.e. legislative on infrastructure sharing as part of the resource management by the Government through its arm namely POTRAZ.* 6. *Tel●One has not considered Coverage as a competitive tool as an impediment in the context of Zimbabwe since most of the big operators cover all regions across the country. Most small operators are not regarded as having the objective of expanding in regions but concentrating in towns and cities only. Thus coverage as a competitive tool ceases to be an impediment*   ***Telco***  *(a) Yes*  *(b) All except Regulatory regime/POTRAZ must exercise its authority*  ***University of Zimbabwe***   * 1. *Yes we agree with the above*   2. *Coverage as a competitive tool: This can be mitigated by a properly layed out and ENFORCED regulatory regime. The Regulator should have concrete plans of the current and future infrastructure. There is need to have a clear policy (and timelines for implementation)as to what is considered core and what is considered non-core. For example what categories would the following fit in: i) Connection to SEACOM cable ii)Connection between Harare and Norton iii) Connection between Main Exchange and Westgate Suburb iv) Connection between houses in Westgate v)Connection to a Hardware shop at Westgate Shopping Centre.*   3. *Operator Asymmetry: This again requires the leadership of the regulator. There are issues that are already done, those cannot be reversed with regards the infrastructure. However, all these pre-done plans have to be taken into consideration.*   4. *Personnel issues: In other models, like the one in Europe, the equipment owner, in their case Alcatel, would provide the maintenance of the backbone. In essence we are saying there has to be real and not imagined ability and capability to manage the network.*   ***Zimbabwe Youth Investment Group***   1. *Yes.* 2. *Coverage as a Competitive Tool: This is one of the major impediments to infrastructure sharing in Zimbabwe. Consultations with the major players will need to be made to assess how each player can benefit mutually.*   *Monopolistic Tendencies among big players: The regulator needs to engage the operators and set a reasonable benchmark or requirements for new entrants, to be able to share infrastructure. We are seeing duplication of infrastructure when these investments could be going into improving the current infrastructure and provide better services for the consumers.*  *Regulatory Regime: The regulator has to put in place the necessary regulatory framework for infrastructure sharing. This regulation model should take into account and address all the factors that could possibly inhibit infrastructure sharing.* |  | Noted  Noted. In underserved rural areas, sharing is already in  practice under the USF projects.  Noted  Please note that these are factors that “MAY” inhibit  infrastructure sharing. The issue of empirical evidence  is not relevant.  Noted but not convinced that there is no financial  pressure to share. The financial pressure is there on the part of the consumer and the regulator who would want to experience lower cost of services. The  recently concluded cost studies identified  infrastructure duplication as a major cost driver in the  provision of telecommunication services in Zimbabwe.  This is the essence of this process aimed at coming up  With a framework to effectively facilitate and where  possible enforce infrastructure sharing.  This is not the case. In each market there is a dominant  Player. The fact that Econet is a dominant player  does not mean that we should not use the word.  Nobody is accusing anyone of anything.  Noted  Noted  Why and how is the possibility of joint ownership not  Possible??  Agreed. However the Authority’s view is that the  existing framework in its current form is in adequate  and has failed to stimulate the desired levels of  infrastructure sharing to usher us into the post 2015  development agenda.  The Authority is alive to such impediments and each  case will be considered on its own merits. The  consultation document deliberates on these issues  at length.  The agreements entered into should take care of all  commercial issues including default in payments and  any other contractual breaches - of which the law  should take its course.  We do not envisage this as a major issue at all. We do  not think we have such a reputation. In any case, the  framework should stipulate guidelines within which  POTRAZ should resolve disputes.  We believe a mixture of intervention and  non –intervention will work in the best interest of the  sector, the public and the nation at large.  Noted  Noted  Noted  Noted- this is why we are here.  Noted  Noted  Noted- but the possibility of entering into strategic  joint ventures to jointly build infrastructure should not  be ruled out.  Noted. However the possibility of entering into strategic  joint ventures to jointly build infrastructure should not  be ruled out.  The regulator is alive to the need for an appropriate  Costing model that also takes into account all the  relevant economic costs, including the opportunity  cost of capital.  The Authority is not comfortable with the reciprocity  condition. We propose sharing should occur wherever  it is technically feasible and commercially viable. A  seeker should not be denied to share where it is  technically feasible.  The Authority is not convinced that leasing infrastructure  without any efforts to also develop own infrastructure  is unfair, predatory and defeats the whole essence of  licensing a network. It is an issue of strategy especially  where there is already an over provision of infrastructure.  Noted  Noted  Noted  Noted  Noted  Noted  Noted  Noted  Noted  Noted  Noted  Noted  Noted  Noted  Noted  Noted  Noted  Noted |
| ***Question 3*** | ***Issues for consultation:***   1. ***Do you agree with the description of the above forms of passive infrastructure sharing?*** 2. ***Are there any other forms of passive sharing that are possible between operators? If any give more*** |  |  |
| ***Responses*** | ***Computer Society of Zimbabwe***   1. *Majority said Yes, but recommended a phased approach to sharing.*   *Concerns:*   * + *Group felt that we are not ready for active sharing. Reason is due to different technologies, tower capacities, anti-competition issues*   + *There is lack of sincerity in the investment of newer technology by some of the MNOs. The MNO in power are the one who will dictate the pace at which we are going to get new technologies. Let us share the non-active infrastructure, if that works then we can hazard sharing of the active infrastructure.*   + *Some of the players might not rollout new technologies in areas where they have a low market share. Additionally if one operator owns the most infrastructure they might use that position to “enforce” the technologies that are deployed*   + *It will be good to start by sharing the passive elements.*   + *Potraz must be seen to be impartial*  1. *MVNO is the most suitable. Some felt that all operators should sell their infrastructure to the independent body and the operators become MVNO’s on that infrastructure. Payment options could include offsetting service charges against the value of the infrastructure.* 2. *Yes*   ***Dandemutande***   1. *Yes. We believe a comprehensive list of passive infrastructure sharing has been provided.* 2. *We believe that the Regulator should have and still should ensure that current and future ducting or trunking is deployed in a manner making it suitable for co-location or multi-tenant use*   ***Econet Wireless***  *On the whole the passive network elements are largely accurate, as are the diagrams extracted from the GSMA report.*  *While the elements are accurately noted, Econet has various concerns regarding the statements made and conclusions drawn in this section. These concerns include:*  *1. A statement in clause 2.2.1 regarding a saving on various elements. While most of these are accurate, Econet does not agree that there will be a saving on power.*  *2. Clause 2.2.1 does not also recognise that the typical sharing arrangement is a head lease and a sub-lease and the ability to sub-let elements of the site may be circumscribed in the head lease.*  *3. Econet agrees with the concern raised about confidence in the legal framework and refers POTRAZ to the difficulties Econet has had enforcing interconnection and other agreements. This does not engender confidence in the ability to enforce contractual terms relating to infrastructure sharing.*  *4. Clause 2.2.2 is largely accurate, however does not recognise that a change in tower design will not only impact the specification, foundation and site selection, but most significantly a massive increase in the cost of site establishment.*  *5. Econet does not agree with the statement in clause 2.2.5 that rights of way are a scarce resource. This is an artificial construct and we believe that it can be overcome with good planning. We also do not agree with the emotive suggestion of costs becoming “horrendous”. It will be rather simple for the relevant authorities to reduce or remove these costs in order to facilitate increased network expansion.*  *6. As regards duct sharing (clause 2.2.6) Econet is concerned with rather lose language, but most importantly with the suggestion that an operational model could include unrestricted access to manholes and equipment rooms. Econet is not aware of any circumstance where competitors can access such infrastructure on an unrestricted basis.*  *7. Econet does not agree with the notion of “tower companies” as a form of passive infrastructure sharing. These are not sharing arrangement, but rather commercial models that work because they avoid the lengthy and complex processes that the Consultation Paper is proposing. These tower companies are not difficult to conclude and manage and in fact are far quicker than regulatory interventions. The issue however is that they seem to be prohibited under the Act.*  *8. We note the reference to adopting a converged licensing framework and would request that POTRAZ provide the industry with a proposed timeline for such a development.*  *9. The only form of passive sharing that seems to have been overlooked is in the access network and Local Loop Unbundling (LLU) in particular.*  ***Liquid Telecoms***  *We remark that POTRAZ has only analysed superficially the possible dynamics and technical implications of infrastructure sharing. The report prepared by Analysys Mason hints at several limitations and hurdles that should have been noted and analysed by POTRAZ, to inform and guide its initial thinking about the possible forms of infrastructure sharing.*  *Liquid Telecom is surprised by the absence of any reference to local loop unbundling (LLU) of the copper network as a form of passive infrastructure sharing. Considering all other sharing forms are described on other media and technologies, the absence of a reference to LLU is conspicuous by its absence. It is also surprising that LLU is not mentioned given its implementation would likely largely address POTRAZ’s objective towards achieving universal broadband access, by rendering the ADSL market more competitive and more affordable. With more than 300,000 copper-based subscriptions, ADSL is the single most pervasive fixed access technology in Zimbabwe. Considering that broadband penetration of these lines stands at around 10%, a large untapped market remains to be addressed. A number of sharing models can be implemented over LLU, including full unbundling (in line with what has occurred in most European and other Western countries), line sharing and bit stream access, all enabling competition to be introduced into the fixed broadband markets through alternative ISPs.*  ***Makoni Rural District Council***   1. *Yes*   ***NECF***   1. *Passive infrastructure sharing has a big impact both financially and environmentally, as the different players in the telecoms market will have to share maybe the same duct for the fibre optic cables, and also the same base station. By sharing the same duct, all operators will just have to share the costs for trenching, as well as licencing for the right of way from the municipal. Environmentally we will not have all the operators digging trenches all over cities which may have a negative impact on our environment.* 2. *Sharing of fuel and electricity costs as well will be achieved in this case. Hence we strongly agree with the idea of passive sharing of base stations.*   ***Netone***   1. *We agree to the descriptions of the above passive infrastructure*   *sharing. The observation that has been made on the load bearing of  towers is well informed and most welcome. The need for tower  management companies as shown in the third model of “independent  Telecommunications infrastructure network facilities companies   constructing infrastructure for lease to network service providers” is   imperative. If this model is used no individual network operator will be   weighed down by the huge costs of infrastructure development were  they to develop infrastructure to share with other network operators.   An independent tower company will also enjoy economies of scale as it  focusses on developing passive infrastructure and has the leisure of   consulting all network operators for their current and future   requirements.*   1. *In our view the paper has sufficiently highlighted all possible forms of passive infrastructure sharing that currently exist with deployed*   *technologies.*  ***Telecel***   1. *Agree*   ***Telone***  *Tel●One agrees with the description of the forms of passive infrastructure sharing mentioned in the row below.*  ***Forms of Infrastructure Sharing***  *Passive Sharing is the sharing of non-electronic infrastructure facilities and it includes sharing of physical sites, buildings, shelters, towers/masts, electric power supply & battery backup, grounding/earthing, air conditioning, security arrangement, poles, ducts, trenches, right of way, air-conditioning equipment, civil & engineering works, easements and roads.*  *Active Infrastructure Sharing is where operators share active elements of the network and it includes sharing of base transceiver station (BTS), spectrum, antenna, feeder cable, microwave radio equipment, billing platform, switching centres, routers, base station controller (BSC), Optical fibre/wired access and backbone transmission network*  *All the forms of* ***passive infrastructure sharing*** *have been identified.*  ***Telco***  *(a) Yes*  *(b) Possibly, but these are the common ones*  ***University of Zimbabwe***  *Yes we agree with the above*  ***Zimbabwe Youth Investment Group***  *a. Yes* |  | Noted.  Agreed, but that does not stop us from  accommodating such possibilities in our framework.  It has to forward looking and alive to technological  developments.  Noted  Noted  Noted  Noted  Noted  Noted  Noted  Noted  Noted  Noted  Noted  Noted, but if the cost is shared, the net effect is cost  reduction.  As above. The framework that we are working on is  Part of the process of “good planning”  The Authority believes that given the amount of  infrastructure that needs rights of way, the costs can be very  unbearable.  Please note that unrestricted access is in the sense of  open access in the sense of competition and not  physical access.  Our understanding is that tower companies provide a  form of infrastructure sharing. This is simply because  there business is to build infrastructure for the sole  purpose of leasing it to other operators on a shared  basis for them to maximize their return per dollar  invested.  This is not the subject of this forum. Operators will be  notified and advised accordingly.  Noted.  The Authority has perused the analysis Mason Report  and does not see any detailed anaylsis on the technical  implications of infrastructure sharing that are not  covered in the consultation document.  Noted.  Noted  Noted  Noted  Noted  Noted  Noted  Noted  Noted  Noted  Noted |
| ***Question 4*** | 1. ***In your opinion, should active infrastructure sharing be encouraged? Give reasons for your answer.*** 2. ***Given the various forms of active infrastructure sharing described above, which ones do you think are most suitable for the Zimbabwean case. Please provide reasons for your choice. You are free to suggest a hybrid of various forms of sharing.***   ***c. In your view, do you consider the option to licence Mobile Virtual Network Operators(MVNOs) as a viable option to encourage active infrastructure sharing in Zimbabwe?***  ***d. What other modes of active infrastructure sharing will be useful in the Zimbabwean  scenario? Suggest actions which you feel necessary to encourage such sharing.*** |  |  |
| ***Responses*** | ***Dandemutande***   1. *Yes. We do believe that active infrastructure should be encouraged but not mandated. This becomes critical in the development of an LTE RAN where the real benefits of LTE will be gained from each operator having 30 MHz per sector. Allowing for 3 or 4 sectors will require 90 to 120 MHz per operator. Unless all operators share they will be building multiple networks that cost too much and provide too little.* 2. *Common backhaul sharing and spectrum sharing provided all cities are shared within a geographic region.* 3. *Yes. We believe this would be simpler if the Regulator had provided for this option earlier when networks were originally being designed by operators.* 4. *Duct sharing.*   ***Econet Wireless***  *Econet does not consider the market in Zimbabwe to be mature enough for the onset of active infrastructure sharing in mobile networks. Consequently, we do not think any form of active infrastructure sharing is suitable for the Zimbabwean case. In these circumstances, issuing guidelines on the circumstances in which active radio sharing would be approved would be speculative and a waste of POTRAZ resources.*  *Econet is further of the view that the analysis in this section is very perfunctory. For example, many MVNOs are not an example of active infrastructure sharing, but are purely a wholesale commercial model where the mobile operators provides voice and data to the MVNO on a wholesale basis, which is then sold by the MVNO using its own brand. In order to analyse the applicability of licensing MVNOs, POTRAZ must indicate what type of MVNO is being contemplated before Econet can respond. In any event, an MVNO will only survive if commercially viable.*  *Similarly the “Geographical Splitting / Network Sharing” and “National Roaming” arrangements are not necessarily active infrastructure sharing. In the examples given, infrastructure is not shared and instead there is a commercial arrangement in place, which allows consumers to have a seamless experience. There is no common infrastructure or separated infrastructure, but rather a service which is provided by one operator to another.*  *It is Econet’s submission that viable modes of infrastructure sharing are those which are commercially negotiated.*  ***Liquid Telecoms***  *Liquid Telecom already shares at the active layer of its network, where it provides open access on a commercially agreed basis. We believe that POTRAZ has not analysed the impact that infrastructure sharing might have on the telecommunication industry. The report prepared by Analysys Mason provides an initial view of the possible impact, and Liquid Telecom would have expected POTRAZ to draw a complete commercial and technical analysis of how infrastructure sharing could affect the market. This would have guided POTRAZ is suggesting specific areas that could benefit from infrastructure sharing.*  *POTRAZ should focus the infrastructure sharing discussion on how to best leverage TelOne’s extensive and unused infrastructure. We suggest that TelOne must be mandated to share the copper local loops at a cost-orientated price.*  ***Makoni Rural District Council***   1. *Active infrastructure should be encouraged* 2. *It brings a boost in competition within certain markets which the network is largely rolled out.* 3. *It facilitates easy and faster roll-out of entrant networks.* 4. *Mobile virtual Network Operators MVNOs*   *This mode is suitable for Zimbabwean case because it allows for easy and quick cost saving infrastructure as they can ride major networks which have a wide coverage and in turn provide competition and quality services to customers.*     1. *National roaming*   *This is also suitable for Zimbabwe’s case to enhance service to consumers in low subscriber density of a particular network by roaming on a host network to compensate for lack of presence by operators.*     1. *Radio access Network (RAN )* 2. *Yes. It is a viable option as it allows a faster roll out of services of entrants. Furthermore it brings about a variety of network operators to which consumers can choose from. More so it facilitates healthy competition which in turn lowers prices.* 3. *Common Back-haul sharing*   ***NECF***   1. *Yes. Although the sharing of active elements may be very complex there is need for thorough appreciation of all parties involved. Anti-competitive behaviour such as collusion on prices or service offerings will need to be closely monitored* 2. *The mobile core network performs several functionalities that are essential for the provision of services, such as the billing system and customer database. The database in the mobile network is mainly Home Location Registers (HLR) and Visitor Location Register (VLR) which contain information on the customers and they can be reached (located). The information contained in the core network is commercially sensitive and confidential that is why it may be very difficult to share the mobile core network for competing operators. However, the core network may be shared through other means such as National Roaming and Mobile Virtual Network Operators (MVNO).* 3. *Given the high cost and unavailability of Capital, MVNOs will increase the number of players in the industry. This will create more jobs and reduce price due to increased competition.* 4. *In rack sharing – where the service providers share the equipment cabinet, Power supply, air conditioning and alarm systems while they maintain separate antenna system, channel elements, TRX and power amplifiers. A typical rack sharing for the 3G radio access network*   ***Netone***   1. *In our view active infrastructure sharing should not be encouraged*   *for the following reasons. Network operators source their equipment  from different vendors bring in compatibility issues if sharing was to  be done on the hardware and software which is proprietary for   elements save for standard interfaces. Network operators have*  *different network designs and deploy different features in their*  *networks. This will also present challenges as subscribers from one*  *network will have reduced services when they move from own network*  *to shared active network. QoS will be negatively affected even where*  *network operators use the same vendor as hardware and capacity that*  *can be deployed at an individual site have an optimum design which is*  *informed by the spectrum allocated and by radio frequency design*  *considerations. An influx of customers from the sharing entities into a*  *given base station for example will result in a network crush for that*  *entity.*  *In active infrastructure sharing each network operator has to design its*  *network for all available operators’ subscribers which brings up the cost*  *of deploying the networks. Active infrastructure sharing would in our view*  *lead to an increase in tariffs.*    *b) Of all the suggested forms of active infrastructure sharing, we*  *believe none are suitable for Zimbabwe as active infrastructure is*  *complex and cannot be deployed in a country where network*  *operators are still struggling to extend network coverage and*  *improve on network QoS.*   1. *Mobile Virtual Network Operators (MVNOs) are not a viable option to encourage active infrastructure sharing in Zimbabwe mainly due to complexities involved in deploying it.* 2. *In our view active infrastructure sharing is not suitable for the*   *Zimbabwean environment. This type of sharing is suitable for*  *developed countries that have saturated their networks not only with*  *subscribers but with massive equipment deployments that is*  *supported by their well-developed economies.*  ***Telecel***   1. *Active infrastructure sharing should be encouraged so as to minimise costs as well as to promote environmental cleanliness* 2. *Most suitable are common back-haul sharing, geographical splitting and national roaming as these are easy to implement without unnecessary haggling by MNO’s.* 3. *No this is not a viable option* 4. *The modes identified are adequate*   ***Telone***  *Tel●One views Active Infrastructure Sharing as more complex and sharing arrangements are often difficult to arrive as compared to passive infrastructure sharing. Sharing active infrastructure will expose the operators’ active equipment to security threats. For example, sharing switches and billing systems will expose the operator to security risks such as hacking in the financial systems, switches, etc.*  *Also, active infrastructure sharing may also be difficulty to share since it is associated with the challenges of interference within the network. For example Spectrum Sharing will be prone to interference and accountability becomes a challenge. It is very difficult to share frequencies. The quality of service will also be compromised and the issue of software upgrades will be difficult to implement. Also Active sharing may also be a challenge as the issue of compatibility of software will be a challenge.*  *In other developed countries, active sharing is being implemented as the operators are deploying latest technologies which are easy to manage and at cheaper cost. The framework is being crafted by both operators with the help of Regulators which will then be used for proper management of the equipment under sharing.*  *However, in the Zimbabwean context, the economy is still lagging behind in terms of technological developments to the extent that active infrastructure sharing may have huge loopholes and the stakeholders may have imperfect knowledge. Hence, Tel●One views Active infrastructure sharing as difficulty to implement in the short to medium term. However, in the long term when there are clear cut policies that are in place to govern the active sharing and new technologies that are easy to manage have been fully deployed. Even in the long term, it can only be implemented in a phased approach as systems are being put in place to monitor the sharing activity.*  *Active Infrastructure Sharing involves sharing active elements of the network which includes sharing of Base Transceiver Station BTS, Spectrum, Antenna, feeder cable, microwave radio equipment, billing platform, switching centres, routers, Base station controller/Radio Network Controller, Optical Fibre/wired access and backbone transmission.*   1. *As indicated in point 4 (a), Active Infrastructure Sharing in Zimbabwe is difficult to implement in the short to medium term due to the lagging of technological developments in the country. However, in the long term, active sharing elements such as backhaul will be useful in the rural environment where traffic is very low. Also, Core Network Sharing or Mobile Virtual Network Operators (MNVO) can be shared in the long term when technologies such as 3G and 4G have been fully deployed and the sharing facilitates the operations of mobile virtual networks. In such arrangements the MNVO will not have its own infrastructure but rides on another operator’s network to provide services using its own subscriber database and survives on buying minutes in bulk from the network operator and using its own brand to sell the minutes to subscribers. This is more applicable to mobile operators than fixed to mobile operators. However, all this can be implemented in a phased approach.*   *Also National Roaming can be shared where subscribers of two competing networks within the same country are allowed to roam onto a host network if the home network is not present in a particular location. Under such arrangements, operators can compensate for lack of presence and offer users contiguous coverage and service using the same handset and SIM. However, in the context of Zimbabwe, Tel●One views as late to implement National Roaming as part of infrastructure sharing since most big operators are now covering most areas of the country. Only new operators and other small operators who want to enter new regions may be encouraged to enter through national roaming using already existing networks deployed by other operators.*  *In the chosen active sharing forms, POTRAZ should be able to regulate through capacity and utilisation audits. In general, considering Zimbabwean economy, Passive Sharing can only be implemented in the short to medium term while active infrastructure sharing can only be implemented in long term taking into account developments in technological advancement and the state of the economy.*   1. *Tel●One does not view the option to licence Mobile Virtual Network Operators (MNVOs) as a viable option to encourage active infrastructure sharing in the context of Zimbabwe. This is because MNVOs have reached the market saturation, hence the option is not viable in Zimbabwe. The MNVOs depends on market appetite.*   *MNVOs also entails sharing of the core network where capacity exists in an existing operator’s core transmission ring, switching centre and core network logical platforms.*   1. *TelOne sees Number portability as another mode of active infrastructure sharing useful in Zimbabwe. This will be the first phase of sharing and POTRAZ has to come up with a regulation that requires all operators to comply. In this context, an individual customer may use one number.* 2. *Number Portability is an option that allows customers to switch to another network whilst retaining the same number.*   ***Telco***  *a) Some, common tower backhaul transmission and national roaming in rural areas only*  *b) Common Tower backhaul and National roaming, - because most of them*  *require complex network management.*  *c) Possibly, but the target market in Zimbabwe is very small to ensure viability*  *d) Introduction of national roaming for mobile operators, especially in the rural areas. POTRAZ makes a license requirement in rural areas*  ***University of Zimbabwe***   1. *We need to have the passive infrastructure issue sorted before we go to active infrastructure sharing. Mainly because we need to build the technical capacities, we also need to build the trust, and we need to build the confidence in the infrastructure sharing.*     1. *RAN Sharing: This is possible where a good regime of equipment purchase has been put in place. It might be ideal in the out-laying areas where the issue of signal strength is not very material due to the lower demand on services*    2. *Common Back-haul sharing: This would make sense for our situation.*    3. *Geographical Splitting/Network Sharing: This might be an interesting solution for all the under-covered paths of the country. This would be a version of the current Universal Access Fund provision.*    4. *There are no others we are suggesting at the time. We feel that with the ones that are proffered so far what is required is a monotonic implementation whose main by product is trust amongst players and efficiency-building.*   ***Zimbabwe Youth Investment Group***  *a. Yes for the following reasons:*  *• Rural coverage expansion.*  *• Cost effective deployment of 3G or LTE.*  *• Accelerated nationwide coverage expansion.*  *• Optimum utilisation of established network resources.*  *• Increased revenue (through wholesale arrangements).*  *• Greater spectrum bandwidth (through spectrum pooling).*  *• Higher data throughput (by pooling spectrum bands).*  *• Reduced spectrum costs (as a result of joint bidding).*  *• Capex & Opex savings.*  *• Faster time-to-market.*  *• Control over service offering differentiators, such as QoS, charging,*  *billing and customer management.*  *b. The following forms of infrastructure sharing will be suitable to   Zimbabwe:*  *• 2.3.2 Common Back-Haul Sharing.*  *• 2.3.5 Mobile Virtual Network Operators.*  *• 2.3.7 National Roaming.*  *The reason for the above choice is that these forms of infrastructure sharing directly address the issues faced by the country, and we believe that the regulator will find it easier to create a policy based on these forms.*  *We also believe that the operators will be able to mutually benefit from these forms of sharing.*  *c. Mobile Virtual Network Operators if licensed would be a viable   option for infrastructure sharing.*  *Not only would the operators benefit from increased revenue from the  lease agreements.*  *Consumers will also benefit from increased services at lower costs.*  *There is the issue of competition but this can be regulated through the   licensing structure.*  *MVNO’s are potentially a quick win in terms of infrastructure sharing in Zimbabwe.* |  | Noted  Noted  Noted. But what about the future with increasing  demands on spectrum resources?  The idea still remains that they are using or sharing the  same active network. In essence, any arrangement  that facilitates several different service providers to use a single platform/ or network to provide services is considered as infrastructure sharing.  We agree in full- but with regulatory guidance to avoid/  Minimise cases of market abuse.  This is the essence of this workshop.  Noted.  Noted.  Noted  Noted  Noted.  Noted  Noted.  Noted  Noted.  Noted- although we envisage a framework that would  give operators to enter into active infrastructure  arrangements where it makes business sense.  Same as above.  Noted but not convinced because there are several  forms of active infrastructure sharing that can be  exploited to achieve faster service roll out particularly  in remote areas .  Does this mean that Zimbabwe will never have  saturated networks as is the case in developed  countries? The authority sees no harm in putting in  place a forward looking framework.  Noted.  Noted. As above  As above.  Noted. As above  Noted and agreed.  Noted and agreed.  Noted, the regulator favours the idea of MVNOs as a  way of opening up the market to more players,  thereby increasing competition.  The authority does not view number portability a form  of active infrastructure sharing. Rather, it is a strategy  for promoting competition.  Noted. As above.  Noted.  Noted.  Noted.  Noted.  Noted.  Noted  Noted.  Noted.  Noted.  Noted. |
| ***Question 5*** | ***Do you agree with the above analysis on the status of infrastructure sharing in Zimbabwe? If not, give reasons and statistics to prove otherwise.*** |  |  |
| ***Responses*** | ***Dandemutande***  *Yes. If possible, we ask that the Regulator provide us with copies of S.I. 28 of 2001 as part of this consultation paper.*  ***Econet Wireless***  *We understand that through the term “analysis”, POTRAZ refers to (a) its statement that the most commonly shared infrastructure among operators is passive infrastructure in the form of towers, equipment rooms and power supply; (b) a study which has revealed that 13.4% of the total telecommunications passive infrastructure is shared. Besides the fact that we are not aware of this study, it is unclear what this figure refers to, and how it has been obtained. Not being aware of bilateral sharing agreements between operators, we are only in a position to comment on the extent of sharing on our network. Out of a total of around 1300 Econet sites, 254 are shared with a range of other parties – and this includes our sites shared with others, and third party sites that we use. Purely in terms of site co-location, then, around 20% of Econet’ tower infrastructure is shared.*  *Of more concern and as referred to in our general submissions above, POTRAZ’s “analysis” has not actually sought data and inputs on this topic from operators, but has relied on superficial statistics of unknown origin combined with theoretical analysis. POTRAZ has not examined which operators are sharing and which are not, and what obstacles are practically encountered. We do not understand how POTRAZ can seek to apply a remedy when it has not actually identified the problem except in oversimplified terms. Econet has compiled its own research on this in the accompanying report by Analysys Mason.*  *As indicated previously, Econet encourages POTRAZ to take the report submitted and use it as the start of the detailed analysis, which is required before regulatory intervention can be considered rational and proportionate.*  *Econet also notes that Zimbabwe has an existing infrastructure sharing regime in terms of the Act and the Guidelines and Econet further encourages POTRAZ to implement that which already exists, rather than embarking on radical and speculative changes.*  *While the Analysys Mason report attached covers some of the country research dealt with rather superficially in Chapter 3 of the Consultation Paper, Econet notes that almost every model cited relies on a commercially negotiated agreement, is not mandatory and the regulator is restricted to a dispute resolution role, if needed. According Guideline 11 already follows international best practice.*  ***Liquid Telecoms***  *We understand that in its question POTRAZ refers to (a) its statement that the most commonly shared infrastructure among operators is passive infrastructure in the form of towers, equipment rooms and power supply; (b) an undisclosed study which has revealed that 13.4% of the total telecommunications passive infrastructure is shared. Besides the fact that we are not aware of this study, it is unclear what this figure refers to, and how it has been calculated. Not being aware of the terms of bilateral sharing agreements between other operators, we are only in a position to comment on the extent of sharing agreements we know about. Liquid Telecom’s open access network can in effect be considered as a full sharing of our infrastructure.*  *Of more concern is the fact that POTRAZ has not sought data and inputs on this topic from operators, but has relied on superficial statistics of undisclosed origin combined with high-level analysis. POTRAZ has not examined which operators are sharing and which are not, and what obstacles are practically encountered. We do not agree that POTRAZ can seek to apply a remedy when it has not actually identified the problem except in oversimplified terms. To inform its own suggestions, Liquid Telecom has compiled a more comprehensive research (but still short of what POTRAZ should consider as a minimum to be able to ground its guidance) on this in the accompanying report by Analysys Mason.*  ***Makoni Rural District Council***  *Yes, this is true. The infrastructure sharing is minimal in Zimbabwe as it is only limited to passive infrastructure.*  ***NECF***  *We agree. Players in the telecoms industry are working hard to keep abreast with latest technologies, hence giving our country a slow but steady growth in ITC and telecoms. This will go a long way in improving our countries infrastructural development.*  ***Netone***  *We agree with the general observations above.*  ***Telecel***  *Agree*  ***Telone***  *Tel●One feels that the current infrastructure sharing in Zimbabwe is not properly regulated and is based between operator’s agreements. There is a lot of duplication of resources. The current scenario needs intervention and the introduction of the infrastructure sharing framework. Although backhaul is being shared amongst the operators, POTRAZ should request operators to disclose the extent of infrastructure sharing for audit purposes and way*  *Forward.*  ***Analysis***  *Infrastructure sharing in Zimbabwe is regulated by Statutory Instrument 28 of 2001 on Interconnection Guidelines that empowers POTRAZ to issue guidelines to the licensees and service providers relating to infrastructure sharing. Currently infrastructure sharing is not mandatory in Zimbabwe as it is left to commercial negotiation between operators. This has resulted in a scenario where infrastructure sharing is minimal in Zimbabwe.*  *The study conducted by POTRAZ revealed that the most commonly shared infrastructure among operators is passive infrastructure in the forms of towers, equipment rooms and power supply. The study also revealed that only 13.4% of the total telecommunication passive infrastructure is shared and it was also revealed that none of the operators are sharing active infrastructure or backhaul elements.*  ***Telco***  *Yes*  ***University of Zimbabwe***  *Agreed*  ***Zimbabwe Youth Investment Group***  *Yes.* |  | Noted. We have covered the relevant section in our  presentation on status of infrastructure sharing.  Potraz conducted a survey on infrastructure sharing  during the first quarter of 2014 in preparation for this  exercise.  We take note of the report, but we do not believe we  can rely on it that much as it represents the interests  of individual operators and we also believe that it is  not adding much value to the detailed analysis  reflected in the consultation paper.  Again, we believe the Analysys Mason report does not  add value to the analysis in our consultation document.  Same as above.  Noted.  Noted.  Noted.  Noted.  Noted and agreed.  Noted.  Noted.  Noted.  Noted. |
| ***Question 6*** | ***Do you agree with the statement of the problem to be addressed with regards to infrastructure sharing and POTRAZ’s view on the need to review and improve on the existing framework? If not in agreement, give reasons.*** |  |  |
| ***Responses*** | ***Dandemutande***  *Yes. Without the inclusion of S.I. 28 of 2001 or at least listing of the relevant sections of the instrument in this document, we cannot comment specifically. In general, we believe costs are too high, infrastructures are unnecessarily duplicated and implementations are often undertaken haphazardly to meet licence requirements. This being the case, we support wholeheartedly the need to review and improve on the existing framework.*  ***Econet Wireless***  *Econet does not agree with statement of the problem to be addressed. Our concern is that the problem has not been adequately defined, adequately researched and stakeholders have not been invited to discuss and help identify the problem to be addressed. There is little quantitative and no survey research, references to international benchmarks are made in passing without any detail or analysis of what is being suggested by various writers and regulators drawing from these experiences. In this regard please see the various authorities referenced in our general submission, above.*  *The Consultation Paper states a number of factors which POTRAZ considers to be problems that can be addressed through infrastructure sharing. These can be summarised as (a) infrastructure duplication leading to unnecessary civil works; (b) infrastructure duplication leading to environmental impact; (c) infrastructure duplication and the high cost of procuring telecommunications equipment as major contributors to high cost of service provision; (d) uncontrolled deployment of rooftop towers on roofs which are not structurally safe enough to withhold them; (e) multiple authorities involved in granting construction permits, increasing time and cost of network deployment, and impact end-user prices.*  *Econet does agree that infrastructure sharing will address any of these issues. With regards factor (a), it is inconvenience that seems to be the issue. This can be addressed far more effectively through a standardised set of implementation guidelines to be used across the country. In addition, there is no certainty that building fewer but larger and more complex installations will be any less inconvenient to the public.*  *As regard factor (b), there is no certainty that fewer but larger and more complex sites will not have an even greater environmental impact, with greater power output assured from a single site. Regarding (c), we note that the referenced cost study does not identify infrastructure duplication as being responsible for the high cost of service provision, but only that it leads to inefficient markets. We further doubt that infrastructure duplication would be more important than the high cost of procuring equipment, considering that any savings generated by infrastructure sharing tend to get diluted on a per subscriber per month basis, to the extent that subscribers would not even realize the benefits.*  *We do not see how infrastructure sharing would address factor (d), unless it is inferred that greenfield towers might become more affordable if they are shared, thus reducing the extent of unsafe deployments of rooftop towers. We note however this is not necessarily fully correlated, as rooftop towers are typically deployed in urban areas where there is limited room to deploy greenfield towers. We do not in any case advocate the use of structurally unsound base station locations. In addition, loading more and more antennae on rooftop towers would make them even less stable.*  *We finally note that (e) cannot be directly addressed by network sharing, but concur that uniform guidelines and coordination would be a welcome development in the market.*  ***Liquid Telecoms***  *POTRAZ’s depiction of the problem is simplistic. There are many regulatory risks and complexities arising from the proposed intervention, as presented in sections 3.1 and 3.2 of the report prepared by Analysys Mason.*  *The consultation states a number of factors which POTRAZ considers to be problems that can be addressed through infrastructure sharing. These can be summarised as (a) infrastructure duplication leading to unnecessary civil works; (b) infrastructure duplication leading to environmental impact; (c) infrastructure duplication and the high cost of procuring telecommunications equipment as major contributors to high cost of service provision; (d) uncontrolled deployment of rooftop towers on roofs which are not structurally safe enough to withhold them; (e) multiple authorities involved in granting construction permits, increasing time and cost of network deployment, and impact end-user prices.*  *In the context of fixed networks we are not in agreement with any of the points.*  *Regarding (a), infrastructure duplication does mean additional civil works, but as noted by Analysys Mason in their study, infrastructure redundancy is a key element of quality of service and continuous availability of service. Therefore fibre route redundancy cannot be qualified of “unnecessary” without discrimination.*  *Regarding (b), as noted before, most fibre networks are buried and have no material impact on the environment and have no visual impact on landscapes. Long-haul fibre networks are sometimes riding on high-voltage power lines, but contribute to no additional visual element.*  *Regarding (c), we note that the referenced cost study does not identify infrastructure duplication as being responsible for the high cost of service provision, but only that it leads to inefficient markets – a statement with which we and numerous regulators around the world would profoundly disagree, given the success of infrastructure-based competition in telecommunications markets over the last three decades. We further doubt that infrastructure duplication would be the most important factor between the two, given the long lifetime of duct and fibre infrastructure and the high utilisation which Liquid Telecom already achieves through offering its services on an open access basis.*  *We have no comment on factor (d).*  *We note that (e) cannot be directly addressed by network sharing, but concur that uniform guidelines and coordination would be a welcome development in the market.*  *We have not seen POTRAZ’s analysis of the existing framework, which in our view works efficiently, except for the lack of participation of TelOne. We have also yet to see POTRAZ’s examination of the actual practical problems experienced regarding infrastructure sharing in the Zimbabwe market today, apart from a theoretical view of what problems might be experienced. We have not seen POTRAZ’s quantification of the expected benefits of its proposed intervention over simply improving the current commercially-based framework. Finally, although POTRAZ mentions “desired” levels of infrastructure sharing, it has not indicated what level is desirable. We have not seen any evidence that requires a change in current market practice apart from ensuring that all operators participate in good faith.*  ***Makoni Rural District Council***  *Yes we agree with the statement as there is need for uniform guidelines and coordination for construction of telecoms infrastructure to reduce unnecessary duplication of infrastructure and also to safeguard the environment so as to provide affordable services to the consumers.*  ***NECF***  *Agree*  ***Netone***  *Whilst the statement of the problem addresses the prevailing situation to some extent, it does not give any indications as to the load bearing of the said towers for example. It is not shown if the duplicated towers were designed to withstand usage from several network operators.*  ***Telecel***  *Agree*  ***Telone***  *Tel●One agrees with the statement of the problem to be addressed with regards to infrastructure sharing. POTRAZ as the regulator can improve the existing framework, monitor and review it.*  ***Telco***  *Yes, - The failure of SI 28 is in enforcement*  ***University of Zimbabwe***  *Agreed*  ***Zimbabwe Youth Investment Group***  *Yes.* |  | Noted.  Econet is free to submit what it views as the statement  of the problem for consolidation by the Authority. On  our part, we believe we did our best by conducting a  short survey on infrastructure sharing in 2014 which  we have shared with you. Our consultation paper,  though not exhaustive makes an effort to cover all  the pertinent aspects that we thought are critical for  coming up with a viable framework. What is important  to the authority is that the consultation document has  provoked us into deliberating on the various issue,  which is a very welcome development.  This is the whole essence of the consultation process  and the need for a framework that includes  implementation guidelines to be used across all service  providers.  Noted.  We maintain our statement that the recently concluded  cost studies identified infrastructure duplication as a  major cost driver in the provision of telecommunication  services in Zimbabwe, including the high cost of  procuring equipment.  Noted.  Noted. As above.  Noted as above.  Noted. As above.  Noted and agreed.  Noted.  Noted.  Noted.  Noted.  Noted.  Noted. |
| ***Question 7*** | ***Do you agree with the Authority’s views regarding the objectives of infrastructure sharing in Zimbabwe? If not please provide reasons or any additional objectives that need to be included.*** |  |  |
| ***Responses*** | ***Dandemutande***  *Yes*  ***Econet Wireless***  *The Consultation Paper suggests that the objectives of infrastructure sharing in Zimbabwe will be to*  *(a) reduce costs associated with rolling out telecommunications networks and will result in quicker service roll out and attainment of universal access to services.*  *(b) improve cost savings by minimising or avoiding unnecessary duplication of infrastructure*  *(c) ensure economic benefits arising from infrastructure sharing are harnessed for all telecommunications stakeholders*  *(d) protect the environment by reducing infrastructure deployment*  *(e) Encourage operators to account for public health and safety and the environment when deploying infrastructure*  *(f) Promotion of wide range of high-quality, efficient, cost effective and competitive telecommunications services across Zimbabwe*  *(g) Redirect network expenditure from supporting infrastructure towards core network upgrades and roll out of innovative and affordable services*  *(h) Promote fair competition through equal access on fair terms to bottleneck facilities*  *(i) Sustaining profitability by reducing costs of operators in light of increasing threat by OTT operators*  *We do not agree that (a) will result in either quicker service roll out or attainment of universal access to services than is already the case in market. Infrastructure sharing will only result in quicker service roll out in areas where there is already existing network coverage but Econet and Telecel have already proven that they are open to infrastructure sharing by sharing 120 towers. Further, the proposed regulations require operators to (i) demonstrate that all reasonable steps to investigate tower sharing have been applied; and (ii) conduct joint development of new infrastructure. Therefore, the deployment of new infrastructure will require consultation and negotiation with numerous stakeholders, including other operators and the regulator, as per the proposed regulations, which may be time consuming and actually slow down network roll out. Further, the requirement for joint development of new infrastructure may inhibit the expansion of universal service as the demand for telecommunications services in certain underserved areas may only be sufficient to sustain a single operator. Considering that infrastructure sharing is already being carried out, imposing additional infrastructure sharing regulations is unnecessary to achieving the stated objectives and may even be detrimental.*  *Infrastructure sharing, where successfully done, might result in cost savings for the operators as stated in (b). However, this is not likely to have any effect on the prices paid by individual subscribers as highlighted earlier. However this is totally dependent on operators paying their bills and if an operator does not pay, then sharing is likely to result in cost increases, which will then be passed on to consumers.*  *Econet is uncertain what is meant by the objective of ensuring that economic benefits of infrastructure sharing are harnessed for all stakeholders as stated in (c). Econet is of the view that the economic benefits arising from mandated infrastructure sharing are limited mostly to cost savings for a small number of operators, increased costs for others operators and as demonstrated earlier, few direct benefits for the government and end users are expected to arise from mandated infrastructure sharing.*  *We agree with the objective of protecting the environment as specified in (d). However Econet is concerned that infrastructure sharing will concentrate the environmental impact on a few nodes with far greater potential impact that if infrastructure was more distributed. If benefit could be achieved, this would argue in favour of sharing urban infrastructure and infrastructure such as TelOne’s local loops that is disruptive to duplicate. Environmental impacts are low for mobile towers in rural locations.*  *Although we agree with the objective of encouraging operators to account for public health, safety and the environment when deploying infrastructure as specified in (e), we do not believe that mandating infrastructure sharing is the way to do this. A better approach would be to ensure that companies have robust safety, health and environment policies. Econet already has a safety, health and environment policy that is set in line with the International Finance Corporation’s (IFC) requirements for telecommunications companies. In addition, we are currently developing an Environmental and Social Management System (ESMS) to support the policy.*  *We agree with the objectives under (f). However, we do not believe that regulations for mandated infrastructure sharing are necessary to achieve these goals as any licenced operator can readily access most existing towers in the market upon submitting a reasonable request. The existing practices are fit for purpose but should be extended more widely to those operators such as NetOne that are not complying with existing regulations (see evidence presented in the accompanying report by Analysys Mason).*  *It is conceivable that cost savings arising from infrastructure sharing will allow operators to redirect network expenditure towards core network upgrades and roll out of innovative and affordable services as intended in (g). However this is only on the basis of a rational commercial basis, equitable treatment and no operator being favoured over another. Operators – including Econet – that are subject to financial pressures are currently pro-actively sharing infrastructure where appropriate, and regulatory intervention is not required to achieve this objective. Econet suggests that it is only the operators that are not under pressure due to their state subsidies that require direct intervention.*  *Econet welcomes the objective of promoting fair competition through equal access on fair terms to bottleneck facilities as stated in (h). The ITU defines bottleneck facilities as “network elements or services that are provided exclusively or predominantly by a monopolist and are critical inputs to retail service. Also, it is not feasible, either economically or technologically, for retail competitors to duplicate the essential facility or develop a substitute for it.” (http://www.ictregulationtoolkit.org/2.3). By this definition, we do not believe there are any bottleneck facilities in the Zimbabwean mobile market. However, we welcome the principle of applying equal access on fair terms on any regulation imposed on the mobile market. Our understanding is that this implies that any infrastructure sharing regulations will be applied in a fair, reasonable and non-discriminatory manner. In addition, we believe that the fixed market may benefit from an exploratory study on bottleneck facilities and possible unbundling of such infrastructure.*  *Econet does not see OTT operators as a threat. In our view pro-actively sharing infrastructure where necessary and commercially viable is taking place in most segments of the markets and more regulatory intervention is not required to achieve this objective.*  ***Liquid Telecoms***  *POTRAZ lists several objectives behind infrastructure sharing in Zimbabwe. Each would need to be evaluated in more detail taking into account the situation in the market, the existing regulatory framework and clear objectives, as some limitations and drawbacks exist. POTRAZ seems to draw from international benchmarks to ground its objectives but it has only made passing references, without context or analysis, of other ecosystems. Moreover the lessons learned from other countries do not point to the same objectives and views as the ones proposed by POTRAZ, as summarised in the section 5 of the report prepared by Analysys Mason.*  *We address each of these separately:*  *• Ensure that the incidence of unnecessary duplication of infrastructure is minimized or completely avoided thus making a saving on scarce financial resources: POTRAZ needs to first correctly define the meaning of ‘unnecessary duplication’ as it could be construed to include any and every element of the network. To this end, we believe POTRAZ will need to undertake an extensive analysis of the infrastructure required to provide universal access as well as a detailed study of the existing infrastructure across the country. This is a significantly more detailed exercise that what POTRAZ seems to have completed till now. Such an exercise should help it to correctly assess and evaluate the nature of some infrastructure elements, and thus avoid duplication of only such non-duplicable network infrastructure elements.*  *• Ensure that the economic advantages derivable from the sharing of facilities are harnessed for the overall benefit of all telecommunications stakeholders: Liquid Telecom believes that the main beneficiary of such an initiative, which is targeted towards higher broadband penetration and quality of service, should be the end user. In fact, this would also be able to provide the maximum benefit to stakeholders such as POTRAZ, operators and technology vendors, through expansion of the market and higher uptake of services. The most direct and impactful way to unlock benefits to all stakeholders would be to unbundle the copper local loops, today only enjoyed by TelOne and too few end users, which have been funded by the taxpayer. Regarding the sharing of assets funded by private investments, POTRAZ needs to allow investors in network infrastructure to derive a reasonable rate of return on using these elements.*  *• Protect the environment by reducing the proliferation of infrastructure and facilities installations or deployment: Liquid Telecom complies rigorously with environmental obligations in rolling out its network. In a developing country like Zimbabwe, however, we would caution that concerns for aesthetics and environments need to be balanced with demands for job creation and investment in local infrastructure.*  *• Encourage the operators to take public health and safety and the environment into account when constructing and or deploying infrastructure: Liquid Telecom complies rigorously with public health and safety concerns and obligations in rolling out its network. We strongly encourage POTRAZ to carefully consider each regulation, and whether it may have unintended consequences in terms of job losses and reduced economic opportunity.*  *• Promote the availability of wide range of high quality, efficient, cost effective and competitive telecommunication services throughout Zimbabwe by ensuring optimum utilization of telecommunication resources: Liquid Telecom has built a strong reputation in the telecommunication industry in Zimbabwe for offering high quality, efficient and cost effective services. Liquid Telecom also shares some of its infrastructure with other commercially-driven operators, which has contributed to develop a service-based competitive market. This has been achieved by careful investment of private funds and a full utilisation of Liquid Telecom’s network assets. Meanwhile TelOne has enjoyed a monopoly on the use of local copper loops, which has translated in high market prices for telephony and ADSL services and an inefficient use of valuable, non-replicable network assets. Liquid Telecom agrees that POTRAZ should promote the optimum utilisation of the local copper loops, by mandating the unbundling of the local copper loops.*  *• Minimise operators’ expenditure on supporting infrastructures and to free more funds for investment in core network equipment upgrades and rolling out of innovative and affordable services: As specified above, we firmly believe that only those capital investments should be avoided which may be required to replicate infrastructure already existing but non-duplicable, by virtue of being highly capital intensive and non-sustainable, in nature. This includes the 300 000 copper local loops monopolised by TelOne, which are certainly non-duplicable. Mandating TelOne to unbundle the local copper loops could allow many service providers to offer a wide range of services, invest in core network elements such as value added service platforms, reduce retail prices and increase service penetration.*  *• Promote fair competition through equal access being granted to the Passive infrastructure of operators especially for bottleneck facilities and wherever applicable on fair terms: While this seems to be a correct objective behind infrastructure sharing, the statement itself can be deemed to be open to interpretation. For example, POTRAZ will need to better define ‘bottleneck facilities’ as well as ‘fair terms’ through an extensive evaluation of existing market conditions.*  *• To reduce both capital and operating expenditures in order to make services affordable whilst maintaining sustainable levels of profitability in the face of increasing use of over-the-top (OTT) services which are eating into operators’ revenues: We believe POTRAZ is combining completely different objectives as part of this statement. While it is true that OTT services are increasingly resulting in reduction of operators’ revenues, this is a completely different issue as compared to universal access to broadband. We strongly recommend that POTRAZ should only enable the creation of a level playing field in terms of network infrastructure and not unnecessarily concern itself with other issues such as OTT services. Decoupling such other issues from its primary objective will help POTRAZ focus on the primary issue at hand, i.e., enable universal access to broadband through sharing of network elements deemed to be critical while monopolistic / non-duplicable in nature.*  ***Makoni Rural District Council***  *Yes the views of the authority are commendable but there is need to be a framework or set down rules to help guide the agreements on sharing structures.*  ***NECF***  *Agree*  ***Netone***  *We agree with the Authority’s views regarding the objectives of*  *infrastructure sharing. It must also be explicitly stated that infrastructure sharing will enable network coverage to be extended to marginal areas and should therefore result in the Authority dropping the Universal Services Fund levy which was intended to cover such areas.*  ***Telecel***  *Agree*  ***Telone***  *Tel●One agrees with the Authority’s views regarding the objective of infrastructure sharing in Zimbabwe. However, sharing the last mile or competitive edge will be a great disadvantage to the first mover in the market in the short to medium term, but in the long term, the benefits can be exploited by both stakeholders in the market.*    ***Telco***  *Yes*  ***University of Zimbabwe***   1. *Agreed but there is no explicit statement on Ensuring a High Quality network* 2. *There is no explicit statement on protection of innovative providers*   ***Zimbabwe Youth Investment Group***  ***Yes.*** |  | Noted.  Noted.  We do not agree on the adequacy of the current  Framework, which we believe can be improved on  to stimulate serious infrastructure sharing.  Noted.  Noted  Noted.  Noted.  Noted.  Noted.  Noted.  Noted.  Noted.  Noted.  Noted.  Noted.  Noted.  Noted.  Noted.  Noted. |
| ***Question 8*** | ***Do you agree with the Authority’s view on the need for infrastructure sharing to extend to other utility providers such as roads, municipalities, water, electricity and broadcasting?*** |  |  |
| ***Responses*** | ***Dandemutande***  *Yes. We do question the practicality of this point, however, given the number of different regulatory bodies involved.*  ***Econet Wireless***  *Econet agrees that infrastructure sharing with providers of roads, water, electricity, broadcasting and municipalities will be beneficial towards providing for a positive environmental and aesthetic impact. There is already significant sharing of infrastructure between telecoms operators and utility providers, broadcasters and municipalities. For example, just under half of all our shared sites are currently shared or leased from non-telecoms providers: we are sharing 10 sites with Transmedia Corporation, 20 sites with the National Railways of Zimbabwe (NRZ), leasing 27 towers from Zimbabwe Electricity Supply Authority (ZESA) and 61 towers from the relevant councils. Evidently, regulatory intervention is not required to achieve this objective.*  ***Liquid Telecoms***  *Given network deployment and expansion generally requires, in addition to approval from POTRAZ, interaction with, and approvals from, different entities, such as those governing roads, municipalities etc., Liquid Telecom feels it would be beneficial if the authority’s view on infrastructure sharing be extended other such involved parties. If implemented correctly, such an initiative could help to expedite processes through faster approvals.*  *One lesson learned from other countries, as mentioned in section 5.5 of the report prepared by Analysys Mason, is that mandated infrastructure sharing is more typically observed on government-funded infrastructure. In this view, the state-owned utility providers should be involved in further discussions.*  ***Makoni Rural District Council***  *Yes the authorities view is acceptable and its view facilitates the availability of affordable resources achieved through cost sharing between stakeholders.*  ***NECF***  *Agree. Sharing brings with it reduced unit costs due to the reduction in fixed costs for the providers.*  ***Netone***  *We totally agree that there is need to extend infrastructure sharing to*  *other utility providers such as roads, municipalities, water, electricity*  *and broadcasting wherever possible which we are currently doing*  ***Telecel***  *Agree*  ***Telone***  *Tel●One agrees with the Authority’s views on the need for infrastructure sharing to extend to other utility providers such as roads, municipalities, water, electricity and broadcasting. This may reduce costs like road damages, inconvenience for traffic in towns and cities and positive impact on environment. However, POTRAZ should come up with the model of extending the infrastructure sharing which clearly addresses issues like security of the equipment shared.*  ***Telco***  *Yes, but the different regulatory agencies( roads, municipalities, water, etc) should harmonise their regulatory policies*  ***University of Zimbabwe***  *Agreed*  ***Zimbabwe Youth Investment Group***  *There is a need for infrastructure sharing to extend to other utility providers. In particular with electricity in reference to communications. ZETDC has an infrastructure in place that can be utilized by potential entrants into the communications sector. Further improving service through smart grid applications that cater for various services away from electricity.* |  | Noted. The starting point is to create a database on  infrastructure in the country with the assistance of  NECF.  Noted.  Noted.  Noted.  Noted.  Noted.  Noted.  Noted.  Noted.  Noted  Noted. |
| ***Question 9*** | ***Do you agree with POTRAZ view on the need for setting up a one stop shop infrastructure sharing facility aimed at standardising and monitoring infrastructure roll out? If so, how can this be crafted and who should be responsible. If not in agreement, kindly give reasons thereof.*** |  |  |
| ***Responses*** | ***Computer Society of Zimbabwe***  Yes. The group felt that it might not be fair for small players to be competing directly against bigger players.  ***Dandemutande***  *No. There are too many questions here for us to answer in the affirmative. We believe this will just create another agency incurring costs, increasing inefficiency in the industry and thus more delays for the operators. We do not need more bureaucracy and more levies in this industry. Who will fund it? Who will operate it? Who will ensure impartiality?*  ***Econet Wireless***  *Econet is of the view that a one-stop shop is not required. There is a lengthy examination of the role of the regulator in interconnection and facilities leasing disputes in the ICT Regulation Handbook referenced previously: see http://www.ictregulationtoolkit.org/2.3.5 and http://www.ictregulationtoolkit.org/6.6#s6.6.2 Econet encourages POTRAZ to review that publication, as it indicates current international best practice on the issue. The view expressed is that the regulator is better suited as a facilitator for dispute resolution (for example through mediation) and final determination as a last resort. However regulatory intervention of the sort proposed is not encouraged.*  *Even if POTRAZ does chose to play this role, which we discourage, then it should be an optional process and operators should not be impeded from proceeding with commercial arrangements, as provided in the Guidelines.*  *There is little or no precedent of such a one-stop shop being implemented and the success of previous attempts is unclear. It would require significant cross-Government collaboration.*  ***Liquid Telecoms***  *Liquid Telecom supports an improved co-ordination among the various stakeholders that have any role in the deployment of network infrastructure. To this end, a one-stop shop for standardising rules and authorisation for network roll out could be helpful. The process around the monitoring of infrastructure roll out must be clarified before we can comment.*  *In terms of its structure, we believe POTRAZ could invite representatives from all Government departments which have a say in network deployment and bring them on a common platform. It would help the entire telecommunication industry, and consequently the larger public, through faster rollouts, less public disturbance, and direct economic benefit to POTRAZ and operators, to name but a few, if such a Government body can implement standardized approval procedures for network deployment activities. However, such a committee should have the authority to provide approval for activities such as trenching, ducting etc. and thus should involve people at appropriate positions within each department. Additionally, it should have a strong legal position within the Government such that decisions / approvals from such a committee are not easily overruled or invalidated by any one of the involved Government departments, as this could lead to unnecessary and unwanted delays. Finally, it should have clear rules and regulations governing it which highlight key areas such as its membership and structure, legal bindings and arbitration processes, which will serve it well in the future.*  ***Makoni Rural District Council***  *Yes there is need for Setting up of a one stop shop infrastructure sharing facility aimed at standardizing and monitoring infrastructure so as to keep track of operators and safe guard the environment as well as to curb costs to improve quality of service.*  ***Netone***  *The need for setting up a one-stop shop is a noble idea. However we*  *are of the view that a one-stop shop for sharing of rights of way by*  *telecommunications companies and local authorities/other service*  *providers should be different from the one-stop shop looking at*  *sharing base station infrastructure as issues to be looked at are*  *completely different.*  ***NECF***  *Agree. The one stop shop could also work as a dispute settlement platform to expedite conflict resolution and avoid service disruption.*  ***Telecel***  *Agree on condition that all the relevant stakeholders will be housed thereat and no external authorisation shall be necessary outside the shop.*  *The shop should include all stakeholders including government, MNO’s, local authorities, regulator and traditional leaders.*  ***Telone***  *Tel●One agrees with POTRAZ view on the need for setting up a one stop shop infrastructure sharing facility aimed at standardising and monitoring infrastructure roll out. A legal provision should be in the Postal and Telecommunications Act and POTRAZ as the arm of Government should be responsible for enforcing the infrastructure sharing framework. However, the framework should be crafted with the involvement and participation of all operators in the country. The one stop shop is clearly outlined in the ITU guidelines in Appendix 1, point (i).*  ***Telco***  *No. Skills, Bureaucracy, Policy framework issues, etc, are problematic*  ***University of Zimbabwe***  *Agreed as long as the following issues are taken care of*   * 1. *There is need to ensure minimum and maximum expected turnaround with regards ensuring efficient execution of work.*   2. *Interfacing with the local authorities has to be seamless.*   3. *Confidentiality has to be guaranteed so that innovation and competitive advantage is not compromised.*   4. *Whoever is responsible should not be directly funded by the providers. The funding of such a one-stop-shop should be independent of providers.*   ***Zimbabwe Youth Investment Group***  *There is need for a One Stop Shop with regards to infrastructure sharing.*  *The main responsibility should fall on the regulator – POTRAZ whom should work in conjunction with the relevant government departments i.e. EMA, Local government.*  *The industry should also be a stakeholder through the formation of a committee which represents all parties concerned with infrastructure sharing big and small.*  *This will ensure that everyone within the value chain has a voice.* |  | Noted.  Noted. Maybe we need to clarify further.  Why not be creative and be the first ones to have a  one stop shop. All that is needed is a database which  is linked to concerned authorities for purposes of  processing and approvals.  Noted.  Noted.  Noted.  Noted.  Noted.  Noted.  Noted.  Noted.  Noted. |
| ***Question 10*** | ***Are you in agreement with the above cited roles of POTRAZ in facilitating infrastructure sharing? If not in agreement, what do you think needs to be included or excluded from the roles highlighted above?*** |  |  |
| ***Responses*** | ***Dandemutande***  *Yes. We do, however, query why the Regulator needs to approve all agreements among operators. This seems unwarranted. The Regulator should rather be the impartial arbitrator and advisor in cases where operators are unable to agree on the sharing contract.*  ***Econet Wireless***  *Econet notes that POTRAZ already has a significant role in terms of the Act and the Guidelines (particularly Guideline 11). Econet encourages POTRAZ to focus on fulfilling its existing mandate, rather than seeking to expand it, while the existing mandate is not addressed.*  *In this regard, POTRAZ needs to ensure that it follows international best practise by implementing mandatory sharing only where commercial arrangements are insufficient, an operator owns bottleneck facilities, has significant power and/or where the infrastructure is funded by the government or the taxpayer. Particular attention must be paid to the fact that in the United States of America, infrastructure sharing is mandated on the incumbent operators in the form of LLU while in the EU all state-funded infrastructure must be accessed on an open access basis.*  *In all of these cases, the role of the regulator is to observe, monitor and deal with disputes should they arise. Econet encourages POTRAZ to focus on this core role and not be distracted by issues not directly within its purview.*  *We agree that POTRAZ should encourage but not mandate the redevelopment of existing facilities to increase the capacity in order to encourage infrastructure sharing. Such redevelopment would preferably be at the cost of the access seeker (or otherwise by commercial agreement) or in the case of universal service obligations, at the cost of the universal service fund. We agree that POTRAZ should advise local and regional authorities on adopting schemes that would encourage infrastructure sharing of state-funded infrastructure. Engaging the different levels of government in infrastructure sharing would go a long way in ensuring an efficient infrastructure sharing market. We agree that POTRAZ should support the development of the capability of operators to competently address infrastructure sharing issues. This will likely increase the ability of operators to negotiate and engage in effective and mutually beneficial infrastructure sharing agreements.*  ***Liquid Telecoms***  *POTRAZ lists several objectives behind its role in infrastructure sharing in Zimbabwe. While these seem to be theoretically sound, POTRAZ has not described, clarified and analysed the current regulatory and legal frameworks to ground its suggestions for its own role. We would like each to be analysed in more detail:*  *• Identify areas that require mandatory infrastructure sharing: We agree that this should be a logical step towards a level playing field as far infrastructure sharing in fixed networks is concerned. In the context of POTRAZ’s ambition to follow international benchmarks, this requires a full programme of studies, surveys and analysis, in order to set up objectives and plans that, when implemented, will not have negative impacts on the market and specific market players.*  *• Encourage redevelopment of existing facilities amenable to infrastructure sharing to increase their capacity: POTRAZ will have to undertake deeper analysis to specify exact modalities of such a process. For instance, will the owner of said infrastructure need to spend additional funds for this, what will be the expected returns on such an investment, would the said infrastructure need to be expanded to accommodate how many other operators / how much capacity etc.*  *• Advise local and regional authorities on the adoption of schemes which would encourage the sharing of infrastructure: We would encourage POTRAZ to involve other local and regional bodies, such as other public utility departments including roads, water and electricity, to participate in such as decision-making process. Advising local and regional bodies will no doubt help in expediting the approval process and avoid unnecessary delays.*  *• Support the development of the capability among operators to deal with issues of infrastructure sharing in a competent way: Liquid Telecom agrees strongly with this statement. In an accompanying submission to POTRAZ we have cited numerous case studies regarding network infrastructure sharing globally. This includes the very markets which POTRAZ had mentioned in its Consultation paper released in October 2014. Across all these markets, regulators have abstained from interfering in discussions among operators regarding infrastructure sharing. Regulators have, in fact, encouraged operators to reach agreement on such issues bilaterally, and have stepped in only in rare cases to resolve disputes brought to them. Moreover, given the vast infrastructure required to cover a country and offer universal broadband access, as well as the complexity posed by the number of operators and their various business models, it may not even be feasible for a regulator to govern such a process. Any such move by POTRAZ will only bring significant delays into the system.*  ***Makoni Rural District Council***  *Yes we agree*  ***Netone***  *We agree with the above cited roles of POTRAZ but clarification is*  *required on the statement “Encourage redevelopment of existing facilities amenable to infrastructure sharing to increase their capacity”*  ***NECF***  *Agree. Local and regional authorities will also be very key as they are the ones that license digging, trenching and erecting masts.*  ***Telecel***  *Agree. However POTRAZ should play a more active role to ensure efficiency and fast resolution of disputes and/or grievances*  ***Telone***  *Tel●One strongly feels that there should be clear cut policy on pricing issues, upgrading issues, disruption of service during periods of upgrades and maintenance issues among other issues. These issues will be addressed by the crafted framework by POTRAZ in consultation with all the operators. However, Tel●One is in agreement with the cited roles of POTRAZ in facilitating infrastructure sharing. According to ITU, regulators should recognize the importance of holding public consultations with all stakeholders on the various strategies and regulations that deal with infrastructure sharing. See Appendix 1, point (a).*  ***Telco***  *Yes*  ***University of Zimbabwe***  *Agreed as long as the following issues are taken into consideration*   1. *Continued encouragement of innovation* 2. *Continued and deliberate protection of Intellectual Property*   ***Zimbabwe Youth Investment Group***  *Yes.* |  | Noted. We need to approve all agreements for  purposes of safeguarding competition.  Noted. Our position is that the current framework is  not comprehensive enough to facilitate effective  infrastructure sharing.  Agreed. We do not see where POTRAZ intends to go  beyond its mandate. POTRAZ is empowered  The Authority, from time to time shall determine which facilities  are required to be shared, including Main Distribution Frame  (MDF) rooms, ducts, megabites towers, land, exchange space,  cablerisers and cable entry points.  POTRAZ’s proposal is not to mandate the  redevelopment of existing facilities- access seekers  who propose to do so should be allowed. The desired  framework should be flexible enough to allow such  possibilities.  Noted.  The framework should facilitate redevelopment of exist  -ing facilities where feasible.  Noted.  Agreed. But there is need for a framework within  Which operators negotiate agreements. This is  international best practice.  Noted  Noted. We are not saying this is applicable to all  existing infrastructure, but where feasible and  necessary and in the public interest.  Noted.  Noted.  Noted.  Noted  Noted.  Noted. |
| ***Question 11*** | ***Are you in agreement with the conditions under which POTRAZ may order the discontinuation of an infrastructure sharing arrangement? You may suggest other conditions.*** |  |  |
| ***Responses*** | ***Dandemutande***  *In principle “yes” but we believe the conditions listed are not legally enforceable due to vagueness and will need further consideration and legal input before they are of value. There is also need to consider interaction of unlicenced entities in the sharing of infrastructure.*  ***Econet Wireless***  *Econet is of the view that POTRAZ should be very cautious in engaging with commercially agreed arrangements. Econet also notes**POTRAZ’s role in promoting competition on an ex ante basis, while ex post issues are dealt with by the Competition Act. POTRAZ lists two objectives behind infrastructure sharing in Zimbabwe, both of which we would like to evaluate in more detail:*   1. *Where it determines that an infrastructure sharing arrangement is inconsistent with the scope and terms and conditions of relevant Licence(s): While we would, in principle, be inclined to agree to this statement, POTRAZ will need to be more specific here as it could be open to interpretation, depending on the scope of the license and must be subject to the Act and the Guidelines.*   *2. Where it identifies a risk of lessening of competition as a consequence of such infrastructure sharing: As mentioned in our response to Question 7, we have highlighted that though we support initiatives by POTRAZ to increase network infrastructure sharing, POTRAZ should ensure that such a move does not encourage operators to unnecessarily limit their own capital investments and wait for other operators to build out infrastructure which they can then share. To this extent we are in agreement with the statement above. However, POTRAZ will need to be more specific in defining ‘lessening of competition’ as it could be construed to mean number of operators, ‘sufficiently low end-user prices’ etc. POTRAZ will also need to be extremely rigorous in analysing the situation to reach such a conclusion.*  ***Liquid Telecoms***  *We would like to express caution about the context under which POTRAZ might order the discontinuation of a commercially-agreed sharing agreement. We would expect that POTRAZ exhaust all other options before ordering the discontinuation of such an arrangement.*  ***Makoni Rural District Council***  *Yes we agree*  ***NECF***  *Also, where sharing results in increased costs to the consumer*  ***Netone***  *Clarification is required on* ***Q11*** *by giving specific examples of the*  *stated conditions under which POTRAZ may order discontinuation of*  *an infrastructure sharing arrangement in order for us to give a*  *qualified response.*  ***Telecel***  *Agree. Other conditions should include where there is breach of terms and conditions of an agreement including but not limited to non-payment of fees, refusal of access or tempering with other party’s equipment*.  ***Telone***  *Tel●One agrees with the conditions under which POTRAZ may order the discontinuation of an infrastructure sharing arrangement.*  *Another condition proposed is that POTRAZ may intervene and discontinue when another stakeholder is suffering or being exploited buy another stakeholder.*  *Another condition is when there are disputes in upgrades and costs of upgrades POTRAZ may order the discontinuation if the dispute is difficult to resolve. According to ITU guidelines, regulators should introduce necessary enforcement to ensure compliance and successful adoption of infrastructure sharing. See appendix 1, point (k).*  ***Telco***  *No. We do not agree with point 1*  ***University of Zimbabwe***  *Agreed*  ***Zimbabwe Youth Investment Group***  *Yes.* |  | Noted.  Noted. However, the whole essence for a  comprehensive framework is to enable POTRAZ to take  preventive measures “before the event” (ex- ante)  POTRAZ will consider its case based on its merits in  Line with the Act and the scope of the licence.  Noted.  In a regulated sector, commercial agreements can be  subject to regulatory scrutiny in the interest of  preventing any form of anti- competitive behaviour or  any outcomes that are not in the public interest.  Noted.  Noted.  The list can be long but this includes where the  Agreement is outside the scope of any of the parties,  deemed anti- competitive as well as not in the public  interest.  Agreed. However issues to do with non -payment of  Fees between operators are outside the scope of our  mandate as such issues should be covered by the  commercial agreement.  Noted, in particular abuse of significant market power.  Noted.  Noted  Noted.  Noted. |
| ***Question 12*** | ***Given the proposed approaches to infrastructure sharing, do you agree with POTRAZ view to make site/tower, backhaul, duct sharing mandatory in both rural and urban areas; Deep passive site sharing mandatory in rural areas and Active RAN sharing optional to operators? If not in agreement, please give reasons.*** |  |  |
| ***Responses*** | ***Computer Society of Zimbabwe***  *The group agrees with POTRAZ view on mandatory sharing of site/tower, backhaul, duct sharing in rural and urban areas.*  *Concerns/Comments:*   1. *If you make sharing mandatory you derail the progress of coverage.*      1. *We don’t want a situation whereby we have five towers in one mountain. Why don’t the others with no antennas in other areas be allowed to use the already existing infrastructure?*   *The ideal scenario is that once infrastructure is in place, it should be mandatory for any player who wants to introduce service in that area to use the existing infrastructure*  ***Dandemutande***  *We are not in agreement with the proposed approaches listed. The approach is fair but we believe implementation of a number of these points will be problematic. In general, we believe there is a need for greater appreciation of the financial aspects of sharing given the huge cash resources involved in building a network before this section is acceptable to operators in a practical sense. More specifically, point 5.4, for example, will need further review as to how it will be implemented in practice and how enforcement will apply to submarine cable landing stations.*  ***Econet Wireless***  *Econet does not agree with the proposed approach at all.*  *We are surprised that POTRAZ considers such measures on the fibre networks to be necessary, given that backhaul is already available on an open access basis from at least one party.*  *There is further no mention of regulatory intervention on the existing copper network, which is far more extensive than any existing fibre networks and which is, through the government’s shareholding, ultimately funded by the taxpayers. The existing copper network is the most suitable infrastructure to meet the objectives of this consultation.*  *Further, under POTRAZ’s proposals the deployment of new infrastructure will require consultation and negotiation with numerous stakeholders, including other operators and the regulator, which may be time consuming and unnecessarily onerous resulting in slower network roll out. Econet does not understand or agree with the proposal that would delay and possibly prevent infrastructure deployment. Econet would have thought that POTRAZ would seek to reduce the obstacles to deployment, rather than increase them. This is particularly surprising when there is no suggestion made regarding opening up state subsidised networks and infrastructure.*  *It is also worth noting that the proposed interventions will require a significant staff compliment and overhead. POTRAZ gives no indication from where this added capacity and budget will emanate. Possibly from licence fees or USF contributions, thus lowering the available funds to actually deploy infrastructure.*  *Econet further does not agree that regulatory intervention is required with respect to site sharing/co-location/tower sharing. As discussed earlier, the tower sharing market is vibrant and is already governed by the Guidelines. Econet is satisfactorily sharing 254 towers with Telecel, ZESA, municipalities and Transmedia Corporation. Meanwhile Econet has requested to share towers with NetOne on numerous occasions. NetOne’s non-responsiveness to these requests indicates a lack of financial incentive on their part to share towers, and non-compliance with existing regulation and licence conditions. Mandating operators to collaborate on the building of new towers serves no purpose and only has the effect of increasing bureaucracy unnecessarily thus slowing down and complicating network roll out.*  *We do not agree that access to ducts and rights of way must be shared, unless the parties elect to do so on a commercial basis. We do not find it of any value to open access to ducts and rights of way in routes where an open-access network already has a presence.*  *We do not agree with the Authority’s view on mandating deep site sharing in rural areas, largely because the term is not defined and there is no indication as to what this is and how it will work. However, we would urge POTRAZ to do more rural site deployment using money from the Universal Service Fund (USF). To date, Econet has contributed over US$55 million towards the USF and is aware of only 11 sites built with this and contributions from all other operators. More funds should be made available to replicate this successful intervention rather than requiring risky new operating models.*  *We agree that RAN sharing must remain optional and left to the discretion of the operators. At this stage, we do not consider the market to be mature enough for the onset of active infrastructure sharing.*  *Econet encourages POTRAZ to focus on the implementation of the existing framework through the Guidelines, rather than chasing ephemera that may not* *materialise.*  ***Liquid Telecoms***  *Liquid Telecom disagrees strongly with the statements and believes these statements are premature and arbitrary while also being overarching. As made clear in previous answers, POTRAZ has not adequately evaluated the current status of sharing or identified where problems may currently be experienced, and it has not provided evidence that any such intervention is necessary.*  *At the outset we would like to reiterate that our primary objective, as far as infrastructure sharing is concerned, is universal broadband access. However, as we have repeatedly highlighted throughout our previous answers, any premature and unplanned step could jeopardise the telecommunication ecosystem. We believe that POTRAZ has not thought through the implications sufficiently well. For one, POTRAZ would need to identify bottlenecks in the system that could limit network expansion and whether any operator has monopolistic access to any economically non-replicable infrastructure. Only such infrastructure should then be mandated to be shared on a non-discriminatory basis. A prime example of this is the copper network of TelOne in Zimbabwe – it connects than 300,000 premises, has been funded by the tax payers and is now economically non-replicable.*  *Secondly, infrastructure sharing has already been undertaken by operators in the market, even in the absence of any new regulation. For instance, Liquid Telecom shares its fibre network with other operators such as Powertel, Econet, Telecel and YoAfrica, operators Liquid Telecom’s own subsidiary ZOL competes against in the retail market.*  *Further, urban and rural divides in any such policy are usually not as clear as they might seem to be. For example, implementation of a duct sharing mandate may not be the solution in a rural area which does not have a duct at all. The assumption that the first operator to build ducts will also have to share it may not be valid as, in some situations, no operator may be willing to roll out infrastructure for fear of lack of a business case due to lower affordability levels. This has been a common issue globally and regulators have generally subsidised infrastructure rollout in such areas, which has subsequently been shared.*  *Hence, any basis for mandated infrastructure sharing should be on the basis of extensive analysis and carefully thought through policies – and should justify why they would be preferable to enforcing the existing regulations on non-collaborative operators such as TelOne. As a result, we strongly recommend that POTRAZ should refrain from making any such wide ranging regulations and should rather try to evaluate the ground realities in more detail.*  *The report prepared by Analysys Mason on infrastructure sharing benchmarks and lessons learned proposes several recommendations to POTRAZ, from implementing non-discriminatory interventions when required, focusing on the copper local loops as an essential infrastructure currently under monopoly, a bias towards light regulation favouring commercial agreements and mandating government-funded networks to be opened and shared. The recommendations by Analysys Mason clearly guide POTRAZ towards a more thoughtful and balanced process regarding infrastructure sharing and a focus on tax-payer funded essential infrastructure (such as the local copper loops) to benefit all stakeholders in the market.*  ***Makoni Rural District Council***  *Yes we agree*  ***NECF***  *Also, where sharing results in increased costs to the consumer*  ***Netone***  *Whilst infrastructure sharing of site/tower and duct sharing could be*  *made mandatory the same cannot be said of RF backhaul which has spectrum limitations more so in this age of Internet Protocol(IP) microwave radio. Site sharing must also look at the type of towers and their designs to determine their suitability for site sharing before putting them in the mandatory sharing bracket*.  ***Telecel***  *Agree provided that each MNO has unhindered access to the shared site especially in cases of faults or downtime. Reference is made to prevailing status with regard Netone and Tel-one. In addition provision must be made to allow installations at the same height on the tower.*  ***Telone***  *Tel●One agrees with the proposed approaches to infrastructure sharing of site/tower, backhaul and duct sharing mandatory in both rural and urban areas. However, sharing of Radio Access Network (RAN) depends with the type of technology invested by operators. There are scenarios whereby RAN can be shared in mobile networks but cannot be shared between fixed to mobile network. Clear guidelines on infrastructure sharing should be in place to guide participants in the sharing process. The sharing should be done in phased approach to avoid conflicts between Infrastructure provider and Infrastructure seeker****.***  ***Telco***  *Yes, However this is only feasible in a managed framework.*  ***University of Zimbabwe***  *Agreed*  ***Zimbabwe Youth Investment Group***  *Yes.* |  | Noted and agreed. When we say mandatory we are  saying no access seeker shall be denied request to  share where it is technically feasible and economically  viable. We are not saying that operators can only  proceed to build infrastructure on condition that it can be  shared.  Noted.  The framework is meant to apply to all operators  Owning infrastructure in Zimbabwe. No single  Operator is exempted from the obligation to share  Existing infrastructure where its technically feasible.  Our position is that the regulator has to put in place the  Appropriate framework which facilitates infrastructure  Sharing. We are not reinventing the wheel. Many other c  Countries such as Ghana, Tanzania, Botswana, Kenya  have comprehensive infrastructure sharing frameworks  This is not a forum to discuss USF.  Noted.  We need a more comprehensive framework.  POTRAZ has attempted to give a snapshot on the status  of infrastructure sharing and a statement of the  problem. Though not exhaustive, we believe we have  a good basis on which an appropriate and  comprehensive framework can be crafted.  Noted.  Noted- but the level of infrastructure sharing is not  Desirable given the level of infrastructure duplication  Where each operator is building their own network  Where sharing is feasible and more viable.  Each case will be considered on its own merits.  Noted.  Noted. The Authority favours a comprehensive  framework which gives it the flexibility to make  appropriate proportionate interventions. We will not  be drawn into adopting recommendations that  seek to protect/ advance for the interests of any  individual operators.  Noted.  Noted.  Noted.  Noted.  Noted.  Noted.  Noted.  Noted. |
| ***Question 13*** | ***Do you agree with the need for licensees to enter into formal infrastructure sharing agreements and the cited conditions under which sharing agreements shall be arranged? If not in agreement give reasons and cite alternative/additional conditions.*** |  |  |
| ***Responses*** | ***Dandemutande***  *Yes. As an operator we would prefer to see the Regulator utilise the services of professional arbitrators or accountants to ensure transparent, impartial and mutually acceptable decision making in cases of dispute rather than seeing the Regulator becoming directly involved in commercial decisions of operators. We also believe that a non-discriminatory “first come first served” basis must initially be subject of financial due diligences of the applying operator/s.*  ***Econet Wireless***  *Econet is of the view that licensees may enter into formal infrastructure sharing agreements if they so choose. However, we do not believe there is a need for new regulation or processes regarding infrastructure access as a functioning market for infrastructure sharing already exist and any effort can be expended on implementing the Guidelines. We would however urge POTRAZ and the State to make all efforts to ensure that TelOne and NetOne comply with regulatory and licence obligations to share their infrastructure in good faith with other parties.*  *As regards tariffs and charges, Econet does not agree with POTRAZ making binding decisions. These should be commercially negotiated, having regard to the principles outlined in the Guidelines and having regard to the recommendations in the ICT Regulation handbook about the regulators role, referred to above.*  ***Liquid Telecoms***  *The licensees should be able to enter into infrastructure sharing agreements if and when it commercially makes sense to them. We would again urge POTRAZ to refrain from interfering in the modalities of sharing, such as contract period, prices etc., and encourage operators to decide such matters bilaterally. POTRAZ could intervene if one or more of the operators ask POTRAZ to do so.*  *We disagree with the requirement to submit agreements to share network infrastructure to POTRAZ for approval, as this will serve only to introduce delay and uncertainty into the process of sharing. POTRAZ has not indicated any benefit from such review and approval, nor grounds on which it may refuse approval.*  ***Makoni Rural District Council***  *Yes we agree*  ***NECF***  *Agree. There is need to have clarity on the costs of sharing and the role of all parties involved in the sharing*  ***Netone***  *We feel that the cited conditions do not have enough information for*  *one to make an informed decision.*  ***Telecel***  *Agree. However we suggest that the period of approval be reduced to 7 days. Further there is also need for the right of appeal to be provided in respect of the decision of the regulator.*  ***Telone***  *Tel●One agrees with the proposed need for licensees to enter into formal infrastructure sharing agreements and the cited conditions under which sharing agreements shall be arranged. However, ITU guidelines indicates that infrastructure sharing should not compete for end-users. See appendix 1, point (g).*  ***Conditions of sharing agreement***  ***a)*** *An operator shall reserve the right to refuse an application for  infrastructure sharing on grounds of;*  * Insufficient capacity*  * Safety, reliability, incompatibility of facilities*  *b) The Infrastructure Provider shall not:*  * Obstruct, delay negotiations in resolving disputes.*  * Refuse to provide information relevant to an agreement including  information necessary to identify the facility needed.*  * Refuse to designate proper representative to expedite negotiation*  ***Telco***  *Yes*  ***University of Zimbabwe***  *Agreed*  ***Zimbabwe Youth Investment Group***  *Yes.* |  | Where a case requires the services of a specialized  Profession, The Authority hires such expertise if it  deems it does not have the required expertise within  its ranks.  Noted. ??  We believe the market for infrastructure sharing is not  Functioning optimally- hence we need to improve the  framework to stimulate the market.  Agreed. However these should be within an agreed  methodology and applied on a non- discriminatory basis.  Agreements are necessary to minimise disputes and  Other undesirable outcomes of infrastructure  sharing arrangements. Guidelines on agreements  should be provided in the framework.  POTRAZ should be allowed to play its ex-ante role.  Noted.  Noted.  Noted.  Noted. Although we feel 7 days is too short a time to  allow in depth analysis.  Noted.  Noted.  Noted.  Noted. |
| ***Question 14*** | ***Do you agree with the above proposed procedure for infrastructure sharing, the cited conditions for refusal to share infrastructure and the expected time frame within which a request and negotiations for infrastructure sharing must be responded to and concluded? If not in agreement give reasons and alternative suggestions.*** |  |  |
| ***Responses*** | ***Dandemutande***  *No. Essentially we believe this is a commercially based process that cannot be Regulator driven. We do not believe the Regulator role should extend beyond registering the agreement and must exclude any sort of approval process.*  *Finally, the matters listed in point 6.1 are too vague to be of value. For example, who will decide on sufficient capacity? Is the 50% reserved for sharing decided at establishment? What is capacity?*  ***Econet Wireless***  *Econet does not believe there is a need for new regulation or processes regarding infrastructure access as a functioning market for infrastructure sharing already exists and the Guidelines provide an adequate framework if intervention is required. We would however urge POTRAZ to make all efforts to ensure that TelOne and NetOne comply with regulatory and licence obligations to share their infrastructure in good faith with other parties.*  ***Liquid Telecoms***  *Liquid Telecom has negotiated bilaterally several infrastructure sharing agreements with other operators on a commercial basis.*  *We express our reservation regarding both ‘valid’ grounds of refusal cited by POTRAZ, namely, insufficient capacity and safety, reliability and incompatibility of facilities. This seems to contradict one of the roles that POTRAZ had cited for itself in Question 10, which was to “Encourage redevelopment of existing facilities amenable to infrastructure sharing to increase their capacity”.*  *On a related note, we are unclear about the applicability of reservation of not more than 50% of existing infrastructure for infrastructure seekers, as this could keep changing with changes in infrastructure. It also obviously depends of what kind of infrastructure POTRAZ might be considering. POTRAZ does not seem to have thought through this in sufficient detail. POTRAZ should either provide additional detail or acknowledge that existing sharing arrangements are suitable and should continue.*  *Separately, and as mentioned in response to Question 13, we would urge POTRAZ to not mandate operators to submit each and every infrastructure sharing agreement for approval to itself. This would only result in unnecessary, and definitely avoidable, delays, and POTRAZ has not suggested any benefit that might arise from doing so.*  ***Makoni Rural District Council***  *Yes the proposed procedure is viable and reasonable to the development of telecoms industry in Zimbabwe.*  ***NECF***  *The procedure seems to the ok.*  ***Netone***  *We agree with the cited conditions for refusal to share infrastructure*  *but the expected time frame should be increased to more than 30 days. The Authority must also prescribe minimum percentages of national network coverage expected for an operator to qualify for infrastructure sharing to motivate all operators to develop infrastructure.*  ***Telecel***  *Agree. Our suggestion is that the periods for response and negotiation and finalisation be reduced to two (2) weeks apiece to enhance efficiency.*  ***Telone***  *Tel●One does not agree with the proposed procedure for infrastructure sharing. This is because Tel●One feels if negotiations is left to operators to negotiate on their own, it will be difficulty to reach an agreement. Tel●One feels that all negotiations for the infrastructure sharing among the operators should be facilitated by POTRAZ and POTRAZ should be the first point of call by operators for sharing with another operator rather than operators negotiating on their own without POTRAZ as facilitator. It is suggested that operators should submit their networks system to POTRAZ and the operators’ network should be subject to audit as and when the need for sharing arises. The seeker should submit its request of the infrastructure sharing through POTRAZ and the Regulator then facilitates the process of sharing by approaching the infrastructure provider. Audits for the network can then be conducted by POTRAZ as the first phase of negotiations. The reason for POTRAZ to be always the facilitator is to avoid resistance by the operator who is to provide infrastructure for sharing. In this regard, Tel●One strongly feels that it is difficult for operators to reach an agreement on their own hence the involvement of POTRAZ will come with an enforcement element as well.*  ***University of Zimbabwe***  *Agreed. We just have a problem with some of the time-frames as they are not specifying the quantum of the requested sharing. There is a difference, in our opinion if a request is made to share a network segment in one suburb as opposed to networks segments in all suburbs of a city.*  ***Telco***  *Yes*  ***Zimbabwe Youth Investment Group***  *Yes.* |  | POTRAZ should approve the agreements to enable it  to play its ex-ante role especially with regards to  preventing anti-competitive conduct.  We are referring to capacity to provide service.  The guidelines are not comprehensive and flexible  Enough to achieve higher levels of infrastructure  Sharing.  Not clear.???  Noted.  As above. POTRAZ should approve the agreements to enable it  to play its ex-ante role especially with regards to  preventing anti-competitive conduct.  Noted.  Noted.  Noted.  Noted.  Noted. The Authority prefers operators to negotiate  sharing arrangements on their own within the agreed  guidelines and submit for approval to POTRAZ.  Noted. This needs to be agreed upon by all  Stakeholders.  Noted.  Noted. |
| ***Question 15*** | ***Do you agree with the above cited dispute resolution mechanism for infrastructure sharing disputes? If you do not agree give reasons and alternative suggestions.*** |  |  |
| ***Responses*** | ***Dandemutande***  *Yes. We believe, however, that if the Regulator is to take on the role of dispute resolution there will need to be the utmost transparency in deliberations and decision making. We suggest the involvement of commercial arbitrators and accountants to avoid allegations of irregularity or favouritism in decision making by the Regulator by “aggrieved” parties.*  ***Econet Wireless***  *Econet does not agree with the proposed dispute resolution mechanism. Econet considers the mechanism in the Guidelines adequate and requests POTRAZ to simply implement such process.*  ***Liquid Telecoms***  *Based on international best practice, while we acknowledge that POTRAZ’s role might include facilitating dispute resolution, we would suggest that POTRAZ not impose its decision in arbitration cases as final and provide the option of appeal to other authorities such as a court of competent jurisdiction, if required.*  ***Makoni Rural District Council***  *Indeed we agree with the cited dispute mechanism measure as there is need for an arbitrator to resolve such disputes.*  ***NECF***  *Agree but disputes of a legal nature may need to be settled in the case.*  ***Netone***  *We agree to the above cited dispute resolution mechanism for*  *infrastructure sharing disputes. We suggests that the Authority puts*  *in place general rules on dispute resolution.*  ***Telecel***  *Agree provided also there is a right of appeal*  ***Telone***  *Tel●One does not agree with the cited dispute resolution mechanism for infrastructure sharing disputes. This is because Tel●One already indicated in number 14 that negotiations should be facilitated by POTRAZ and any potential dispute will be addressed by the regulator as element of enforcement during negotiations period. This is because Tel●One feels that operators may resist the infrastructure sharing by the Seeker by creating such differences which will be difficult for the operator to handle later. See Appendix 1, point (k) for ITU guidelines in dispute resolution mechanism.*  ***Telco***  *Yes*  ***University of Zimbabwe***  *Agreed*  ***Zimbabwe Youth Investment Group***  *Yes.* |  | Noted. As above.  Noted.  The Act provides for operators to appeal against the  Decisions of the regulator.  Noted.  Noted.  Noted.  Noted.  Noted.  Noted.  Noted.  Noted. |
| ***Question 16*** | ***Do you agree with the above cited pricing principles for infrastructure sharing? If you do not agree give reasons and alternative suggestions.*** |  |  |
| ***Responses*** | ***Computer Society of Zimbabwe***  *The group agrees with POTRAZ view on mandatory sharing of site/tower, backhaul, duct sharing in rural and urban areas.*  *Concerns/Comments:*   1. *If you make sharing mandatory you derail the progress of coverage.* 2. *We don’t want a situation whereby we have five towers in one mountain. Why don’t the others with no antennas in other areas be allowed to use the already existing infrastructure?*   *The ideal scenario is that once infrastructure is in place, it should be mandatory for any player who wants to introduce service in that area to use the existing infrastructure*  ***Dandemutande***  *Yes but we believe the use of “actual cost” needs to be re-considered. Consideration should be given to using the depreciated replacement cost of the assets plus a proportion of the operating costs. This may be a fairer way of compensating the infrastructure owner and encourage sharing.*  *Tariffs should be commercially agreed between operators. There cannot be a single standard set by the Regulator. For example, site location* ***must*** *play a role in the price of sharing.*  ***Econet Wireless***  *Econet strongly disagrees with the pricing principles cited in the Consultation Paper. POTRAZ does not appear to have considered alternative pricing mechanisms, nor the incentives and financial risk implied by a requirement to set the cost at “an equal fraction” of the annualised cost. If POTRAZ had cared to actually examine pricing practices in the site sharing market it would have found that there are well-established and commercially-agreed pricing practices that are observed by most operators, apart from TelOne which appears to believe a suitable price is around four times what other operators charge each other. We do not however believe that enforced incremental cost-based pricing is required to ensure TelOne participates more effectively in the tower-sharing market, and that NetOne starts to participate, but merely that they are required by regulation and licensing obligations to enter into good faith negotiations with other market players.*  *Econet would further request that for operators who do not pay timeously, it be allowed to require advance payment and it specifically be allowed to terminate service to non-paying operators.*  ***Liquid Telecoms***  *As per numerous global case studies cited in the report prepared by Analysys Mason, most regulators around the world, while mandating and / or encouraging infrastructure sharing, have refrained from prescribing prices for sharing of infrastructure. Even the European Union, in its mandate covering local loop unbundling in 2000, abstained from advocating any particular pricing mechanism for such agreements.*  *While we agree that prices should be non-discriminatory, transparent and incorporated in the sharing agreement, we would encourage POTRAZ to only lay out a set of typical pricing mechanisms while leaving the applicability to the two operators in question.*  *Finally, we agree that the cost of sharing should not exceed the cost of building from scratch and owning a similar facility, as this defeat the essence of sharing.*  ***Makoni Rural District Council***  *Yes there is need for strict supervision on the costing for consistency.*  ***NECF***  *Pricing principles are sound*  ***Netone***  *The cited pricing principles seem to be fair in our view.*  ***Telone***  *Tel●One agrees with the cited pricing principles for infrastructure sharing. However Tel●One feels that POTRAZ should come up with a pricing model or framework which will be used as a guideline by the operators in pricing of infrastructure sharing arrangement. This is even more similar to the recently implemented tariff model namely LRIC model which POTRAZ crafted in consultation with the operators. See Appendix 1, point (d) for ITU guidelines on pricing model.*  ***Cited Pricing Principles for Infrastructure Sharing***  *Prices for infrastructure sharing shall be non-discriminatory, reasonable, and based on the actual costs incurred by the owner of the facility. Determination of the costs underlying prices should be transparent and neutral and should be incorporated in the infrastructure sharing agreement for the Authority`s approval.*  *Tariff and charges for Infrastructure Sharing shall be on an incremental cost basis. In essence, the annual cost of sharing should not exceed an equal fraction of the annualised cost of owning and operating a similar facility.*  ***Telecel***  *Agree. We also suggest that site swaps as another form of infrastructure sharing where there are no direct payments.*  ***Telco***  *Yes*  ***University of Zimbabwe***  *Agreed*  ***Zimbabwe Youth Investment Group***  *Yes.* |  | Noted.  Agreed tariffs must be commercially negotiated within a  Prescribed formulae as way of preventing cases of abuse  of market power and other anti- competition  misdemeanours.  POTRAZ is open to more suggestions on the issue of price  Formulae. What is critical is that the agreed pricing  formulae should be in sync with the pricing methodology  for networks prescribed by the Authority. This will make  it easier for the authority to cross check the accuracy and  fairness of prices.  Not agreeable as this may be a ploy by some operators to  bar certain operators from sharing arrangements.  Noted. Agreed tariffs must be commercially negotiated  within a prescribed formulae as way of preventing cases  of abuse of market power and other anti- competition  misdemeanours.  Noted.  Noted.  Noted.  Noted.  Noted and agreed.  Noted.  Noted.  Noted. |
| ***Question 17*** | ***Do you agree with the need for standard procedures and the above cited areas where such procedural standards should be maintained? If not in agreement, give reasons and alternative suggestions.*** |  |  |
| ***Responses*** | ***Dandemutande***  *Yes. We believe there is need to include three more points in the standard procedures:-*   * *Access to site agreement* * *Respect for the site and the site owner* * *Imposing a legal responsibility on the operator to make good on all construction areas including damage to roads and pavements and the level of fine for non-compliance*   *We believe these should all be part of the agreement between the parties rather than involving the Regulator. Alternatively, the Regulator can assist simply by providing a set of minimum guidelines that must be included in all agreements. The Regulator should be involved in ensuring compliance – in particular for the repair of construction sites.*  ***Econet Wireless***  *We agree with the need for standard procedures to be agreed to between the sharing operators. The areas cited by POTRAZ are already covered in commercial site-sharing agreements prevalent in the market today, as well as in the Guidelines. As such there is no need for further intervention.*  ***Liquid Telecoms***  *Liquid Telecom believes that guidelines are generally useful to promote industry initiatives. It is important to help all participants to understand the key parameters of infrastructure sharing, covering key elements such as maintenance, access to facility, safety, security etc.*  *However, the telecommunications industry is characterised by various different types of infrastructure, equipment and a number of different vendors, not to mention rapid technological changes. We would also suggest that it would not be an effective use of POTRAZ resources to become involved in setting such procedures and conditions except where required for dispute resolution****.***  ***Makoni Rural District Council***  *Yes there is need for maintenance in the cited areas for consistency*  ***NECF***  *Agree. Standard procedures allow for ease of Sharing the infrastructure*  ***Netone***  *Standard procedures stated are okay and it must be stated that an*  *operator needing sharing will use the existing facilities on sites and*  *shall not demand anything more than is prevailing on the said sites.*  ***Telecel***  *Agree.*  ***Telone***  *Tel●One agrees with the need for standard procedures in the cited areas where such procedural standards should be maintained by operators. This is because standard facilitates improved co-ordination and compatibility of equipment.*  ***Telco***  *Yes*  ***University of Zimbabwe***  *Agreed*  ***Zimbabwe Youth Investment Group***  *Yes.* |  | Noted. As above.  Noted.  Noted. Agreed tariffs must be commercially negotiated within a  prescribed formulae as way of preventing cases of abuse  of market power and other anti- competition  misdemeanours.  Noted.  Noted.  Noted.  Noted.  Noted.  Noted.  Noted.  Noted. |
| ***Question 18*** | ***Do you agree with the role and powers given the Authority in infrastructure sharing dispute resolution? If you do not agree give reasons and alternative suggestions.*** |  |  |
| **Responses** | ***Dandemutande***  *We disagree with this. The Regulator, by definition, regulates the industry. A number of sections in this paper require the role of an ombudsman or an arbitrator and we caution the Regulator against taking on these roles. Infrastructure sharing agreements are essentially commercial contracts*  *between operators that require legal drafting, financial and technical input and commercial arbitration in the event of dispute and are better undertaken by professionals involved in these aspects of commerce on a daily basis. We do not believe the Regulator should be making the rules, overseeing disputes about the rules and then imposing a judgement. The roles must be separated to ensure impartiality and transparency.*  ***Econet Wireless***  *Econet recognises the need for POTRAZ to play a role in dispute resolution. However, Econet favours the current approach as set out in the Guidelines.*  *Econet further cautions against any suggestion that POTRAZ can impose sharing arrangements as that would be ultra vires the Act.*  *Econet again refers to the ICT Regulation Toolkit referenced above and encourages POTRAZ to review the international best practice approaches cited therein.*  ***Liquid Telecoms***  *Given the complexity involved in infrastructure sharing, and possible differences of opinion across stakeholders, the role of an arbitrator is important. However the imposition of infrastructure sharing should only be considered as a last-resort option, after careful review, analysis and consultation. Mandating sharing is a heavy-handed intervention, which can have a significant impact on the structure of the industry and the long-term viability of private operators.*  *We are happy to note that POTRAZ believes it should intervene only in cases where either party wilfully approaches it for a resolution, rather than POTRAZ taking suo moto cognizance of a situation, which will just end up delaying matters. We are also in agreement that any party not content with the result of any such arbitration has the right to appeal to a court of competent jurisdiction.*  ***Makoni Rural District Council***  *Yes we agree.*  ***NECF***  *Agree. As the regulator POTRAZ needs to be empowered to keep all players in check.*  ***Netone***  *We generally agree to the dispute resolution mechanism and the role*  *and powers given to the Authority.*  ***Telecel***  *Agree.*  ***Telone***  *Tel●One agrees with the role and powers given the Authority in infrastructure sharing dispute resolution. However, POTRAZ should also be guided by ITU guidelines as in Appendix 1.*  ***Telco***  *Yes, - with the role and powers, however we do not believe the regulator is currently adequately resourced/capacitated to carry that mandate.*  ***University of Zimbabwe***  *Agreed*  ***Zimbabwe Youth Investment Group***  *Yes.* |  | We do not believe that the regulator is overstepping in  coming up with a comprehensive infrastructure sharing  framework. Yes they are commercial contracts- but not  ordinary commercial contracts as they are technical in  nature.  Noted as above.  Noted.  Noted.  Noted.  Noted.  Noted.  Noted.  Noted  Noted.  Noted. |

**General Comments**

**University of Zimbabwe**

* 1. Infrastructure sharing is a very noble idea. Markets like the European community have done it to gain a very high competitive advantage.
  2. A too pronged attack could be used, where new segments can automatically fall under the sharing-regime while older infrastructure is being rationalized.
  3. Sharing should be done as long as it results in better business continuity for the providers and for the customers.

**General Comments**

**Computer Society of Zimbabwe**

* Sharing should include everyone both Parastatals and private players

1. Standards need to be established for the duct sizes to accommodate future growth

* There is need to look into using existing infrastructure such as power lines as opposed to digging to reduce infrastructure setup costs. Powertel has used that option
* POTRAZ should furnish independent research at universities so that there is more information and equipment on young people and establish a knowledge base which is able to address these kind of questions.

**TELONE – Additions**

**APPENDIX 1**

**ITU BEST PRACTICE GUIDELINES ON INFRASTRUCTURE SHARING**

**INTRODUCTION**

ITU and other regulators which participated in the 2008 Global Symposium for Regulators, identified and proposed best practice guidelines for innovative infrastructure sharing and open access strategies to promote affordable broadband access. The table below outlines the Infrastructure Sharing Guideline as proposed by ITU.

|  |  |
| --- | --- |
| **Guidelines on promoting an enabling environment** | |
| 1. **Appropriate Regulatory framework** | ITU recognizes the need for an appropriate regulatory framework fostering broadband access including Internet, to enable the development of infrastructure-based competition, in addition to service-based competition, and the emergence of new innovative players at the national level.  It was discovered that certain sharing options can deliver specific benefits while others could pose risks, in particular by reducing competition, and these need to be carefully balanced in the light of specific national circumstances when designing the most appropriate regulatory strategy. In doing so, regulators recognize the importance of holding public consultations with all stakeholders on the various strategies and regulations that deal with infrastructure sharing. |
| 1. **Competition and investment incentives** | ITU recognized the potential benefits of infrastructure sharing, whether mandatory or optional, in situations where competition and investment incentives are not undermined, bearing in mind the need to safeguard competition and investment incentives. It was then recognized that offering of shared facilities must not be biased towards any specific service provider or types of services.  Where capital and operating expenditures are likely to be reduced by the joint deployment, management and maintenance of certain facilities (for example, by tower sharing), such sharing can bring about long-term efficiencies, which may in turn enable more investment in innovative products and services and ultimately benefit consumers. ITU recognizes the importance of ensuring that regulatory policy does not restrict competing market players installing their own independent facilities, and that it promotes open access to international capacity and international gateways (for example, collocation and connection services at submarine cable landing stations). ITU believes that the establishment of Internet Exchange Points could also encourage shared and more affordable access to national and international broadband capacity for Internet service providers willing to enter the market |
| **Guidelines on innovative regulatory strategies and policies to promote infrastructure sharing** | |
| 1. **Reasonable terms and conditions** | It is important that implementation of sharing takes into account the necessity to protect the value of existing investment in infrastructures and services. However, price and non-price terms and conditions should not act as an artificial barrier to sharing. |
| 1. **Pricing** | Pricing for shared facilities should provide the right economic signals to market players, assisting them in making reasonable and commercial “build-or-buy” decisions (i.e., is it more commercially reasonable to self-provision facilities or to lease existing ones). At the same time pricing should provide for the right incentives for investments in infrastructure (in a form of reasonable return on investment), but should not be used as an artificial barrier to entry for new market players. Commercially negotiated pricing should prevail, except where market power exists |
| 1. **Efficient use of resources** | Non-replicable resources such as towers, ducts and rights of way can be shared for installations that serve a similar purpose, which allows for optimal use and can be offered on a first-come first served basis subject to commercial agreements under fair pricing conditions. |
| 1. **Scarce resources** | Shared-use bands could be promoted as long as interference is controlled. Spectrum sharing can be implemented on the basis of geography, time or frequency separation. |
| 1. **Licensing** | Regulators could consider licensing or authorizing market players that only provide passive network elements, but which do not compete for end-users, such as mobile tower companies, public utilities companies with rights of way access, and fibre backhaul providers. |
| 1. **Conditions for sharing and interconnection** | ITU recognizes that infrastructure sharing can only take place on a neutral, transparent, fair and non-discriminatory basis and that interconnection frameworks can ensure that all licensed operators are granted the right to interconnect as well as encourage the sharing of essential facilities and guarantee that network security and quality of service are not compromised. |
| 1. **Establishing an infrastructure sharing one-stop-shop** | Establishing a one-stop-shop would facilitate the coordination of trenching and ducting works between telecommunications service providers as well as between telecommunications service providers and those of other utilities. ITU recognizes the key role local authorities could play in fostering the deployment of broadband access and development of competition and the importance of close cooperation to simplify administrative proceedings and ensure timely response to requests for infrastructure sharing. |
| 1. **Improving transparency and information sharing** | ITU identifies the need for transparent processes to facilitate infrastructure sharing, and market players need to know what is available for sharing under clearly established terms and conditions, in order to avoid unfair actions. Regulators could require publication on websites of the details of existing as well as future infrastructure installations available for sharing by other service providers, such as the availability of space in existing ducts, planned deployment or upgrading works and interconnection. |
| 1. **Dispute resolution mechanism** | ITU believes that regulators should introduce necessary enforcement tools to ensure compliance and successful adoption of infrastructure sharing regulations. As an infrastructure sharing relationship between service providers involves elements of both cooperation and competition, the regulators recognize the need to first explore alternative dispute resolution mechanisms which are speedy and simplified to encourage negotiated outcomes while maintaining the certainty of an adjudicated decision where necessary. |
| 1. **Universal access** | To encourage infrastructure sharing in support of its universal access goals, regulators can consider the introduction of incentives for service providers that share infrastructure as part of their efforts to deploy to rural and underserved areas. Such incentives may, for example, take the form of regulatory exemptions (ensuring that such exemptions do not lead to re-monopolization of the market and do not unreasonably restrict consumer choice) or financial subsidies taking into account the need to minimize distortions to competition. |
| 1. **Sharing with other market players and industries** | ITU also recognize that sharing should be encouraged not only within the boundaries of the Telecommunications/ICT and Broadcasting industry, but together with other infrastructure industries (such as electricity, gas, water, sewage, etc.) as well. In the context of technological development, joint infrastructure building (with other market players and with other industries) may be encouraged, providing for timed, organized opportunities for access to ducts and conduits (for example, for the joint laying of fiber) to distribute the cost of civil works among service providers and reduce the inconvenience for traffic in towns and cities. This would also provide for a positive environmental (including aesthetic) impact, in particular by reducing the number of mobile masts and towers. |
| 1. **Sharing of regulatory practices** | It was recognized that there is need for an appropriate level of international and regional harmonization to ensure that best practice regulatory policies on sharing are widely spread, and regional organizations have an important role to play in this regard. This is even more important in areas where a specific regulatory issue has a significant cross-border effect and thereby cannot be tackled by a national regulator. |