Telecommunications Regulatory Commission of Sri Lanka

Report on the Public Consultation on Next-Generation Network (NGN) Policy and Regulatory Framework

02nd February 2011

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1   Introduction

On 29 September 2010, the Telecommunications Regulatory Commission of Sri Lanka (TRCSL) issued a consultation paper on "Policy and regulatory framework for next-generation networks (NGNs)" to all key telecoms stakeholders in Sri Lanka. The objectives of the consultation were four-fold:

- provide a general introduction to NGNs and the services that can be offered using these networks
- explain the potential benefits of the introduction of NGNs and corresponding services in Sri Lanka
- provide some insight into the main technical, economic and regulatory issues that may need to be addressed in order to accommodate the migration to, and adoption of, NGN, while at the same time protecting the interest of Sri Lankan customers
- obtain the views and the comments of the stakeholders with a view to formulate the NGN policy and regulatory framework.

TRCSL has received responses from the followings stakeholders:

- Dialog
- Emirates Telecommunications Corporation (Etisalat)
- Huawei Technologies
- Hutch 3G
- Mobitel
- Sri Lanka Telecom (SLT)
- Tritel.

The objective of this report is to provide a summary of the responses received from all stakeholders.

2   Summary of responses

Question 1: Do you think that you or your company could benefit from the services that will be made possible by the implementation of NGNs? If yes, please explain by means of examples.

Summary of response

All respondents are convinced that NGNs will bring many benefits to their business and to the wider society. In particular, all respondents agree that NGNs will enable them to provide a greater range of services. Other advantages of NGNs noted by respondents include:

- the reduction in network capital and operational expenditure (capex and opex)
- the simplification of the network (a single network can support all services)
- the ability for service providers to individually customise end-user services.

A number of respondents note that they have started their migration to NGN and the incumbent is well underway in the transformation of its public-switched telephone network (PSTN) to an NGN.

It is also interesting to note that Tritel believes that the advent of NGN will require an extensive change in its business model from public access payphone operations to one that will be capable of offering converged services and thereby offer a range of converged services.

Question 2: Do you think that the incentives available in the private sector for operators to begin to migrate to NGN are sufficient to promote adoption, or do you believe that the broader social benefits warrant additional steps being taken by the government to promote this migration? If so, what steps would you recommend TRCSL investigate to promote such migration?

Summary of response

Stakeholders agree, in principle, that incentives should be introduced to promote the deployment of NGNs, with differences as to the circumstances and form of government intervention. SLT believes that if any incentive is provided, it should consider previous investment from operators in NGNs. The other stakeholders state specifically that incentives are necessary only in unprofitable areas (rural). A range of government interventions are proposed – for instance, Tritel believes that incentives such as tax breaks, regulatory holidays and affordable spectrum are necessary to introduce NGN in areas where it is not commercially feasible for operators to deploy an NGN.

Question 3: Do you foresee any negative consequences of the migration to NGN for the telecoms sector or broader society? If so, please describe them, along with any steps that TRCSL could investigate to mitigate or avoid those consequences.

Summary of response

Respondents agree, in principle, that the gains brought by NGNs to the telecoms market and the wider society as a whole far outweigh the potential challenges they will cause. However, respondents are particularly concerned about challenges such as maintaining emergency services, compatibility with existing customer equipment, and the implementation of quality of service (QoS).

On the competition side, smaller operators such as Tritel note that specific policies should be enforced to ensure a level playing field for all respondents in Sri Lanka. Dialog mentions that regulations and policies should be aimed at reducing tariff disparity between application service providers (Google/Skype) and more traditional telecoms operators. Finally, Etisalat notes that a single NGN for all respondents, based on a wholesale model, would limit the ability for operators to differentiate their services.

Question 4: Do you see any issues or opportunities relating to access to, and use of spectrum now? Will issues and opportunities potentially emerge from telecoms and broadcast convergence?

Summary of response

Respondents agree, in principle, that the availability of spectrum is essential for the delivery of next-generation access (NGA), especially in more rural regions. Spectrum in the 790–862MHz and 698–806MHz bands (digital dividend) is of particular interest. Most respondents believe that the existing spectrum should be re-farmed and apportioned to appropriate facilities- and infrastructure-based service providers.

Question 5: Do you believe that innovative voice services such as Skype and Google represent a threat or an opportunity for the Sri Lankan telecoms market? What are the roadblocks to realising benefits from such services?

Summary of response

Respondents are divided on the potential threats and benefits brought by services like Skype and Google.

Some respondents believe that voice services such as Skype and Google are a clear threat as they will compete head to head with traditional voice services, without having to comply with the same

regulations and laws. Another respondent notes the danger of becoming a dumb 'pipe provider' if value-added applications are provided 'over-the-top', and therefore associated revenues are transparent to the broadband provider.

One operator believes that applications such as Skype and Google represent an opportunity as they promote the use of broadband, while another respondent believes operators should enter into partnerships with these application providers to try and leverage revenues.

It should be noted, however, that no respondent is in favour of blocking these applications, as it is recognised that they are beneficial to the customer.

Concerns were raised by two respondents regarding the relatively poor QoS experienced by customers using these services.

Finally, respondents believe that there are no roadblocks for realising the benefits of such services.

Question 6: Do you believe that the range of TV content available is an important or primary basis for customers' decision to purchase telecoms services? Do you believe that a merger between the media regulator and TRCSL would provide an environment which promotes competition and increases user choice?

Summary of response

Respondents agree, in principle, that TV content is an important driver of supplier selection. However, one of the respondents notes that service affordability/cost is more important than the actual choice of content, especially in Sri Lanka.

In general, respondents believe that there should be strong synergies between the telecoms and the media regulator, with two respondents in favour of a full merger.

However, the majority of respondents do not believe that the merger of the media/content regulator and the telecoms regulator is a necessary condition to provide an environment which promotes competition and increases user choice, as two separate entities with good relationship could potentially provide such an environment.

Question 7: Please describe your planned migration to NGN. (a) What is your technical strategy to migrate to NGN, if any? (b) What will be the key phases in your migration to NGN, and what phase are you currently in? (c) What is your anticipated timescale for each of these phases? What technical issues need to be resolved to allow you to offer the services you would like to be able to offer today, and over the next four years?

Summary of response

Respondents note advanced plans to migrate to next-generation core networks, without mentioning any roadblocks or recommending any specific regulations.

Question 8: What is the impact of NGN on existing telecoms networks and services revenues, in light of the overall benefit that may be derived from the introduction of NGN? Do you think TRCSL should play an active role in the migration to NGN? If yes, what measures should TRCSL take during the migration and in the course of the long-term adoption of NGN technologies and services?

Summary of response

Respondents are divided regarding the impact of NGNs on existing telecoms networks and service revenues. SLT believes that the implementation of NGN will result in a shift from recovering costs through a combination of access and call charges to an alternative model better reflecting the link between capacity used and costs. Similarly, Dialog believes that in an NGN environment, revenues will mainly be generated from end users' flat rates access subscription and advertising.

Respondents generally agree on the fact that TRCSL could play an active role in determining technical industry standards for both a migration to NGN and an interconnection inter-operability framework.

In addition, SLT believes that TRCSL should define a regulatory regime that facilitates customer and service migration and accepts the withdrawal of legacy services and platforms. Dialog believes that the nature of that role should also include the roll-out and availability of national backbone infrastructure, providing tax incentives for NGN-related imports, regulating charging arrangements and tariffs for NGN interconnection and services, and regulating cybercrime and fraud.

Question 9: What are your preferred protocols, architecture and interfaces for inter-connection with the PSTN, other NGNs, and with international networks (voice and Internet)? Please describe in detail the associated timeframe for each of your choices, in relation to your overall migration roadmap described above.

Summary of response

Most respondents are considering standard protocols recommended in TRCSL's consultation paper. For example, SLT is planning to use the following protocols:

- for PSTN, PLMN: SS7, R2, SIGTRAN (SS7 over IP) M3UA, M2UA

- with NGN platforms/other IP networks:
  – for signalling: SIP/SIP-I/SIP-T
  – for media: RTP/RTCP
  – with media gateways (MGWs)/AGWs H .248, MGCP (with IADs).

SLT is currently developing a strategy for NGN interconnect, and is evaluating NICC's standards (in the UK) for multi-service interconnect (ND1611) as an option.

It is also interesting to note that Etisalat expects that, initially, the Session Initiation Protocol (SIP) will be the signalling protocol used for interconnecting with other operators. Etisalat also anticipates that the interconnection protocol will evolve to SIP-I in future.

Hutch 3G believes that SS7 and IP will be the protocols of choice for interconnection with PSTNs and NGNs.

Tritel did not have any preferred protocol at this stage for interconnecting PSTNs and NGNs; the company is still in the process of considering its options.

> **Question 10:** Do you envisage any general issues in relation to NGN interconnect? In particular, do you envisage any issues in relation to current peering arrangements?

Summary of response

Respondents generally support the establishment of an independent not-for-profit Internet exchange (IX) for exchanging Internet traffic, regulated by TRCSL. However, SLT believes that NGN interconnect and operator inter-connection at an IX to exchange Internet traffic have fundamental different requirements; regarding performance, QoS and security warrant different considerations and solutions. Dialog also notes that direct peering is appropriate in an NGN environment.

Furthermore, Dialog also believes that SLT misuses its monopoly on landing station rights by squeezing the downstream prices through its landing station and backhaul charges, which has resulted in the high cost of international bandwidth in Sri Lanka. Etisalat believes it is too early to define an interconnection architecture as most operators have not yet decided what architecture to implement.

Finally, Tritel noted that there are currently major issues in interconnecting PSTN and voice over IP (VoIP), but does not reveal what these issues are.

> **Question 11:** Please describe any experiences that your company has of an IXP in Sri Lanka or elsewhere. Do you foresee that your company will have an increased reliance on an IXP in the future, for Internet applications including voice? If so, are there any roadblocks to such usage in Sri Lanka today? If so, please describe those roadblocks and the means to overcome them.

Summary of response

Respondents generally support the establishment of an independent not-for-profit IX for exchanging Internet traffic, regulated by TRCSL. Mobitel notes that following the adoption of NGN by several operators, there will be a significant traffic exchange through the IXP, hence a higher dependency on IX.

However, in marked contrast to the rest of the respondents, Etisalat believes that the concept of an IX does not need to be associated with the implementation of NGN.

Question 12: Do you believe that the establishment of a national body to standardise interconnection between NGNs is required in Sri Lanka? If so, what do you think would be the best governance model for it?

Summary of response

Most respondents agree on the principle that a single national standardisation body should be formed to specify the technical aspects of both interconnection and migration issues associated with NGNs. Respondents are also in agreement regarding the fact that the national standardisation body should be led by the key industry stakeholders, including TRCSL. SLT notes that the remit of this national standardisation body should exclude commercial matters. Tritel notes that, when there is disagreement between the national standardisation body, TRCSL should be legally empowered to take the final decisions.

In marked contrast to the rest of the respondents, Etisalat and Hutch 3G believe that international standards are sufficient to ensure smooth migration and interconnection, and that no national standardisation body is needed.

Question 13: Do you believe that TRCSL should mandate that the operator should put in place equipment to monitor its network performance in terms of delay, jitter, packet loss and bit error rate for different classes of service?

Summary of response

All respondents agree with TRCSL that the monitoring of the network performance is essential in delivering NGN services, especially when a connection traverses more than one operator's network. SLT notes that it has already deployed performance and capacity management capability throughout its NGN. Dialog notes that TRCSL could mandate the following parameters for different classes of NGN services:

- bandwidth
- delay
- jitter
- packet loss
- blocking possibilities.

Dialog also mentions a number of key questions in its response:

- who is responsible for collecting and verifying the statistics on this?
- can sufficient information be disclosed?
- what are the related penalties and sanctions?
- who has responsibility for supervision?

The majority of respondents believe that competition will lead operators to monitor and implement tight delay, bandwidth and packet loss, and that no external parameter monitoring is required.

Question 14: Do you believe that other network performance parameters such as network availability should also be monitored by TRCSL? Please use examples to illustrate your answer.

Summary of response

The majority of respondents consider that TRCSL should define the network performance parameters and those benchmark standards with which operators must comply. However, Etisalat and Hutch 3G believe that there is no rationale or relevance for a regulator to mandate monitoring NGN availability.

Question 15: If you answered yes to the previous questions, do you believe that the national standardisation body should take responsibility for specifying what should be monitored?

Summary of response

Those respondents who believe that network parameters should be defined and monitored to ensure end-to-end QoS, they also believe that the national standardisation body should advice TRCSL as to what these threshold values should be.

Question 16: What are your views on security in NGNs? In your view, does current technology, such as firewalls, provide adequate security to NGNs? Do you believe that there needs to be national NGN security policies and standards?

Summary of response

Respondents are quite divided on their approach to security. The incumbent supports the development of a national NGN security policy standard and has already carried out some work in that direction. Other respondents believe that security is a matter for the operator alone and there should not be a common national approach. We also note that two respondents have not expressed any views on the subject of security.

Question 17: Please comment on the need for revisions to numbering plans for new services, and the need or otherwise for non-geographical codes recognising increasing user nomadicity?

Summary of response

The majority of respondents believe that the numbering plans should be revised with the introduction of NGN. However, two operators would prefer the *status quo* regarding the numbering plan and do not see the need for any evolution of the plans. Several respondents have expressed some concerns with changes to geographical and non-geographical numbers as, currently, customers tend to associate numbers with price.

Question 18: How do you think the harmonisation of naming and numbering of different networks should be addressed? At what stage of your migration plan will the harmonisation of naming and numbering be required? Do you think a national standardisation authority should be in charge of implementing the harmonisation of the naming and numbering across the country? Do you see a future need for international co-ordination for any or all of Sri Lanka's naming and numbering schemes?

Summary of response

Respondents are divided on numbering and naming harmonisation. Both SLT and Dialog believe that number harmonisation is important, but is not an immediate issue. SLT believes that the national standardisation body should be in charge of this activity. In marked contrast, Hutch 3G and Etisalat do not consider that numbering harmonisation is necessary and do not think there is a requirement for TRCSL to intervene in this area.

Question 19: Do you see ENUM as a fundamental stepping stone to true VoIP services? If yes, do you believe that ENUM should be implemented centrally by a third party (e.g. a government agency)? If not, what are your alternative plans to provide IP address look-up services (e.g. implementation of individual databases)?

Summary of response

All respondents that have expressed a view believe ENUM is an essential stepping stone for VoIP. Etisalat and Hutch 3G think that ENUM should be implemented by the operators themselves, and that there is no need for a co-ordinated approach. In the same vein, SLT intends to use its own internal address resolution systems until a common approach is agreed.

Question 20: How important is it for you that a subscriber can keep their current phone number when migrating from PSTN to NGN? Do you think that a change in phone number may be a barrier for the adoption of NGN services?

Summary of response

Respondents agree that the regulation should ensure that customers are able to keep their number whenever possible.

Question 21: Do you plan to adopt IPv6 in your network? If so, when will you do so in relation to the milestones described in your transition to NGN? What are the key transformation phases involved in migrating your IP network to IPv6?

Summary of response

Most respondents have plans to implement IPv6 in their network and also agree that there is no immediate requirement to do this. It should be noted that SLT has implemented IPv6 in its network infrastructure that supports ISP services, but not in its core network yet. It is also interesting to note that Dialog plans a dual stack approach with its core network. Finally, Mobitel notes that all of its IP platforms have IPv6 capability but IPV6 has not yet been activated.

Question 22: Please describe your views on the competitiveness of the markets for voice and data services today, including both domestic and international leased lines. What are the current roadblocks to increasing the competitiveness of these markets, if any? What regulations, if any, would you recommend to overcome these roadblocks?

Summary of response

Overall, only Dialog and Etisalat provided recommendations to increase competitiveness in the market in general, while SLT stressed that the only focus of regulation should be on rural areas. Otherwise, all respondents including SLT expressed their view that the markets were functioning and no general regulations were needed to overcome roadblocks or increase competitiveness.

Question 23: Please describe your current network architecture. What are your current plans to implement NGNs and/or offer VoIP or other IP services? What are the roadblocks that you perceive to that migration? What regulations, if any, would you recommend to overcome these roadblocks?

Summary of response

The operators note advanced plans to migrate to next-generation core networks, without mentioning any roadblocks or recommending any specific regulations.

Question 24: Do you see asymmetric regulation as appropriate for regulating NGN in Sri Lanka? If so, what obligations should be imposed on the dominant operator(s) and the non-dominant operators? What do you see as the most significant advantages and disadvantages of such an approach in Sri Lanka, and what roadblocks do you see to its implementation?

Summary of response

Respondents are not in favour of asymmetrical regulation in the NGN environment for various reasons. Some questioned the necessity of asymmetrical regulation, in particular since they did not see the deployment of NGN necessarily creating competition problems in the market. For instance, Dialog was concerned that asymmetrical regulation could create market distortions and promote regulatory arbitrage instead. The majority of the respondents voiced concerns that asymmetrical regulation could inhibit investments/innovations. However, some respondents suggested that regulations should be imposed to address specific market failures/bottlenecks if necessary.

Question 25: Do you see value in maintaining a two-tier regulatory structure (facilities-based and services-based licensing) to accelerate growth of the Sri Lankan telecoms industry particularly in light of NGN? What do you see as the most significant advantages and disadvantages of such an approach in Sri Lanka, and what roadblocks do you see to its implementation?

Summary of response

With the exception of Etisalat and Hutch 3G, the other respondents are generally supportive of a two-tier licence structure.

SLT highlighted that the infrastructure operators must not be disadvantaged *vis-a-vis* the service providers, i.e. SLT believes it would be wrong for those who build networks to be disadvantaged in any way when competing for retail customers with service providers reliant on the infrastructure built by the former. Dialog emphasised the need for the licensing regime to be technology neutral. It also suggested putting in place fundamental regulations such as competition rules, compliance and enforcement before the implementation of the new licensing regime.

Question 26: Please propose any other specific amendments to the licensing framework to promote the growth of service-based competition for NGN. In particular, please identify any regulatory obligations that ought to be excluded from a service-based licence (i.e. Class Licence), citing detailed justifications.

Summary of response

Instead of changing the licensing regime, Hutch 3G suggested amendments to existing licence conditions to reflect the additional facilities and services under NGN. The other respondents that supported the two-tier licence structure expressed concerns over any exemption of obligations to a particular type of licensee as it may promote unfair competition. SLT suggested that consumer protection obligations should apply to all operators. Dialog proposed a separate consultation on the licensing regime given it involves many complex issues.

Question 27: Do you agree with the above proposal to sub-divide service-based licences into two tiers, i.e. 'standard' and 'simplified' class licences, based on the service offered? If so, which services should be subject to the light-touch 'simplified' licence, and why?

Summary of response

While Hutch 3G considered that it is too early to comment on whether there is a need to sub-divide the service-based licences into two tiers, SLT was of the view that the boundary between the two classes of licence may be difficult to define as new services emerge and evolve. SLT also highlighted the possibility of overseas service providers being subject to less regulatory oversight compared to local providers, given the difficulty that TRCSL will face in trying to license all NGN service providers.

Question 28: What are your views on how USO should be implemented for NGN technologies? How should the funds be raised, and how should they be disbursed? Should they target basic voice services or advanced data services?

Summary of response

Generally, the respondents consider that there is a need for further study to identify the scope of the universal service obligation (USO), the areas that require help, the funding method and the disbursement of funds. There is, however, a general consensus that USO should focus on funding development in underserved areas. SLT further suggested the setting up of a body consisting of TRCSL, SLT and the industry to help TRCSL formulate the necessary regulatory actions which would support the greatest-possible commercial network reach.

Question 29: Please comment on whether a new set of interconnection rules should be promulgated, or whether the existing Interconnection Rules 2003 should be amended to provide for interconnection in IP-based networks.

Summary of response

With the exception of Etisalat, which preferred the operators to sort out interconnection issues on their own, the respondents generally agreed that the existing Interconnection Rules 2003 need to be reviewed.

SLT and Hutch 3G supported a review of the existing Interconnection Rules 2003, while Dialog suggested that a new set of rules may be less complicated than amending the Interconnection Rules 2003. Tritel also supported the promulgation of a new set of rules and added that the new rules should ensure non-discrimination in addition to clearly defined parameters of interconnection. It also proposed the setting up of a central interconnection hub where operators could interconnect via a single access point.

Question 30: Is there a need for a RIO to be offered by a dominant operator? Please identify the terms and conditions you would require in a dominant operator's RIO. Is there any need to change the regulatory approval process for RIOs?

Summary of response

Both SLT and Dialog supported the requirement for the dominant operator to offer a RIO, although SLT added that operators should retain the freedom to bilaterally negotiate, with the reference offer available as a default.

Etisalat and Hutch 3G took an opposite view and suggested preserving the *status quo* (on the basis that interconnection is already being regulated).

Question 31: Do you think that further regulatory measures should be taken to promote competition in the core network in Sri Lanka? If so, which parts of the core network are most important to promote entry and competition in retail markets? Will these measures have an impact on NGN investments?

Summary of response

Tritel considered that regulatory measures should be put in place to ensure that an open-access environment in the core network is not hindered by any anti-competitive practices. According to Tritel, the service layer is the most important part in the core network. Tritel considered that if

there is a level playing field and no distortion in the market, these measures will not adversely affect NGN investments.

Dialog considers that there should be no mandated third-party access to an operator's next-generation core network. Yet, Etisalat believes the core networks are not presently bottlenecks to competition.

Question 32: Do you think the introduction of wholesale access to the access network would benefit the consumer? What type of wholesale access would be most beneficial for Sri Lanka? Will these measures have an impact on NGN investments?

Summary of response

Both SLT and Dialog supported the introduction of wholesale access to the access network. SLT considered that a wholesale bitstream-type service at two or so central network nodes of the NGN structure would help competitors offer broadband services to customers. Dialog suggested that the wholesale access services should be specified in functional rather than technology-specific terms, so that competing services are subject to the same access requirements. It further proposed that access should be limited to 'essential facilities' and 'well-established services utilising bottleneck facilities'. Access to new services should not be permitted so that operators remain incentivised to invest in the NGN. On the other hand, Etisalat considers that NGN and wholesale access should be treated independently as they are not related.

Question 33: Do you agree with the principles of net neutrality and technology neutrality for promoting service-based competition under NGN? If so, please provide suggestions for how to implement each principle. If not, please explain and provide any alternative or supplemental principles to consider. What impact, if any, will your suggestions have on incentives to invest and the ability to compete using NGNs?

Summary of response

Generally, the respondents were supportive of adopting the principles of net neutrality and technology neutrality for promoting service-based competition under NGN. However, on technology neutrality, SLT highlighted that services such as voice telephony may be subject to different requirements due to the limitations of the underlying platforms.

On the issue of net neutrality, SLT suggested that where an operator has significant market power, it should not be allowed to discriminate between similar customers; however, it should be allowed to set different service standards at different prices to protect its network from abuse and overloading. Similarly, Mobitel also opined on the need for operators to retain the ability to offer quality-of-service-based and/or content-based charging based on bandwidth to manage data traffic.

Etisalat and Hutch 3G suggested to adhere to ITU principles for net neutrality, with Etisalat proposing that there was no need for any further codification under the Sri Lankan regulations.

Question 34: Do you believe that new charging arrangements should be imposed for NGN interconnection? Do you believe that interoperability standards need to be imposed for NGNs? Should these new regulations be imposed on all operators, or only on dominant operators?

Summary of response

Both Dialog and Tritel considered that new charging arrangements for interconnection will be required in the NGN environment. Dialog further opined that there is unlikely to be a 'one size fits all' wholesale interconnection and retail pricing model that will maximise efficiency in all situations. Instead of being subjected to a regulator-imposed charge, SLT suggested that operators should develop reference offers (subject to approval by TRCSL) which will serve as an offer of last resort if bilateral negotiations fail. On the other hand, Etisalat and Hutch 3G saw no need for any change to the current interconnection arrangements.

In terms of interoperability standards, SLT suggested that TRCSL create an industry body which will develop a set of standards that is agreeable by all operators. Where necessary, TRCSL may use licensing requirements to ensure that the operators adopt this set of standards put forth by the industry body. Dialog also supported mandating interoperability standards for NGNs between existing operators and new entrants. Tritel further considered that the standards should be imposed on all operators.

Question 35: Would it be appropriate to apply tariff control only to dominant operators? Please explain, and provide relevant examples where tariff review may be needed, or where it is not needed and imposes unnecessary regulatory burdens.

Summary of response

Both SLT and Dialog considered that rather than imposing general tariff controls, tariff review should be carried out only where there is concern with a specific tariff. While Tritel considered that tariff control is only appropriate for the dominant operator, it was also of the view that undue day-to-day tariff regulation should be avoided. It suggested putting in place a set of competition rules to regulate the entire sector instead.

Question 36: What kinds of consumer protection do you see being necessary to serve the needs of consumers in the NGN environment? For instance, are there any limitations to the provision of emergency services by IP-based telecoms services provided over the NGN? Please list these, providing details and examples where possible. Do you foresee any specific difficulties/challenges in complying with consumer protection requirements in the NGN environment? From the consumer protection perspective, what additional obligations should be imposed on a dominant operator in the NGN environment?

Summary of response

SLT argued that all service providers should be required to provide the proposed consumer protection measures and not just the dominant service provider. In particular, it disagreed with the proposal that dominant operators should bear additional consumer protection duties. Dialog opined that there is a need to ensure adequate safeguards which include access to emergency services, number portability, QoS, provision of location information, privacy and security. With the migration to NGN, it is also important to ensure consumers are sufficiently informed of the differences between VoIP and PSTN voice services, especially in terms of the availability of emergency services and QoS. Hutch 3G added that advanced security measures may be required. On the other hand, Etisalat commented that NGN has no relationship with implementing consumer-protection standards and therefore the two issues should be treated separately.

Question 37: Do you foresee any particular competition issues arising between NGNs and services and legacy telecoms networks and services? Are current regulations sufficient to restrain merger/acquisitions activities which may have an anti-competitive impact?

Summary of response

The respondents generally considered that there are no specific competition issues that would arise between the next-generation networks and services and the legacy networks and services. Only Dialog highlighted the need for TRCSL to ensure that the deployment of NGNs does not foreclose competition, either through disrupting existing competitive businesses or through preventing equality of access. Further, it considered that in the NGN environment, the emphasis of competition will shift from the lower transport and network layers to the higher layers of services and applications. As such, the emerging challenge will be to establish an interconnection framework that will allow for different types of interconnection agreements for different categories of services. It also highlighted that, in an NGN environment, the perceived bottleneck concerns relating to the access networks will remain a key regulatory battleground.

In terms of mergers and acquisitions, Dialog considered that the current licence conditions and the Competition Take-overs and Mergers Code 1995 (amended in 2003) will suffice.

Question 38: Do you agree that a change in the current licensing regime needs to be introduced to realise the full benefits of NGN? If so, what licence changes need to be introduced in the transitional period to NGN? Do you have a view as to what changes in licences you would favour at each milestone of the transformation to NGN?

Summary of response

With the exception of Etisalat, the other respondents recognised the need for a change in the current licensing regime in order to realise the full benefits of NGN as set out in their responses to Question 25–27. Tritel reiterated the need for a technology- and service-neutral licence. It further suggested putting in place a step-by-step process to design the licence conditions during the transitional period, working towards achieving a full-fledged NGN licence.

Question 39: Do you agree that TRCSL should take the lead in requiring all licensees in the NGN to adopt compatible/similar technical standards? Or should this be left to the determination of market forces?

Summary of response

Divergent views were received. SLT considered that an industry body should be set up to establish the standards. Dialog and Tritel favoured TRCSL taking the lead in requiring licensees to adopt compatible/similar standards. Hutch 3G commented that TRCSL should only intervene to set minimum standards in accordance with ITU regulations, while Etisalat considered that TRCSL should not intervene given the existence of the ITU regulations.

Question 40: What consumer-protection measures do you consider to be important for the migration period from PSTN to NGN?

Summary of response

SLT opined that customers should be informed of change well in advance, should have the consequences of change explained, be shown the alternatives available to them and have the advantages of migration made clear. It also suggested the establishment of an industry group to set out the migration practices and resolve any migration issues in order to provide consumers as seamless and painless a migration as possible. Dialog added that consumers should not suffer any service loss or degradation during the migration process. Hutch 3G suggested conducting public-awareness campaigns through the media in order to educate the public on the benefits of NGN.

Mobitel, on the other hand, commented that operators should not be compelled to migrate customers to any future technology (including NGN) and this should be left to market/commercial considerations. This is opposite to the position taken by SLT, which considered that the continued use of legacy services in parallel with NGN should be disallowed as it would affect the economies of migration to NGN.

3 Comments and views of the respondents taken into account for formulating the NGN policy and regulatory framework

Based on the consultation responses, TRCSL will consider the following key issues when formulating the policy and regulatory framework for NGN:

1. In general, the NGN policies would ensure a level playing field for all the industry players consulted in Sri Lanka.

2. In terms of the Act, an NGN advisory body, comprising of industry representatives, will be formed to advise TRCSL in respect of technical aspects of both interconnection and migration issues associated with NGNs.

    TRCSL would determine technical industry standards for the migration to NGN, as well as an interconnection inter-operability framework in consultation with the NGN advisory body. In addition, TRCSL would define a regulatory regime that facilitates customer and service migration and accepts the withdrawal of legacy services and platforms.

3. An independent not-for-profit Internet exchange (IX) will be established subject to TRCSL's regulation for exchanging Internet traffic.

4. In order to ensure a consistent end-to-end quality of service (QoS) for NGN end users, TRCSL plans to define network performance parameters (based on the ITU-T Y.1541 recommendation) and the associated threshold that will be used as a benchmark standard by operators. For this, the advice of the NGN advisory body would be sought by TRCSL, especially to determine threshold values of the performance parameters.

5. National numbering plans would be revised with the introduction of NGN to accommodate nomadic services. TRCSL agrees with stakeholders that ENUM has to be considered when devising the regulatory policy for NGNs as it will provide essential translation between legacy E.164 numbers and IP/SIP addresses. However, the numbers of the existing customers, whenever possible, will remain unchanged.

6. TRCSL will strive to ensure that infrastructure operators would not be disadvantaged *vis a vis* the service providers. Respondents' requests to review the existing licensing regime would be considered; and the licensing regime currently envisaged by TRCSL would be a two-tier structure, flexible enough to minimize administrative burden, as well as being technology neutral. The relevant competition rules, investigation and enforcement powers would also be introduced at the time of implementation of the new NGN licensing regime in order to realise the full benefits of NGN.

7   A USO model will be implemented for the deployment of NGN in rural areas, particularly for funding development in underserved areas. An advisory body for USO will be established, consisting of representatives from TRCSL and the operators.

8   The existing Interconnection Rules 2003 will be reviewed to create a non-discriminative, fair and transparent interconnection regime required for the smooth transition to NGN. TRCSL also recognises the requirement for the dominant operator to offer a Reference Interconnection offer (RIO).

9   Regulatory measures will be taken to thwart anti-competitive issues that might arise as a result of the deployment of NGN, as well as encouraging open access to core and access networks.

10   Wholesale access to the access network will be introduced for the provision of NGN services that are expected to benefit customers immensely.

11   Principles of net neutrality and technology neutrality would be adopted to promote service-based competition under an NGN environment to the maximum extent possible.

12   Consumer-protection measures would be imposed on all NGN operators irrespective of their market share in order to safeguard the interest of the consumers, especially in the areas of access to emergency services, number portability, QoS, provision of location information, privacy and security.

An informal industry group will be established to educate the consumers about the consequences they might experience as a result of migration to NGN and to resolve any migration issues in order to provide consumers a migration that is as seamless and painless as possible.