

# **IAMAI Submission on the Consultation Paper on 'Implementation Model for BharatNet'**



**Submitted to the TRAI**

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## I. Introduction

On behalf of our members we take this opportunity to thank the TRAI for coming up with this Consultation paper on “**IMPLEMENTATION STRATEGY FOR BHARATNET**” and offering us a chance to offer a few general observations for promoting ‘universal and affordable access to broadband to every citizen’ – a vital pillar of the government’s path-breaking Digital India initiative. This is a goal which we identify with very closely and look forward to engaging with the government as we continue towards realising the vision for a Digital India.

## II. Preliminary Submissions

Before responding to the specific questions raised by the TRAI Consultation Paper (“CP”), we would like to offer a few general observations regarding the promotion of universal broadband connectivity in India.

### A. Recognising the Value of Connectivity

Access to the Internet plays an important role in determining a citizen’s ability to access basic services and resources such as healthcare, education, job training, personal security, and economic opportunity.

Despite the progress made so far in extending Internet access, India’s poor internet penetration<sup>1</sup>, dimly low fixed broadband penetration<sup>2</sup> and unconnected population of nearly one billion illustrates the mammoth task that lies ahead. However, bringing the ‘next billion’ online holds great potential for India’s socio-economic development. It is estimated that raising Internet access to developed world levels in India can create upwards of 65 million jobs, accelerate GDP growth by 110%, increase per capita income by 29%, and decrease extreme poverty by 28%<sup>3</sup>. The Report of the Committee on NOFN estimated that the implementation of the project can result in expected benefits of Rs. 66,465 crores in the first year of commissioning.<sup>4</sup>

It is also vital to note that the Internet revolution has created a new ecosystem; a “digital economy” which includes device manufacturers, app stores, carriers, and all kinds of online services, content and apps. All these elements of the digital economy have sustainable business models and would benefit financially from reliable broadband connectivity and the new communities that will be connected thereby. This connectivity will spur competition, innovation, economic growth, create jobs, improve access to education, and increase the affordability of access.

### B. Role of BharatNet in Connecting India

With regard to the above, the National Optical Fibre Network (“NOFN”), which was initially to be deployed to meet the National Telecom Policy, 2012 (“NTP”) goal of providing “high-speed and high-quality broadband access to all village panchayats through a combination of technologies by the year 2014”, is essential to India’s broadband policy and connectivity objectives. The main objective of NOFN project, now known as BharatNet, and initiated by the GOI in 2011, was to extend the existing Optical Fibre Network [OFN] to 2.5 Lakh Gram Panchayats [GPs] by utilizing Universal Service Obligation Funds (“USOF”) and creating an institutional mechanism for management and operation of NOFN. Government’s *Digital India initiatives* such as 100% broadband penetration, smart cities, e-

<sup>1</sup>In the recent United Nations Broadband Commission, India was ranked 136 (out of 191 countries) with only 18% of individuals using the internet.

<sup>2</sup><http://www.itu.int/en/ITU-D/Statistics/Pages/facts/default.aspx>, With 1.1% India ranks 122<sup>nd</sup> in the World as per the ITU Facts and Figures report 2015

<sup>3</sup>Deloitte, “Value of Connectivity: Economic and Social Benefits of Expanding Internet Access”, p.17.

<sup>4</sup> Paragraph 5.07 of the Report of the Committee on NOFN.

kranti etc are very promising initiatives in connecting the unconnected to the Internet which will depend on the timely commissioning of NOFN targets. The Digital India project has the potential to provide opportunities worth \$19 billion for the digital sector between 2014 and 2018.<sup>5</sup>

Government's ambitious Digital India plan includes:

- *Providing Digital infrastructure as a utility to every citizen – every citizen will have a digital identity, mobile phone and bank account with a safe & secure cyber space.*
- *E-Government services available in real time to all the rural and urban population on internet and mobile platform, making financial transactions electronic and cashless*
- *Digital empowerment of citizens - all documents, certificates of each citizen available on cloud.*

All this will depend on the NOFN targets being achieved, which require efficient management and operation to achieve the desired result in time. This can be solved if the implementation of NOFN moves as per the plan. This has not been the case so far. Lack of Public sector participation, issues of Right of Ways [ROWS] for the private sector, heavy infrastructural investment by the TSPs, lack of government initiative to incentivize the Telcos and private sectors to invest in rural India, uneven broadband roll out and not utilizing the already laid out cable TV networks etc are some of the glaring issues for unsuccessful NOFN penetration in the country. The implementation of the project – revived as BharatNet – has been substantially delayed. The project was commissioned in 2011 to be completed by 2013-14. But as on November 2015 only 1.3% of the target [3384 GPs] has been connected.<sup>6</sup>

From users perspective cost of broadband access is high. According to the International Telecommunication Union [ITU] the cost of an entry-level broadband plan in India is equivalent to 5.5% of an Indian's per capita income which is unfeasible in comparison to a similar plan that accounts for 0.5-0.8 % of per capita income in countries such as Singapore, the US and the UK. Cable-landing station charges have also increasingly become a significant portion of the total bandwidth charges in India which gets imposed on the consumers.<sup>7</sup> The OFN could solve this issue, but it is a big investment venture and returns are slow. A submarine cable link between the Orissa coastline [Puri] and Port Blair was rejected on grounds of "capital cost escalation".<sup>8</sup>

NOFN's success will largely depend on taking relevant and urgent action on evaluation of the aforementioned issues/obstacles and developing specific and clear framework of strategies to address those challenges. Therefore, the need of the hour is to evolve implementation strategies and mechanisms that promote accountability and efficiency in the timely implementation of BharatNet. In this regard, this CP is an important step towards revitalising the project and ensuring that the NTP's goals of achieving inclusive development by encouraging participation in the web-economy are fulfilled. In view of the imperative need to connect almost 1 billion people in India,

<sup>5</sup> I.J. Information Technology and Computer Science, 2015, 10, 42-53

<sup>6</sup> [http://articles.economictimes.indiatimes.com/2013-03-31/news/38163288\\_1\\_isps-doug-madory-providers/2](http://articles.economictimes.indiatimes.com/2013-03-31/news/38163288_1_isps-doug-madory-providers/2)

<sup>7</sup> [http://articles.economictimes.indiatimes.com/2014-06-05/news/50358927\\_1\\_tcil-subsea-telecom-commission](http://articles.economictimes.indiatimes.com/2014-06-05/news/50358927_1_tcil-subsea-telecom-commission), The government plans to establish a nearly 1,200-km direct subsea optic fibre cable link between the Indian mainland and Andaman & Nicobar islands (A&NI) to beef up telecom connectivity in the strategically located archipelago.

<sup>8</sup> [http://articles.economictimes.indiatimes.com/2014-06-05/news/50358927\\_1\\_tcil-subsea-telecom-commission](http://articles.economictimes.indiatimes.com/2014-06-05/news/50358927_1_tcil-subsea-telecom-commission)

TRAI's guiding principle in contemplating any Internet-related policy must be the promotion of high-quality, affordable Internet access, in a timely and cost-efficient manner, to everybody in India.

### III. Critique of the NOFN Models Proposed

#### A. Implementation Models-SWOT analysis

The DOT committee had suggested various implementation models in the Report on NOFN released on 31<sup>st</sup> March 2015. The three potential implementation models identified by the "Report of the Committee on NOFN" all relied upon govt. (Centre or State) to expedite the process, while following different approaches. However, all models suffered from the following challenges:

Following table analyses the key characteristics and issues with these models.

General Parameters	CPSU-led Model	State-led Model	Private-led [EPC/Consortia]
Contract Assigned to	Existing PSUs- BSNL, RailTel and Powergrid	States to establish SPVs [Special Purpose vehicles] with equity participation of Central government	EPC companies with manufacturers forming consortia to establish operate and maintain the project.
Role of government	BBNL[Bharat Broadband Network Limited] to acquire capabilities for observing, monitoring [Network Operation Center, BBNL] and enforcing contracts	Central government though BBNL to establish, operate, monitor and maintain the project.	BBNL to acquire capabilities for observing, monitoring and enforcing contracts
Asset Ownership	Vests with Central Government	Vests with SPV	Vests with Central Government
Business Feasibility	Competitive bidding for Price discovery. Incentives/disincentives linked to timelines	Same as CPSU. If revenue < cost, Central Government funds O&M else state SPV can retail additional revenues.	Tender for reasonable number of GPs in a single group of states on "Build & Maintain" basis. CAPEX for each package shall be fixed and linked to milestones.
Payment Terms	Annuity payments linked to achievement of SLA [Service Level Agreements] parameters	Not available	Monthly payment of Annuity linked to SLA Incentive of revenue sharing if bandwidth utilisation exceeds a threshold level

#### SWOT Analysis

Strength			
1.	Such model would be useful in States where law and order issue are likely to inhibit project implementation over private led model	State Governments are the principal carrier of Government services and incentivizing State participation in the project may lead to better delivery of Government services.	The package approach optimizes network rollout by ensuring parallel execution across multiple packages through different Implementation Partners.
2.	This model will be advantageous covering difficult geographical spread which requires alternative to OFN viz., J&K, HP, UK, Arunachal Pradesh, Meghalaya etc	Co-ordination with State Government agencies can be best managed by States leading to better project outcomes.	The success/failure of any package does not impinge upon the implementation of other packages.

3.	Due to competitive bidding for price discovery the risk of project cost escalation can be shifted away from the CPSU safeguarding the incentive structure and leading to better execution and management.	Multiple models managed by multiple interested stakeholders may lead to better project management and timely completion by leveraging project management resources available at the State level	Fixed Capex will provide incentive for the implementation partner to achieve the SLAs.
4.	Incentives/disincentives linked to timelines would bring necessary accountability and ownership.		BBNL to concentrate only on project monitoring, ensuring deliverables and enforcing SLAs
<b>Weakness</b>			
1.	Absence of multiple models by multiple stakeholders as is in the case of State-Led model for better project management and timely completion	Lack of professional management expertise and skills	BBNL will have to manage, monitor and enforce several bid processes.
2.	Lack of co-ordination with state government agencies as in the case of State-led models and management of resources will be a problem.	Experience has shown that accountability mechanisms have failed.	Lack of clear accountability structures and Rights of Way
3.	BBNL has a larger responsibility of execution operation monitoring and enforcing contracts.	Lack of Accountability arising from the relationship between the Government owned incumbent and the USOF Administrator [Applies to Central led model too]	Success of such models will depend on the willingness of the private sectors to participate in the bidding process.
4.	Bureaucratic hurdles resulting from being a State entity.	States are opting for their own SPVs to implement NOFN, this will give rise to issues: Transferring funds to multiple bodies and tracking their work separately.	Additional monitoring costs on Executing Agency
5.	Experience has shown that incentive and accountability mechanisms have failed.	3 PSUs (BSNL, RailTel and PowerGrid) involvement with multiple SPVs would add to the problem	Lack of corporate incentive to participate in project
<b>Opportunity</b>			
1.	This model should be applied only to those conditions where other models won't be suitable.	Better co-ordination with the involvement of state government agencies and management of resources will be easier.	Multiple packages would entail partnering with different Implementation Partners thus providing a platform to leverage the strength of the Private Industry

2.	For the risky states private sectors will be uninterested or may seek a premium on projected costs. CPSUs would be a better position to handle such states.		Such a bundling model overcome the problem of non-availability of resources within BBNL.
<b>Threat</b>			
1.	Issue and failure of accountability mechanisms	Availability of project management capacities in the communication space so as to technically design and manage a project of the complexity envisioned.	Due to multiple packages, the inventory supplied will vary significantly and can cause complexities.
2.	Non-Enforcement of the incentive structure.	Bureaucratic hurdles in approvals and contracting	Concerns about vertical integration and monopolistic practices
3.	Chances of bias towards BBNL by USOF		

Any fibre network should be built with principles around equivalence. Although the social objectives of Digital India drive the NOFN build, it should be recognised that most network build tends to be where the population lives and works. Hence, a federated network model allowing for equivalent access to existing ducts, poles and wayleaves, drives roll out. In addition rights of way should extend to all operators. As a final point, spectrum planning & license free additional high frequency; high capacity bands can provide a fibre over radio solution for the fixed links for last mile and may be more economical than direct fibre roll out.

#### IV. Responses to Issues for Consideration

(QUESTIONS NUMBERED AS PER CONSULTATION PAPER)

**Q.1 “Report of the Committee on NOFN” has recommended three models and risks/advantages associated with these models. In your opinion what are the other challenges with these models?**

The “Report of the Committee on NOFN” recommended Private-Sector-led, State Government-led and Central Public Sector Undertaking (CPSU) led as three models for the implementation of BharatNet across India. However, as experience has shown, both in NOFN and in other projects, each of these models suffer from serious deficiencies which affect the timely and cost-effective implementation of the project. These include the following:



At the same time, each model offers specific advantages in terms of implementation strategy [As seen in the table above]. For instance, private sector-led approach would involve less bureaucratic layers in decision-making while State and CPSU models would negate the role of commercial viability considerations for the implementing party. Given that the utmost priority is the timely provision of universal connectivity to all Indians, what is required is a hybrid model which balances the advantages, risks and efficiencies of each of the three proposed models.

The Build-Own-Operate-Transfer (“BOOT”) approach provides a balanced model that will spur speedy and cost-efficient implementation of BharatNet. The model balances both public and commercial interests by allowing a public authority to enter into an agreement with a private company to ‘Design, Build, Own and Operate’ specific infrastructure along with the right to earn income from the same for an agreed-upon period of time. Upon the elapsing of this period, the infrastructure would revert to public ownership. The model allows governments to subcontract substantial technical and operational risks to the private sector, while the latter with its efficiency and effectiveness would turn the risks into opportunities in the development of a public facility. In addition, it would enable timely completion of the projects on where the government need not expend funds in either implementation or monitoring costs. [Please see answer to Question No.4].

**Q.2 Do you think that these three models along with implementation strategy as indicated in the report would be able to deliver the project within the costs and time-line as envisaged in the report? If not, please elucidate.**

As stated above, none of the proposed three models seem to be appropriate fit to respond to the need of digitizing India. The need of the hour is to evolve implementation strategies and mechanisms that promote accountability and efficiency in the timely implementation of BharatNet. Till date, initial time and cost estimates have far been exceeded and the resulting delay has contributed to the digital divide between rural and urban communities widening even further. While urban users have had access to more coverage and advanced technologies, rural Indian users remain excluded.

To quote Mario Cuomo who stated in the New York Times, May 1985; *“It is not the government’s obligation to provide services but to see that they’re provided.”* Public-private partnerships will be central to economic development where the government’s awareness for subcontracting public facilities to private companies will grow exceedingly. A BOOT model balances the advantages, risks and efficiencies of government-led, PSU-led and private-sector-led implementation models and presents the best opportunity to realise time-bound, cost-efficient and accountable implementation of BharatNet and thereby universal broadband connectivity. At the same time, given the multiplying costs for the project, a BOOT model isolates public funds from unanticipated depletion by allowing



governments to outsource risk, maintenance and operational activities to the private sector. Overall, the BOOT model presents the most effective and efficient approach towards realising the objectives of the Digital India vision of the government.

**Q.3 Do you think that alternate implementation strategy of BOOT model as discussed in the paper will be more suitable (in terms of cost, execution and quality of construction) for completing the project in time? If yes, please justify.**

Yes, BOOT model will be more suitable (in terms of cost, execution and quality of construction) for completing the project in time. BOOT model involves a single organisation, or consortium (BOOT provider) designing, building, funding, owning and operating the scheme for a defined period of time and then transferring this ownership across to an agreed party. As already stated this balances the advantages, risks and efficiencies of government-led, PSU-led and private-sector-led implementation models and presents the best opportunity to realise time-bound, cost-efficient and accountable implementation of BharatNet and thereby universal broadband connectivity. BOOT will allow the implementation of OFN to happen very quickly. Corporate structuring issues and costs are minimal within a BOOT model, as project funding, ownership and operation are the responsibility of the BOOT operator. These costs will however be built into the BOOT project pricing. There will be better and effective marketing of optic fiber services in the country under this model by the players in providing reliable and secure solutions. There will be healthy competition to adopt world class infrastructure methods for a better presence in the market without any monopolisation. This will help in boosting internet awareness and adoption among unconnected masses.

In recent years, BOOT projects are considered applicable to both developing countries and developed economies. The model has been a revolutionary concept in India's renewable Energy industry as well.<sup>9</sup> The greatest advantage of BOOT for the government is the subcontracting of the majority of the technical and operational risks to the private sector, with the latter willing to finance and assume risks in the development of a public facility. At the end of the concession period, the government will inherit a well-operated project without investing public funds and with little risks. The finance is obtained by private organizations and the execution of the project is independent of the financial planning of the government. Furthermore, because the design, development, and construction are all the responsibilities of a single party, the facility is more effective and efficient. The governments, worldwide have given way to BOOT model for the development of airports due to their constrained fiscal position and India is not an exception.<sup>10</sup> Bangalore International Airport has been developed under BOOT model and is a good example of Airport development under Public Private Partnership. As per the Concession agreement and shareholders agreement the project risk was distributed among the partners based on their ability. The success of the project proves that the private sector have the capacity to execute big projects in time bound manner with its own financial sources under such financial model.

**Q.4 What are the advantages and challenges associated with the BOOT model?**

The BOOT model balances both public and commercial interests by allowing a public authority to enter into an agreement with a private company to 'Design, Build, Own and Operate' specific infrastructure along with the right to earn income from the same for an agreed-upon period of time. Upon the elapsing of this period, the infrastructure would revert to public ownership.

<sup>9</sup> <http://www.iosrjournals.org/iosr-ief/papers/ICIMS/Volume-1/7.pdf>

<sup>10</sup> [http://vsir.iimahd.ernet.in:8080/xmlui/bitstream/handle/123456789/11494/CMS-PP-217-Greenfield\\_Airport\\_Development\\_in\\_India-151-Gupta\\_b.pdf?sequence=1](http://vsir.iimahd.ernet.in:8080/xmlui/bitstream/handle/123456789/11494/CMS-PP-217-Greenfield_Airport_Development_in_India-151-Gupta_b.pdf?sequence=1)

The model allows governments to subcontract risks to the private sector, while the latter would finance and assume risks in the development of a public facility. In addition, it enables the completion of projects on which the government cannot expend funds in either implementation or monitoring costs. In a well-executed BOOT project, the government would receive a well-maintained project having invested no resources of its own and negligible risk. Moreover, it centralises the onus of construction, maintenance and operation on a single party – thereby providing conditions for more efficient decision-making.

Effective marketing strategies will be adopted for fiber services in the country which will lead to healthy competition boosting internet awareness and adoption of internet among unconnected masses.

Significant disadvantages of a BOOT project are complex project-management, abuse of gatekeeper role of concessionaries as well as uncertainties in revenue generation over the concessionary period.

- i. **Uncertainties in Revenue generation.** Given the low internet penetration rates prevalent in most regions of the country, the web economy is likely to see a sustained increase in penetration levels once connectivity is extended at the Gram Panchayat level. This increase can be maximised by adopting and supporting innovative measures which boost internet awareness and adoption among previously unconnected communities. In light of the same potential for capturing massive customer bases, private sector parties would be more willing to enter into BOOT arrangements with the government.
- ii. **Project Management.** While the initial aspects of project management and allocation of responsibilities may be complex, it is to be seen in light of the significantly lower monitoring costs incurred by the government during the course of implementation and operations of project over the concessionary duration.
- iii. **Abuse of position.** Carefully crafted contractual terms and conditions may prevent abuse of its position by the concessionaire during the operational period. In this regard, clauses could include:
  - Those preventing vertical integration of operations without prior approval
  - Those imposing ceiling tariffs to ensure affordability

#### **Q.5 What should be the eligibility criteria for the executing agency so that conflict of interest can be avoided?**

Eligibility criteria should not be restricted to only those entities with existing ISP, access or other telecom licenses. A diverse participant pool in the competitive bidding for selection of executing agencies [EAs] is instrumental in mitigating the risk of vertical integration and in promoting open competition. Our recommendation would be to have EAs, which could be TSPs or Infrastructure Providers or other commercial entities that will need to offer all its services to any customer on non-discriminatory basis through competitive bidding process. Fiber availability need not be limited to Service Providers only. In future private networks are expected to carry significant part of traffic and would be big potential users of such OFN being available.

Eligibility criteria for the executing agency should be based on a combination of technical parameters that can ensure successful execution & monetization, as well as financial stability. This has been detailed below:

- Technical parameters (such as solid core capabilities, guarantee of conformance to technical specifications either by themselves or via an EPC contractor)
- Commercial/ Financial parameters (such as financial stability)

The Central government should pre-qualify vendors who have capabilities to build the network in the various LSAs through an RFI process beforehand, with the EAs allowed the freedom to select builders from this pre-qualified list for their respective LSAs. This will ensure that the network deployment is nationally integrated and executed via reputed vendors (vs. Small local participants) with high assurance of high quality project completion, while also opening up the participation in BharatNet to a larger group of private sector investors.

In order to avoid conflict of interest and to provide services in a fair, transparent and non-discriminatory manner, the deployment model should include or provision for the following measures:

- Collaboration or sharing of infrastructure both telecom and non-telecom related
- Any single entity or consortium that means the eligibility criteria can be allowed to bid, provided TSPs and ISPs are not part of such a consortium to avoid monopolization via vertical integration in the value chain
- Price control policy (e.g., cost plus with a defined margin and/or ceiling on the selling price of the services offered) to be defined from the outset

**Q.6 Should there be a cap on number of States/ licensed service area to be bid by the executing agency?**

NA

**Q.7 What measures are required to be taken to avoid monopolistic behaviour of executing agency?**

No restriction should be imposed on number of licensed areas to be bid by any participating executive agency. As indicated in response to Question 4 above, well-crafted contractual terms may prevent chances that the concessionaire would abuse its position during the operational period. In this regard, clauses could include those preventing vertical integration of operations without prior approval, those imposing ceiling tariffs to ensure affordability, availability/allocation of fiber to any user/service provider on non discriminatory basis, etc.

**Q.8 What terms and conditions should be imposed on the executing agency so that it provides bandwidth/fibre in fair, transparent and non-discriminatory manner?**

NA

**Q.9 What flexibility should be given to the agency in terms of selection of route of laying optical fibre, construction, topology and deployment of technology?**

NA

**Q.10 What should be the methodology of funding the project? In case of VGF, what should be the method to determine the maximum value of VGF for each State/ service area and what should be the terms and conditions for making payments?**

As an alternative to minimum/maximum VGF requirement as the selection criterion, we recommend using criteria that align better with the articulated guiding principles. For instance, choice based on

factors such as speed of roll-out, uptake commitments that the bidder is willing to make, concession period required by the bidder etc. are better aligned with BharatNet objectives vs. choice of Executing Agency based on VGF requirement quoted.

EAs should be mandated to offer unbundled telecom services to all customers in non-discriminatory manner whether it's a service provider or not. Despite having multiple EAs building different parts of the NOFN in the country, there needs to be a nodal point/agency to ensure seamless integration of these various networks builds to make it available for end to end use. Necessary processes/mechanisms need to be put in place that users/buyers are not struggling with different EAs to get desired end-to-end connectivity. If needed, nodal agency could also manage the 'major' nodes of the country with central level network supervision.

**Q.11 What kind of fiscal incentive and disincentive be imposed on the agency for completing the project in time/early and delaying the project?**

NA

**Q.12 What should be the tenure/period after which the ownership of the project should be transferred to the Government?**

NA

**Q 13 Do you think that some measures are to be put in place in case the executing agency earns windfall profits? How should windfall profits be defined?**

NA

**Q.14 Whether there is a need to mandate the number of fibres to be offered as a dark fibre to other operators to ensure more than one operator is available for providing bandwidth at GP level?**

At present, there is no need to mandate offering or allotment of fibre to any operators in particular. Any policy in this regard must be informed by the guiding principle of promoting free and open competition between operators. The Committee Report on NOFN recommends that at least 50% of fibres at the Block-Gram Panchayat level be put to auction for allotment to various operators; cable operators and others. Moreover, it recommends the retention of 4 pairs of fibres<sup>11</sup> by the implementing agency – which may be the State, CPSU or private sector entity as the case may be. Moreover, it is recommended that a certain number of fibres be reserved for use by government departments for provision of services to citizens.

The Recommendations raises a number of uncertainties – particularly relating to allotment of fibre to government services and the availability of sufficient bidders to ensure a competitive auction process. In contrast, the BOOT model simplifies the process as it allows the executing agency to allot the fibre to various operators as it sees fit (subject to tariff ceiling, competition and vertical integration limitations). This commercial model ensures that every fibre will be put to the most efficient use and market forces are allowed to dictate pricing and bandwidth demand. As a result, it would drive prices lower while ensuring that high-quality access is provided even to the most remote of areas.

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<sup>11</sup> "4 pairs of dark fibre shall be provisioned for bandwidth by the CPSU, State Government SPV or Implementation Partner in the three implementation models"

To speculate how EA's business will grow with time will be hard, as it's not dependent only on demand but also ability of EA to manage their operations and business efficiently. The model should encourage following:

- (a) Assure a minimum level of infrastructure build over a given time
- (b) Performance of network maintained at minimum availability over a period of time
- (c) Share risks & rewards proportionately with Government with varying % of revenue at different levels.

**Q.15 What measures are required so that broadband services remain affordable to the public at large?**

A sustainable and robust utilisation policy would be one which leaves the determination of demand for bandwidth and pricing to market forces but at the same time which ensures that connectivity is affordable to all sections of society. In this regard, the government must remain open to innovation and the introduction of new technologies which may provide affordable connectivity at the last-mile. In addition, as suggested by the Committee Report on NOFN, tariff ceilings are one such mechanism that may be implemented to ensure affordability to end-users and at the same time creating a pro-competition environment. Table 6.2 of the Report provides a suitable starting point in this regard. In this regard, we urge the government to consult with all stakeholders before prescribing ceilings at the time of completion of each phase of the project.

We suggest business models to be more innovative here to promote rapid roll out of Internet services in the country. Defining number of service providers using the network may not yield the desired results. It is essential to motivate the EAs or their customers to get their network used more & more and incentives linked to traffic (no of giga bytes) per capita or population based in given state or licensed service area. Indeed, there should be minimum benchmark of OFN usage over time to ensure that fiber assets do not remain buried under ground without much use. In extreme situation, Government should be allowed to take over and repurpose the OFN in that part of the country.

**Q.16 What safeguards are to be incorporated in the agreement entered between Government and executing agencies if RoW is not being granted to the executing agency in time?**

NA

**Q.17 The success of BOOT Model depends on participation of private entities which will encourage competition. What measures should be adopted to ensure large scale participation by them?**

Private parties should be incentivised to participate in BOOT projects based on a well-structured incentive scheme and a commitment to regulatory certainty by the government. In this regard, favourable concessionary agreement durations, facility for single-window or quick approvals/clearances, tax incentives and easing of exit norms would go a long way towards encouraging private sector participation.

Eligibility requirements to participate as an 'Executing Agency (EA)' must also be suitably tailored to enhance competition and encourage diverse participation. Eligibility should not be restricted to only those entities with existing ISP, access or other telecom licenses. A diverse participant pool in the competitive bidding for selection of EAs is instrumental in mitigating the risk of vertical integration

and promotes open competition. In addition, the government providing a commitment to facilitating BharatNet on a priority basis would provide additional impetus to private sector participation.

There could be much more demand for fiber networks in the country in next decade than what we could foresee today. To encourage EAs as well as for their better business viability, EAs should be left free to build more ducts or blow more fibers than any prescribed level of infrastructure as may be set out in initial selection criteria for EA selection process. Additional infrastructure build options could be even incentivized as EAs take more risks in investing additional capex. EAs should also be encouraged to sell passive infrastructure to bulk users, which could make their business case better and also help reducing costs for the same network being available for public use in more economical manner.

**Q.18 Please give your comments on any other related matter not covered above.**

NA