

**Re: Comments on the Pre- Consultation Paper dated 9<sup>th</sup> December 2019 on  
“Enabling Unbundling of Different Layers through Differential Licensing”**

**From: Dua Consulting**

**Date: 27<sup>th</sup> January 2020**

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***Q1. What could be the possible benefits and anticipated problems in having an unbundled licensing regime? Kindly suggest the measures that can be taken to overcome the anticipated problems (if any).***

- 1.1 Reforming the licencing and regulatory regime to catalyse investments, innovation and promote ease of doing business by enabling unbundling of different layers (i.e. infrastructure, network, services and applications layer) through differential licensing. Various fiscal and non-fiscal benefits need to be introduced for development of telecom clusters around cable landing stations to foster innovation in digital communications technologies. This will also promote collaboration models involving state, local bodies and private sector as necessary for provision of shared duct infrastructure in municipalities, rural areas and national highways.
- 1.2 With scale, specialty of various components of the technology has become heterogeneous and unique in themselves, outsourcing sharing in order to optimize task is the game, especially in India when the industry is in heavy debt. Therefore, our belief is, wherever possible, both active and passive infrastructure should be unbundled and allowed to be shared among operators under a soft touch regulatory umbrella.
- 1.3 Considering the possible resistance of incumbents to unbundle, the following can be the solutions:
  - (i) *Monetary compensation to old market operators-* marketplace is proposed to allow multiple network operators to utilize a passive optical network infrastructure and reuse others’ under-utilized capacity. This marketplace may provide monetary compensation/ and subsidy or waiver of certain part of their dues to the operators who share their excess transmission opportunities. The market assumes an ownership model where an infrastructure provider owns the entire passive network and allocates a certain capacity to the virtual network operators, which can trade their excess capacity among them. Network operators can monetize their idle resources and in peak usage times serve their customers with a higher rate. Finally, the concept of purchasing assured capacity-on-demand at small granularity can support novel, revenue-generating applications, which require deterministic delivery of network capacity to operate correctly.
  - (ii) *Competitive Markets-* The auction mechanism should be in parts, diverse and economically robust in order to prevent instances of manipulative trade. In case of

multiple bidders agreeing at the same price, drawing may be done by lots or in parts to multiple institutions. The industry should be friendly to accommodate newly established networks, and the Quality of Service Parameters should be non-compromised for per existing and new entities alike. Further, government representation may be made, and telecom operators who are not willing to share networks shall be penalized, or, may be required to pay a surge for not sharing resources. All operators, leased line, as well as infrastructure owning should declare their utilized and available resources with the DOT on an annual basis in order to ensure constructive sharing.

*(iii) Bilateral trading-* The application of Blockchain in the creation of machine to machine service and resource marketplaces must be addressed and a blockchain solution for network slice brokering in 5G networks followed internationally may be taken as a cue to the Indian regulations. A blockchain-based distributed bilateral trade mechanism may be introduced where technology companies may leverage their cutting-edge techniques with telecom operators as a part of non-disclosure agreements and in order to promote two competitive or complementary structures. The bilateral trade could also be in the nature of liberal models of sharing such as multiple input multiple output for operating in testing and bifurcating resource allocation, mobile crowd sensing, spectrum sharing, and passive/ active network sharing among registered entities with due tracking mechanism in an untrusted environment. Commercial terms for sharing of the in-building telecom infrastructure system, may be decided by the provider-TSP. However, the same shall be done in transparent, fair and non-discriminatory manner.

*(iv) Procedural amendments:* There must be a distinct guideline addressing taxability of such agreements, adjustment of under paid or excess paid license fee, and a timeline for implementation of the guidelines. Also, the technical opinion of the stakeholders should be seen in order to address the current roadblocks.

***Q2. In case it is decided to unbundle the different layers of licensing,***

- (a) what should be the different layers and their scope? What changes would be required in licensing regime to enable such a framework?***
- (b) Should there be a new regime of licensing on which the existing licensees should migrate within a specified time frame or there should be a parallel incentivized licensing regime for unbundled layers of license?***

2.1 Spectrum sharing was of utmost importance to ensure optimal utilization of the available spectrum. The basic objective of spectrum sharing is to enhance spectral efficiency by combining/pooling the spectrum holding of two licensees. The gain in spectral efficiency increases non-linearly with the quantum of spectrum. Sharing and

unbundling at various stages had been promoted by the Department of Telecommunications

2.2 We take this opportunity to discuss some important milestones of telecom regulations and arrangements in order to reduce input capital cost of telecom access service providers towards fixed infrastructure, thereby facilitating further reduction in tariff and to enhance the tele density

- Sharing of active infrastructure amongst Service Providers based on the mutual agreements entered amongst them is permitted. Active infrastructure sharing, limited to antenna, feeder cable, Node B, Radio Access Network (RAN) and transmission system only, was permitted. Sharing of the allocated spectrum will not be permitted.
- Infrastructure Providers (IP) Category-I were allowed to seek clearance for erecting towers with or without agreement with licensed service providers;
- To provide incentives on the infrastructure sharing in the urban areas, State Governments were requested to charge same amounts for setting up of the shared tower, irrespective of the number of Service Providers sharing the same tower at par with unshared tower.
- Under Unified License (UL) policy, Virtual Network Operators (VNOs) were created to exploit the benefits of convergence, spectrum liberalization and facilitate delinking of the licensing of networks from the delivery of services so as to enable the Telecom Service Providers (TSPs) to optimally and efficiently utilize their networks and spectrum by sharing active and passive infrastructure.

2.3 We are in support of all levels of unbundling barring access services. Access is what is really licensed since it faces the customer, collects revenues, which is a custodian of payment of statutory dues. Sharing of access infrastructure could result in conflict, loss in revenue and sharing of vital responsibilities.

2.4 We are of the opinion, that a cost-effective method of further regulation must be established to allow overall investments in the telecom sector and provided the incumbents do not panic. The late entry of one in the market should not be a deterrent for market access and sure enough he can provide good competition to existing players by technical superiority and new business approaches.

2.5 Keeping the Indian Telegraph Act, 1885 and the current UL as the guiding principles of law, all criticism to the regulations should be absorbed in order to lock the loopholes of the existing laws including guidelines for mergers. Clear guidelines for a licensee to apply for VNO should also be enabled.

**Q3. *In case you are of the opinion that there is no need of unbundling of different layers of the license, what changes should be made in the existing licensing regime to (i) promote sharing to increase utilization of the existing resources, and (ii) catalyse investments and innovation in Digital Communications sector?***

3.1 There should not be any thought of a need assessment for bundling of layers. In the interest of valuation of the telecom industry, optimum utilisation of telecom resources, optimising liquidity in the market and for the telecom industry to proliferate in India and globally, a robust technological acceptance is needed, keeping in mind a 5G future friendly mechanism.

**Q4. *What other reforms / changes are required in the existing licensing regime?***

4.1 It is now essential to reform the licensing and regulatory regime and promote ease of doing business by enabling unbundling of different layers (infrastructure, network, services and applications layer). Telecom operators should provide “non-discriminatory” and transparent network and infrastructure elements on an unbundled basis at any technically feasible point on rates, terms, and conditions that are just, reasonable and non- biased.

4.2 We briefly introduced solutions to some challenges, including a market model, bilateral agreements, competition and regulatory issues. Multi-tenancy could potentially facilitate new partnership and co-investment models for network operators in answer 1. Further, in answer 2, we also provided a brief background on the technological development and the possible changes required in the regulatory framework.

4.3 The unbundling of access services might not be practical at this stage since grant of MVNO capacities are bought, not installed.

4.4 Finally, we conclude our submissions with a few insightful remarks on possible future guidelines:

- Designing and regulating unbundled ownership models should be a key policy priority to ensure cutting-edge technology, making India a powerhouse of the telecom industry and cater smooth deployment of 5G networks.
- More research is needed to determine the business implications of the new ownership models, presumably utilizing novel approaches such as artificial intelligence and smart contracts and assessing the potential for other network component/function virtualization opportunities to enhance the flexibility of the shared access will be the key factor in making a market supportive law.
- Further study of the pain points of the Telecom service providers and roadblocks of prospective applicant and telecom start-ups may be relevant to make guidelines more in line with the requirements.