DTT Services in the presence of multiple delivery platforms:

Q. 1 Do you perceive the need for introduction of Digital terrestrial transmission in multiple broadcasting distribution platforms? Please provide your comments with justification.

Yes there is an inherent need to upgrade terrestrial transmission services in India, specifically the Terrestrial TV broadcasting network that has remained under the exclusive domain of the public broadcaster – Prasar Bharti. Globally, the transition from analogue to digital terrestrial TV is considered a natural evolution for the broadcasting industry. While the adoption of digital broadcasting has been led by cable, satellite and to some extent IPTV, it is the transition of the terrestrial broadcast platform that arguably would bring in the most benefits to society and on which large numbers watch terrestrial content. This is true for countries (like India) where the size of the terrestrial platform is large and terrestrial TV is the primary mode of TV reception for most households, especially in far flung and rural areas.

As accurately opined by the Authority in this consultation, Digitization of terrestrial broadcasting has become a necessity to meet demand for good quality multiple services and to avoid continuance of the obsolete analogue infrastructure as it will soon become unviable to sustain analogue broadcasting operations. With the advent of digital media and alternate digital content distribution platforms, DTT can also act as a platform for digital/video content production and distribution so as to reach larger audiences and give consumers a better and adaptive viewing experience.

Despite the presence of multiple broadcasting distribution platforms, the need for Digital Terrestrial Transmission (**DTT**) will certainly add a new dimension to the distribution of television content. Existing distribution platforms may have some limitations to reach those far flung areas due to cost, technology & terrain reasons. DTT can help reach those areas with better quality content and options. It will solve some of the last mile connectivity and bandwidth problems by delivering much better quality video, more number of channels and without the current levels of compression and quality degradation. We are also of the opinion that DTT can bring down the entry cost for newer consumers especially for FTA television channels. DTT can also make available higher quality live television content on mobile devices whose numbers are constantly increasing. This will enable easier infotainment dissemination to existing and new audiences. We also believe that a robust DTT platform with lower entry costs for broadcasters and consumers will enable the Government to meet many of its educational & public awareness initiatives in areas where other mediums are yet to penetrate, or have certain limitations/or are not that effective or are beyond the financial reach of potential audiences. Also, introduction of a national level digital content distribution platform will provide an alternate to existing platforms, which in some areas is still operating in an unorganised manner.

Q. 2 If yes, what should be the appropriate strategy for DTT implementation across the country? Please provide your comments with justification.

DTT should be implemented in a phased manner with a clear cut sunset date to switch off analogue services as has been done with the various phases of cable TV digitisation. As DD (Prasar Bharti) is the only user of the current terrestrial network and as there is no encryption on any of the current terrestrial television channels, the process of switchover to DTT is limited to changes to those channels and their broadcasters only.

A phased approach of upgrading from analogue to DTT either region/state wise, based on consumer preference and consumption data can be implemented.

Making the DTT network available to private broadcasters for use for television and radio transmission will make a new distribution model available. As stated earlier, this, if implemented thoroughly, will benefit the complete ecosystem by drawing in new consumers and making infotainment available at low entry costs. This will result in substantial growth for the Media Industry and all its stakeholders.

It is important to ensure that the new DTT platform is capable of encryption with support for subscriber management practices compatible with existing platforms in the television industry so as to deliver Pay TV Content, on-demand content to discerning consumers as also to enhance revenue streams of broadcasters thus enabling a virtuous cycle of content consumption, creation and distribution. Stakeholders who bring in content on the DTT platform must be able to track viewership and consumption patterns so as to understand the changing needs of consumers and also to calculate the economic value the platform brings to their business.

Private participation along with Government partnership will help provide new edge content to various subscribers through DTT in these areas. To this end a robust technology solution to create a Customer data base, encryption, option of billing certain pay services and option for promotion of certain content/government agenda should be available. Encryption will help in the utilization of products and hardware manufactured in India and hence boosts growth of the hardware industry as well.

Private participation in Terrestrial TV Broadcasting:

Q.3 Should digital terrestrial television broadcasting be opened for participation by the private players? Please provide your comments with justification.

Yes, we are of the strong belief that opening up of the terrestrial transmission services in India to private participation, specifically in the wake of digitization of terrestrial TV broadcasting as is being contemplated is absolutely necessary.

As stated earlier, given the expected lower entry costs of DTT as opposed to other media available today to consumers, coupled with the promise of better quality content delivered live to various devices including hand-held devices like mobile phones and tablets, opening up DTT to private players, will only enhance the volume and quality of content available.

Some of the arguments that support this contention are:

1. Prasar Bharti has been the exclusive and only player in terrestrial transmission services in the country. No industry or medium must be allowed to be monopolized by a single party or entity such as Doordarshan and alternative choice of services must be made available to consumers.

2. Digitization of terrestrial services will require huge investments and funding, in addition to robust policy framework and a definitive road map for implementation. As such, entry of private players in DTT will enhance the flow of funds into the industry enabling better implementation strategies and importantly better quality of services and infrastructure.

3. In case FTA DTT services are provided, consumers need not bear the burden of paying any subscription fees to avail the services. This proposition can be made viable when there are innovative models brought in by private players and hence a value proposition for all stakeholders.

4. DTT will reach areas where Cable and Satellite penetration is poor and thus allow far better coverage and access.

5. DTT will allow service providers to produce local and diverse content thereby satisfying the needs of consumers in a given geography and increase meaningful content based on popular culture, local customs and demand.

6. With the advent of digital media and alternate digital content distribution platforms, private participation in DTT services can bring in the required know-how and technology that will enable digital/video content production and distribution so as to give consumers a better and adaptive viewing experience.

7. In a fast technology convergent environment today, DTT can (along with telecom operators) offer an array of services to consumers such as mobile TV, radio channels, interactive services, etc., which the telecom networks find a challenge to provide due to band with issues.

8. Opening up the terrestrial transmission domain to private players will help telecom operators to also benefit from the enhanced options of content delivery through the DTT platform, with effective utilization of existing infrastructure, thereby brining down costs.

9. Private participation will bring in expertise in content creation and supply on the DTT platform, as has been the case in other sectors where private players have been permitted.

10. Benefits will accrue to all stakeholders i.e. throughout the value chain.

The world over, private players have already been part of terrestrial platforms, unlike India. The inherent benefits of better quality, competitiveness, variety and value added propositions to consumers, innovation, alternative business models for stakeholders, etc., that accrue on allowing private players in this domain far override any concerns or inhibitions that may arise in the minds of the policy makers.

Models for DTT implementation:

Q.4 Which model or a combination thereof for Digital terrestrial transmission will be most suitable in Indian context? Please furnish your comments with justification.

In our opinion, the '**Transmission Network Model'** as detailed by the Authority in this consultation is likely to be the most suitable option for India, in the current scenario. This will require a strong operating framework within which DTT network operators and DTT service providers will work together but in their respective assigned roles to provide value services to consumers. We agree with the several benefits of such a model, the most significant being the optimum use of existing infrastructure and the possibility of providing an integrated platform for telecom and terrestrial services.

The Government must draw up standards for operators who set up the infrastructure as well as for service providers who utilise the DTT platform to provide services. A nodal agency like Prasar Bharti or some other competent authority can set QoS standards, monitor and enforce them. This will ensure that there is incentive for private players to utilise the infrastructure and to contribute to its enhancement and upkeep within parameters specified by the nodal agency.

We recommend that if this model is considered for implementation, a formal committee consisting of Government as well as private sector representatives must address ways to bring in the best infrastructure and technology solutions to address any challenges and thereafter make investment decisions.

As DTT is a new technology/infrastructure initiative by the Government, it will be effectively supported and supplemented by private players in servicing/providing alternate content and also resulting in cost sharing. A robust policy framework should be defined to protect the interests of all stakeholders to ensure that small content innovators and creators are not denied access to this platform by bigger entities who have the ability and resources to consolidate and invest larger sums in to this domain.

Spectrum for DTT services:

Q.5 What should be the approach for implementing DTT network (MFN/SFN/Hybrid)? Please furnish your comments with justification.

Multi Frequency Network (**MFN**), in our view, is the simplest method of setting up DTT transmitters. While both MFN and Single Frequency Network (**SFN**) architecture can be utilized in DTT network, we believe that the MFN approach allows for the best platform given its simplicity in which a single frequency channel is used at one location.

In addition, if there is consensus and a decision is arrived at, that the core DTT infrastructure will be owned, setup and operated by a competent authority or an arm of the Government, it will be easier to ensure that only one transmitter is used in one area. The requirement of a higher number of frequency channels to cover large areas is offset by the ability to address local populations more effectively as opposed to the SFN architecture.

However, a hybrid network may be suitable in large areas with consumer of similar demographics. In such areas, SFN transmitters can feed off the hybrid network.

In our opinion, India is a country of diversity and as such it is difficult to pin down large areas with populations addressable as single demographic units with respect to infotainment content dissemination.

Q.6 What should be the criteria for arriving at optimum size of DTT multiplex at any location? Please furnish your comments with justification.

Q.7 How many digital multiplex per DTT operator should be planned for metro, major cities, urban and rural areas and why? Please furnish your comments with justification.

Q.8 What should be most appropriate frequency band as per National Frequency Allocation Plan 2011 for implementation of Digital terrestrial transmission including mobile TV? Give your comments with justification.

Q.9 Should spectrum be exclusively earmarked for roll out of DTT services? If so, what should be the quantum considering the broadcasting sector requirement in totality?

Answers to Q6 to Q9 would depend on several factors such as the number of broadcasters, number and type of channels that are to be made available through the DTT network. Also important are the demographics of the area in question, population, size, the pattern of consumption of TV content, etc, that need to be reviewed to arrive at estimates of how many digital multiplexes per DTT operator would be required. There should also be an optimum mix of services that are being offered at a location to get value out of the DTT platform.

It may become the case that during the transition to digital, the existing analogue services may have to be continued, till such time the DTT is fully implemented. If the decision to continue analogue services in parallel is taken as part of the digitization road map, it would mean that additional spectrum is to be set aside to facilitate carrying of both services, even if for a specific intervening duration.

As spectrum is a scarce resource, it is advisable that specific ear marked spectrum be allocated for the roll out of DTT services, keeping in mind future expansion possibilities. In addition to such allocation, the Government may also consider re-using the spectrum that gets released once analogue services are discontinued, subject to the same being of same or comparable quality required for DTT. To be able to envisage such allocation it is imperative to first have a broad understanding of the technology & Standards to be used, scope of coverage for DTT services, etc.

Road map for digitization of Terrestrial TV Broadcasting:

Q.10 What should be the roadmap for digitization of terrestrial TV network in the country? Please provide your comments with justification.

Q.11 What should be the Analog Switch off date(s) for the terrestrial TV channels in context with the suggested roadmap for DTT implementation? Please provide your comments with justification.

It is critical to have a well planned road map with timelines for DTT migration of existing terrestrial networks in India. Many countries have already fixed an analogue 'switch-off' date to completely discontinue analogue transmission. As mentioned above, we believe that a single cut-off date per region as was implemented for digitization of Cable Television may work best for conversion from analogue to DTT. However, this will involve a certain amount of co-existence of analogue and DTT networks and therefore continuing costs and need for additional spectrum.

The policy for DTT must address issues of spectrum allocation, funding for infrastructure set up, value proposition for all stakeholders, a sunset date for complete analogue switch off. In the absence of these factors, Doordarshan's plans to complete digitization by 2017 look over optimistic.

While drawing up a policy frame work for DTT and a road map for its implementation, examples can be drawn from countries that have successfully migrated or are in the process of doing so, to DTT, such as **Hong Kong**:

[1] The Government of Hong Kong announced in July 2004, the implementation framework for digital terrestrial TV (DTT). The terrestrial TV broadcasters in HK launched DTT on 31 December 2007. The current coverage reaches 99% of the population across the 18 HK districts. Subject to a review in 2017-18, the HK Government aims to switch off analogue broadcasting in 2020.

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[2]**Phase-wise transition to DTT**: Below is an illustrative table showing possible phase wise activities in the transition process of digital TV that can be reviewed and used as reference for DTT transition in India:

[1] http://www.digitaltv.gov.hk/general/
[2] GSMA Report dated January 2014 by Plum Consulting UK

Phases	Key Activities	Stakeholders involved
Phase 0: Pre-switchover planning	▪ Decisions on overall policy and digital strategy ▪ Establishing the licensing and regulatory framework. ▪ Policy and process for allocation of subsidy. ▪ Frequency planning. ▪ Planning and implementation of transmission and receiver standards.	Government, Regulators
Phase I: Switch-on	▪ Network planning, set up, and testing (in specific areas) ▪ Manufacturing of transmitters/receivers	Industry
	▪ Network deployment and introduction of DTT Services	Network Operators, Broadcasters
	▪ Marketing and communications campaign ▪ Provision of subsidies and consumer support services	Government, Industry
	▪ Adoption of DTT services	Consumers
Phase II: Switchover	▪ Marketing and communications campaign ▪ Provision of subsidies and consumer support services	Government, Industry
	▪ Adoption of DTT services	Consumers
Phase III: Analogue switch-off	▪ Complete network deployment and achieve coverage objectives ▪ Network monitoring	Network operators, Broadcasters, Regulators
	▪ Switch-off of analogue TV	Broadcasters
	▪ Restacking of frequencies to free up digital dividend	Government, Industry
	▪ Retuning of TVs or STBs	Consumers

Phase-wise transition to DTT in Indian context:

While the above table can be used as a broad reference to draw out the phase wise DTT layout, it is important that certain pre-switch over planning is undertaken, as far as the Indian DTT environment is concerned. These could include:

- Sharing of estimates of current analogue subscribers on DD;
- Understand DTT/Infra requirements;
- Evaluate if Digital transmitters of DD can be used;
- Stakeholder's participation;
- Revenue-cost sharing models;
- Formation of a committee with Private participation.

To be able to look at an analogue switch off date in 2020 as DD has envisaged, India must first come up with an implementation policy for DTT. Despite having initiated this process in 2000, DD could not develop the eco-system or capitalize on the early opportunity to migrate to digital terrestrial transmission, despite early steps taken to install digital transmitters in the four metro cities. Out of the 630 digital transmitters intended to be installed, only 23 have been deployed so far. The absence of private players has also influenced this slow progress in DTT migration.

It is therefore recommended that the Government lead this process and allow private participation as part of its DTT policy, arrive at a plan for optimum use and allocation of spectrum, encourage funding and investment for DTT space and draft a roll out map for DTT migration. To conclude:

- Government intervention and management is required to drive the digital switchover process.
- A market-led approach alone is unlikely to meet universal coverage and timeframe objectives for switch-off.
- Sufficient, safeguarded funding provides the foundation for long term planning and facilitates a smooth transition.
- An adequate simulcast period is necessary to facilitate DTT take-up and minimise consumer disruption at analogue switch-off. This also provides time for regulators and industry to address coverage and content-related issues.
- Consumer awareness, affordability of set-top boxes, broadcasters' costs and the future of local TV could all cause delays and resolving them early requires engagement of all stakeholders.
- Access to skilled resources and creating the environment for knowledge transfer are also key enablers, especially for developing markets and again government plays a key role in enabling these aspects.

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