Submission to: Dr. J.S. SARMA
Chairman, Telecom Regulatory Authority of India

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BIOGRAPHY FOR CHARLES (CHUCK) CARROLL

Chuck began his career in Tele-communications in the mid-1980's with the Bell Operating company US West. In 1989, he moved to US West International, and started a span of 14+ years in Executive Management and Operations associated with start-up, build, and operations in the International Broadband and Cable Industry. He has served as CTO in Germany (ish), both COO and CEO of Telenet Operations in Belgium, in Japan as CTO of TITUS in it's start-up, as well as Senior VP Engineering for Telewest in the UK during it's start-up period. Since 2003, Chuck has run his own Consulting Business, ECBS Consulting LLC, providing consulting services for the international cable industry. With-in ECBS Consulting, Chuck has served on the Board of Directors of three companies, as well as worked for a variety of clients. This has included roles as the Managing Director for the start-up of Cable Europe Labs, the role of Partner and CTO for Cable Partners Europe LLC, as well as the role of Director of Technology and Strategy for Coppervale Enterprises.

Chuck is American by nationality, and holds a B.Sc in Electrical Engineering, from Washington State University in the United States. He is a Fellow of the U.K. SCTE, member of the U.S SCTE, and has published a number of papers on the development of Cable/telephony in journals around the World.

Issues Related to implementation of Digital Addressable Cable Systems in India (DAS)
COMMENTS TO TRAI's CONSULTATION PAPER DATED DECEMBER 22, 2011.

Basic Service Tier for the Digital Addressable Cable TV Systems

1. ***What should be the minimum number of free-to-air (FTA) channels that a cable operator should offer in the basic-service-tier (BST)? Should this number be different for different states, cities, towns or areas of the country? If so, what should be the number and criteria for determination of the same?***

- **Minimum of 30 FTA channels including 8 state-owned Doordarshan channels can be part of the basic tier. This is consistent with regulations laid out in CAS 2006, as well working proactive in several foreign jurisdictions including the United States**
- **The minimum number of BST channels should be the same around the country though operators should be free to add local and local language content to the BST**

be?

- **MSOs, in consultation with the LCOs, should decide what the mix of channels should be in the basic tier, based on local demand, competitive and pricing factors**

3. What should be the price of BST? Should this price be different for different states, cities, towns or areas of the country? If so, what should be the price and criteria for determination of the same?

- **The price of Basic Service Tier (BST) should be at a maximum of Rs. 150 and a minimum of Rs, 100 plus applicable taxes across the entire country and across all delivery platforms including cable, satellite and wireless. The pricing should reflect the fact that significant capital expenditures need to be undertaken to digitize the plant and provide for set top boxes. Further, any upgrade to broadband of the cable network must be initially supported by cash flows from video for network plant upgrades, while broadband subscriptions can finance subscriber equipment like modems. The high fixed cost nature of plant upgrade expenditure does not support linking the cost of supply of channels to the number of basic tier channels to be offered. Even if only one basic tier digital channel is offered, the cost of upgrade is still largely the same.**

4. ***What should be a-la-carte rate of channels that form part of BST? Should there be a linkage between a-la-carte rate of channels in the BST to the BST price or average price of a channel in the BST? If so, what should be the linkage and why?***

- **BST feature cannot technologically or commercially support a la carte channel offering; the same basic tier package is delivered to all subscribers within a cable system as each subscriber in the system opted for it as a feature set**
- **There cannot be an a la carte basis for the BST service for reasons described above**

Retail Tariff for the Digital Addressable Cable TV Systems

5. ***. Should the retail tariff be determined by TRAI or left to the market forces? If it is to be determined by TRAI, how should it be determined?***

- **Cable-based distribution by its very nature requires large scale for capital and cost efficiency.**
- **Scale is needed to spread the significant overhead costs of the business across a large number of subscribers, to make it marginally low on a per sub basis over time.**
- **Scale also allows for the operator to negotiate with network equipment and labor providers to keep capital costs reasonable as they work to add the necessary elements needed to provide broadband and triple-play services in the future**

money for this work, with very little and/or limited amount of money coming back into those businesses

- During this time of significant investment, the one service operators have that is bringing revenue into their business is the video service.
- To that end, it is important that for the video business, during this critical time of investment, that operators not be exposed to any excesses by players in the market, but that "fair, reasonable, and predictable" cost of product is available to keep end user pricing affordable for the market place.
- Therefore, the regulator should ensure that conditions are favorable for keeping market pricing to end users affordable, while at the same time, make it attractive for investors to invest the large amounts of capital required by cable for its development and upgrade to two-way broadband.
- As one of the larger expenses to a CATV operator is the cost paid for programming, I would suggest doing this by freezing maximum broadcaster tariffs per channel to Rs 5 per channel for five years.
- The choice of 5 years is a function of experience around the world. World-wide, it has been demonstrated that even very large cable systems cannot return cost of capital to investors without offering broadband services to their customers as the cost of broadcast video content tends to be very high relative to video ARPUs.
- As such, it is in the national interest to freeze broadcast tariffs to where they are for the next five years in order to develop India's cable industry to international standards for the benefit of customers
- Additionally, MSOs/LCOs must be free to negotiate the broadcaster wholesale content costs below the fixed maximum rate based on factors like volume of subscribers and demographics. Outside of the basic tier, MSOs/LCOs should be free to price channel packages based on market forces in each area to support prolonged capital investments.
- Fixing the maximum rate per channel that broadcasters can charge remedies an industry structure where the industry concentration of broadcasters is very high, whereas the cable industry is very fragmented. But, cable companies must be free to set retail rates.

a. ***Should the a-la-carte channel price at the retail be linked to its wholesale price? If yes, what should be the relation between the two prices and the rationale for the same?***

- No, let market forces determine retail prices, broadcasters and cable companies can negotiate actual wholesale rates among themselves based on market forces, subject to the fixed regulated maximum rates per channel that broadcasters can charge cable companies per channel considering the high industry concentration of broadcasters compared to the cable industry.

b. ***Should there be a common ceiling across all genres for the pay channels or different ceilings for different genres? What should be the ceilings in each case and the reasons thereof?***

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- **Price ceilings should only be for broadcasters, not for retail as in a. and b. above. It is not feasible to offer 600-700 FTA channels al la carte, though some popular and niche channels with sufficient subscription volumes may be offered a la carte The decision to do that, though, should be left to the operators based on customer demand and their own business needs**

d. <u>Any other method you may like to suggest?</u>

<u>Interconnection in the Digital Addressable Cable TV Systems</u>

6 ***<u>Does any of the existing clauses of the Interconnection Regulations require modifications? If so, please mention the same with appropriate reasoning?</u>***

- **The CAS interconnection regulation per para 5.1 and 5.2 should continue unaltered for the period of the DAS notification until December 31, 2014 or later as extended by Government.**

7 ***<u>Should the subscription revenue share between the MSO and LCO be determined by TRAI or should it be left to the negotiations between the two?</u>***

  - **This is should be left to market forces after strengthening and enforcing transparency, and full financial disclosure and reporting from LCOs per the Analog Cable Digitization act of 2011**

8 ***<u>If it is to be prescribed by TRAI what should be the revenue share? Should it be same for BST and rest of the offerings?</u>***

- **LCO/MSO share in the BST and for all other channel packages should be 70%, with the distribution of the revenue share between the LCO and MSO open for individual negotiation between MSOs and LCOs based on market forces. Broadcaster industry is significantly more concentrated than the cable industry and broadcasters benefit from both scale economies and unfair market power relative to cable companies. There are increased costs for MSOs, there is an increased cost due to encryption of even the FTA channels and increased digital channels. The entire cost of digitalization (like STB, SMS system, Call Centre) while it is claimed to being borne by the MSO, but it does not have to be the case if the MSOs and LCOs cooperate closely by creating an incentive for them to act as one integrated entity, as is the norm and best practice in global cable everywhere.**

revenue sharing between the two as it will be not attract much needed capital to upgrade the cable plant.

9 ***Should the 'must carry' provision be mandated for the MSOs, operating in the DAS areas?***

- **No, it increases capital expenditures and costs in areas not of interest to subscribers; must carry should be limited to the 8 doordarshan channels in the basic tier and the two parliament channels. This is largely consistent with how must carry regulations where they exist, are done in other countries**

10 ***In case the 'must carry' is mandated, what qualifying conditions should be attached when a broadcaster seeks access to the MSO network under the provision of 'must carry'?***

- **Must carry should not be mandated. Must carry for 8 DD channels is already in place**

11 ***In case the 'must carry' is mandated, what should be the manner in which an MSO should offer access of its network, for the carriage of TV channel, on non-discriminatory terms to the broadcasters?***

- **Must carry should not be mandated.**

12 ***Should the carriage fee be regulated for the digital addressable cable TV systems in India? If yes, how should it be regulated?***

- **No, carriage fee is related to advertising revenue that broadcasters receive, that can vary by subscriber volume ad demographics. Cable companies should be able to negotiate what the market can bear. This is consistent with international norm for this.**

13 ***Should the quantum of carriage fee be linked to some parameters? If so what are these parameters and how can they be linked to the carriage fee?***

- **Unless TRAI can regulate advertising fees (say for a 10 sec advertisement) that broadcasters charge advertisers, it should not regulate carriage fees**

14. ***Can a cap be placed on the quantum of carriage fee? If so, how should the cap be fixed?***

15 Should TRAI prescribe a standard interconnection agreement between service providers on similar lines as that for notified CAS areas with conditions as applicable for DAS areas? If yes, why?

- **TRAI should prescribe an interconnection requirement between service providers, not a standard agreement. If mutual negotiations fail in a defined period, the regulator should come up with an independent arbitration mechanism for the parties to reach agreement to ensure smoother and quicker implementation for the notification period.**

Quality of Service Standards for the Digital Addressable Cable TV System

16. Do you agree with the norms proposed for the Quality of Service and redressal of consumer grievances for the digital addressable cable TV systems? In case of disagreement, please give your proposed norms along with detailed justifications.

I agree with the proposed norms; and there should be no regulatory demarcation between an MSO and an LCO as it goes against the nature of efficient cable systems and best practice worldwide.

17. Please specify any other norms/parameters you may like to add with the requisite justifications and proposed benchmarks.

18. Who should (MSO/LCO) be responsible for ensuring the standards of quality of service provided to the consumers with respect to connection, disconnection, transfer, shifting, handling of complaints relating to no signal, set top box, billing etc. and redressal of consumer grievances?

- **All the above need to be analyzed and depending on the origin of the complaint will be handled by both MSO/LCO. As is the case in the telecoms world, when operators have different responsibilities associated with delivering a services to customers, generally they will analyze the chain of service delivery, and work amongst themselves to insure that processes between them deal quickly and efficiently with any issues that might develop. I would expect this type of analysis and agreement to be reached between MSO/LCO to make this happen**

19. Whether Billing to the subscribers should be done by LCO or should it be done by MSO? In either case, please elaborate how system would work.

- **Billing can be done by MSO or by the LCO, as both prepaid and post paid will be possible.**
- **Various methods of payment should be enabled - online, credit card, net banking, mobile payment, cash, in essence to make payment as easy and straightforward to customers as possible. This is consistent with industry practices in other countries.**

services to be offered to every subscriber as per the Governments vision for a National Broadband policy.

- **To the extent of postpaid, MSO or LCO will bill the customer but in a transparent billing system, that can include itemized billing. Itemized billing is a norm in the cable industry around the world**

20. Should pre-paid billing option be introduced in Digital Addressable Cable TV systems?

- **Yes**

Miscellaneous Issues Broadcasting of Advertisement free (ad-free) channels

21. Whether an ad-free channel is viable in the context of Indian television market?

22. Should there be a separate prescription in respect of tariff for ad-free channels at both the wholesale and retail level?

23. What should be the provisions in the interconnection regulations in respect of ad-free channels?

24. What should be the revenue sharing arrangement between the broadcasters and distributors in respect of ad-free channels?

Non addressable digital Set top boxes

25. In case you have any view or comment on the non-addressable STBs, you may please provide the same with details.

- **Non addressable STBs must continue at least for next 5 years or until total addressable digitalization has been implemented**

Reference point for wholesale price post DAS implementation

26. Would there be an impact on the wholesale channel rates after the sunset date i.e. 31st Dec 2014, when the non-addressable systems would cease to exist? If so, what would be the impact?

- **The reference point of analogue cable basis for wholesale price must be terminated. A free market situation with minimum regulations (like maximum cap to curb predatory pricing and event based obnoxious pricing by Broadcasters, as has become the case with three broadcast companies that also own DTH services).**

- **Cable-based distribution by its very nature requires large scale for capital and cost efficiency. Cost efficiency is required to keep pricing affordable for the market place. Therefore, the regulator should ensure that conditions are favorable for keeping market pricing affordable, while at the same time, make it attractive for investors to invest in cable for its development and upgrade to two-way broadband as well, by freezing maximum broadcaster tariffs per channel to Rs 5 per channel for five years. World-wide, it has been demonstrated that even very large cable systems cannot return cost of capital to investors without offering broadband services to their customers as the cost of broadcast video content tends to be very high relative to video ARPUs. It is in the national interest to freeze broadcast tariffs to where they are for the next five years in order to develop India's cable industry to international standards for the benefit of customers. In addition, MSOs/LCOs must be free to negotiate the broadcaster wholesale content costs below the fixed maximum rate based on factors like volume of subscribers and demographics. Outside of the basic tier, MSOs/LCOs should be free to price channel packages based on market forces in each area to support prolonged capital investments.**
- **Fixing the maximum rate per channel that broadcasters can charge remedies an industry structure where the industry concentration of broadcasters is very high, whereas the cable industry is very fragmented. But, cable companies must be free to set retail rates.**

Other Issues:

27.Any other relevant issue that you may like to raise or comment upon.

- **The regulator should keep in mind that India's cable industry is at a critical juncture in its evolution. The nature of India's population density and dense brick and mortar construction even in rural towns that create natural limitations for wireless, when combined with an aging frequently failing fixed line base of only 3% teledensity, means that cable is the only pipe available to deliver broadband and related services into the vast majority of Indian homes and the youthful population of 600 million. Cable needs to be a core part of India's infrastructure development agenda and policies must be supportive of needed large scale investment in the industry. It is suggested that TRAI follow an approach that has worked very well with the cable industry around the world:**

  (1) Where there is a monopoly situation (like among broadcasters today), regulator's role is to regulate access to that commodity appropriately

  (2) Where a market exists, the regulator's role is to insure the market is functioning correctly (like the need to promote strong cooperation and transparency between MSOs/LCOs and mandating a regulatory divide between them), and

over time, so that the conditions they invested under initially stay relatively intact over time. Additionally, 74% FDI, 10-year tax holiday, zero-customs and excise duty for digital video and broadband equipment for at least 5 years must be in-place to make foreign investment attractive in a sector that has been challenging to the Government of India to modernize to meet a core part of development objective and one that has been tainted due to a plethora allegation on telecom related scams.