Vodafone's counter-response to TRAI's Consultation paper on 'Delivering Broadband Quickly' :

Microwave
- Some service providers have suggested that a cap of maximum 2 MWA carriers allocation in each band, especially in 15 GHz should be placed on all TSPs and that excess spectrum in 15 GHz band should be withdrawn immediately and distributed equally among all TSPs. The proposed cap seems to have been further reduced from 3 carriers to 2 carriers by such service providers from their previous suggestion made during the recent Microwave consultation.

   In this regard, we note that the Authority has already deliberated in detail on this aspect while issuing its recommendations on "Allocation and pricing of Microwave Access (MWA) and Microwave Backbone (MWB) RF carriers" dated 29.08.2014. After due review of all stakeholders' views, it has accordingly provided reasoned justifications for its decision/recommendation to **not withdraw** any MWA carriers from existing TSPs especially given that there is no shortage in the availability of MWA carriers (for allocation to other TSPs) and given that any forced withdrawal will constrain the existing TSPs to redesign their network which will require them to incur significant costs. It has already recommended allocation of maximum 4 MWA carriers to each TSP in 13/15 GHz band and incentivization for voluntary withdrawal to existing TSPs holding more than 4 MWA carriers by way of differential annual spectrum charges between lower and higher band frequencies as well as through mandatory withdrawal of MWA carriers within 3 months/1 year in case any TSP holds MWA spectrum in excess of the access spectrum vs. MWA carrier ceilings/limits.

   Therefore, in addition to our responses provided during the Microwave consultation, we strongly recommend that the Authority's Microwave recommendations be considered as final on this issue.

   Some service providers have also reiterated that MWB carriers should be assigned on an exclusive basis. We would like to re-iterate our submission that the current non-exclusive approach be continued as it is based on the practical reality of there being very limited carriers available for MWB. However, if additional spectrum bands can be identified for MWB, we would support allocation of MWB carriers on an exclusive basis.

Infrastructure Sharing
- Some service providers have suggested a 'must carry' mandate on the usage/sharing of a TSP's OFC network for proliferation of broadband connectivity. However, barring the PSUs, TSPs are already commercially exploiting OFC sharing on a large scale through infrastructure sharing agreements based on technical, operational and commercial considerations. The market being healthy and robust, the principle of forbearance must continue. However, The PSUs need to be encouraged to participate in infrastructure sharing arrangements to not only increase their ROIs (return on investments) but also to help in quicker and deeper penetration of broadband services with improved service quality.

NIXI

- Some stakeholders have suggested that NIXI needs to be strengthened so that the bulk of domestic internet traffic does not go out of the country. In this regard, it may be noted that in September 2013, the DoT (Security) wing had convened a meeting amongst ISPs, National Security Council Secretariat (NSCS) and NIXI on the issue of India centric traffic going out of India and had obtained data of internet traffic from ISPs. Although the findings of the data were not published, we understand that the collated data clearly established that the bulk of the domestic internet traffic (i.e traffic originated and terminated within India) is being routed within India and does not travel abroad. In this context, NIXI is meeting its objective. It is true that the traffic being carried by NIXI nodes is only a small portion of total India centric traffic because operators already have legacy direct peering/ interconnects. However, NIXI's role is to supplement the already existing efforts and not to compete with the ISPs or attempt for a larger share of the data traffic at the cost of direct peering arrangements.

  Some stakeholders have also remarked that content providers, e-commerce companies, social networks, broadcasters, webhosts etc. should be allowed to directly connect to NIXI nodes for exchange of internet traffic with the TSPs and that peering should be opened to all the above from anywhere around the globe through remote connectivity. However, the present purpose and scope of NIXI is only to serve as a non-profit neutral Internet exchange for peering amongst the Indian licensed ISPs having their own Autonomous system (AS) numbers so as to route the domestic traffic within the country for better quality of service, reduced latency and reduced bandwidth charges for such ISPs. Connectivity of any non-licensed entities (such as those mentioned above by the stakeholders), whether placed in India or abroad, is not within the purpose and scope of NIXI. Most of such non-licensed entities have already hosted their content onto data centres which are in turn are either directly connected to Indian licensed ISPs via bandwidth connectivities (ILLs) obtained from licensed ISPs or are indirectly connected to Indian licensed ISPs via IPLCs/ILLs for exchange of internet traffic. If the non-licensed entities are allowed to directly connect to NIXI, NIXI will need to obtain an ISP license and will need to function just like any other licensed ISP, in which case other ISPs may choose to connect to NIXI on market based and commercially agreed peering/transit basis for exchange of internet traffic, rather than on presently mandated commercials. Also, any direct connectivity of such non-licensed entities to NIXI should not preclude direct hosting/peering arrangements as may be agreed between the ISP and such entities.

Wi-Fi

- One stakeholder has recommended that a separate category of licenses should be issued to entities who wish to offer WiFi services (ie. in addition to licensed TSPs incl. ISPs) at nominal charges of Rs. 1000/- who will choose the internet backhaul (viz. wired/wireless) to aid Wi-Fi proliferation and also that web-based Wi-Fi sharing platforms should be allowed amongst home owners to enable sharing/utilization of the excess/un-utilized Wi-fi bandwidth amongst a community. These proposals need to be seen from the perspective of level playing field w.r.t licensing regime and regulatory policies. Permitting identical services to a separate set of entities with different set of rules would lead to a regulatory arbitrage and would this would be a severe threaten the entire existing licensed eco-system.

Net Neutrality

- One stakeholder has commented on the impact that a lack of net neutrality would bring. We fully support an open internet for all, across the internet ecosystem. Consumers should be able to access the services they want and know what's being done to manage their traffic efficiently.

However, net neutrality has long been a solution in search of a problem. We have no net neutrality regulations today; yet none of the doomsday predictions outlined in this stakeholder's response have happened in practice. On the contrary, the net neutrality rules proposed in the EU and elsewhere have been criticized for having the effect of preventing the basic functioning of networks and actually slowing down the internet, by preventing video optimization and prioritization of time sensitive traffic (which provides a better user experience and saves the end user money by reducing data through compression).

In relation to offering quality of services – to consumers, enterprise services or content providers – the fear that these services might slow down the internet is a false one. Internet speeds have consistently improved year on year, even where we offer our enterprise customers differentiated quality services. We have built bigger networks to provide a shared capacity which benefits all users. Without the opportunity to create such business models, there would be less of an incentive to invest in networks going forward and slower growth in the wider economy, as business services are impacted. In addition, this quality of service will drive new innovations; smart grids, remote health solutions, connected cars. Prioritization can take many forms within the internet ecosystem; via CDNs which move content closer to the end user, browsers which optimize and encrypt data, search engines and caching, to name but a few. The internet is really a network of networks. We have an open and inclusive internet today because rather than despite the fact that there is a complex mix of interlacing business models throughout the internet ecosystem.

NOFN/ PPP
- Some stakeholders have commented on the role of Public Private Partnership (**PPP**) in efficient rollout of the NOFN to deliver backhaul to areas which is not possible on a commercial basis. We agree that effective management of the NOFN will be the key to its success; and through a PPP, the private sector can bring the management, governance and operational expertise required. There are a number of factors required for a PPP that can facilitate efficient delivery of the NOFN:
  - Substantial level of participation by a consortium of private partners who can provide strategic direction and operational management.
  - Close consultation with stakeholders on the structure, scope, direction and management of the fibre company, rollout plans, and expertise in designing wholesale products that are fit-for-purpose, useful and priced at the right level.
  - The company is an independent entity, though it might include representatives of communications operators and the government.
  - Constrained to a wholesale-only business, which does not sell directly to customers.

Dark Fiber
- In the NOFN project TRAI can help in supporting high-speed, high-capacity broadband in underserved areas by facilitating the introduction of access to dark fiber for mobile backhaul that will serve the current and future needs of India's business and citizens. Dark fiber would enable mobile operators to take control of and manage fiber backhaul that would otherwise be managed by others. The great benefits of this are to enable operators to rollout faster as they are no longer dependent on the fiber provider for delivery of the electronics; there is much greater ability for operators to innovate than with a managed product; and it creates an opportunity for operators to provide their own wholesale services. Regulated dark fiber access could assist in maximising the potential of the NOFN. We consider the effort of designing and introducing dark fibre will be worthwhile and is essential in order to achieve the ubiquity of coverage, scalability of network and competition, innovation and choice.