A Comparative Study on Retail Business Processes of RailTel and BSNL in the Provisioning of FTTH Based Broadband Internet Services

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Introduction

- RailTel, a Govt. of India undertaking under Ministry of Railways, Govt. of India has now become a competitor to BSNL in broadband service provisioning.

- RailTel introduced their FTTH (Fibre To The Home) broadband services with the brand name RailWire.

- They have upgradable and high speed internet connectivity at all railway stations.

- They initiated a three tier business model to penetrate FTTH broadband connections in the country, including rural and remote villages.

Statement of the Problem

- The BSNL concentrates the provisioning of FTTH broadband services mainly in urban and semi-urban areas.

- BSNL experiences many operational bottlenecks in the development of FTTH access network.

- The pricing of BSNL FTTH services are comparatively high and the service delivery mechanism is not effective in the present competitive market.

- The RailTel business model is innovative and the service delivery and service assurance processes are seem to be more effective.

- In Kerala, there is ample chance that, BSNL fixed line broadband internet services may slowly be substituted by RailTel FTTH broadband internet services even at rural villages.

Scope of the study

- This research work is an attempt to study the retail business processes of RailTel and BSNL in the provisioning of FTTH based broadband internet services.

- The scope of the study is limited to identify, illustrate and compare the business processes, service delivery and service assurances of FTTH based broadband internet services of RailTel and BSNL in Kerala.

- The retail business model of RailTel in collaboration with local cable TV operators who established a fibre optic based access network for cable TV operations is selected for the comparative the study.

Objectives of the study

- To study the retail business model of RailTel FTTH broadband internet services.

- To compare and contrast the pricing of FTTH broadband internet services of RailTel and BSNL.

- To analyse the retail broadband business opportunity of BSNL in association with local cable TV operators and suggest a mutually beneficial retail business model.

Research Methodology

- Case study research method is adopted for the study.

- In Kerala, RailTel entered into work contract assistance with Local Cable TV Operators (LCO) for providing retail broadband services.

- The LCOs are the Access Network service Providers (ANP) of RailTel's FTTH broadband services.

- A case of one of the LCOs is carefully selected from a rural area of Trivandrum district for the study.
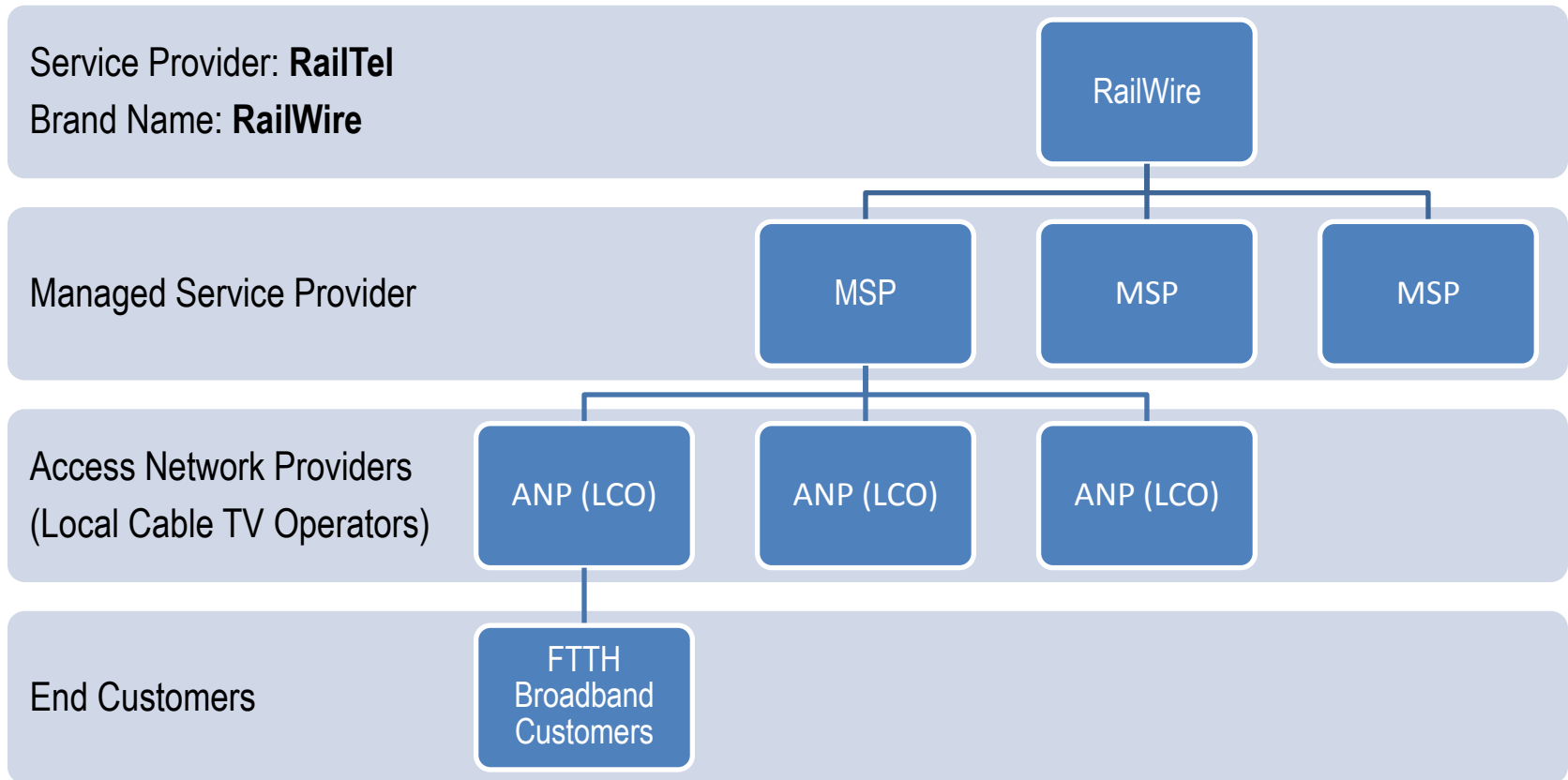
RailTel internet services

- RailTel Corporation of India Limited is a Public Sector Undertaking under Ministry of Railways, Govt. of India. Its registered office is at New Delhi. The company offers following telecom services.
  - Co-location Services under IP-1 License
  - Managed Lease Line & MPLS VPN under NLD License
  - Internet services under ISP-Class A License

Retail business model of RailTel FTTH

- The main entities in this collaborative business model are
  - RailWire
  - MSP(Managed Service Provider)
  - ANP(Access Network Provider)

Retail business model of RailTel FTTH

Service Provider: **RailTel**
Brand Name: **RailWire**

RailWire

Managed Service Provider

MSP

MSP

MSP

Access Network Providers
(Local Cable TV Operators)

ANP (LCO)

ANP (LCO)

ANP (LCO)

End Customers

FTTH
Broadband
Customers

Motive behind the selection of LCOs as ANPs

NETWORK DIAGRAM OF CABLE TV OPERATIONS
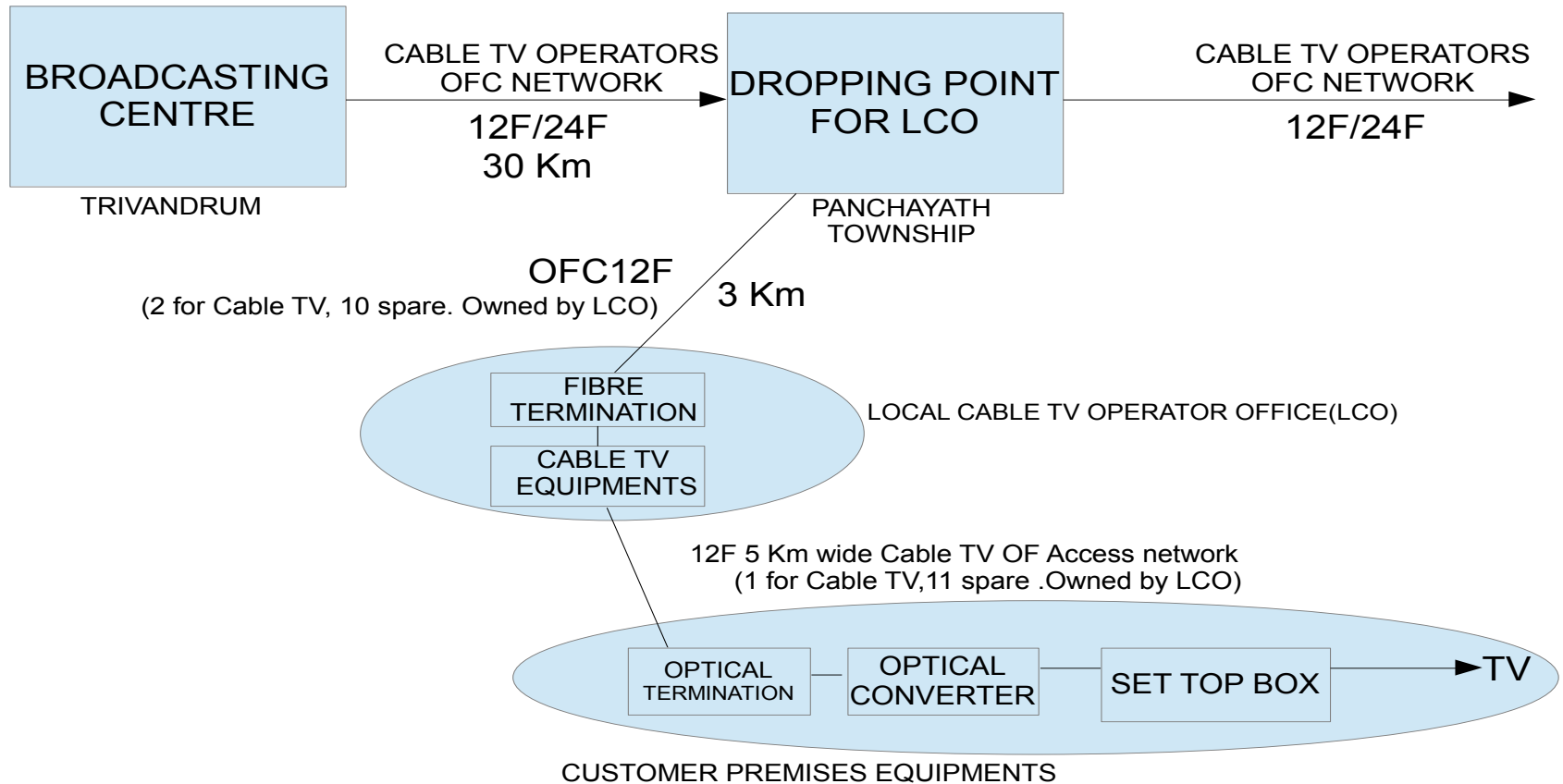
Network Diagram: RialTel - MSP – LCO-FTTH

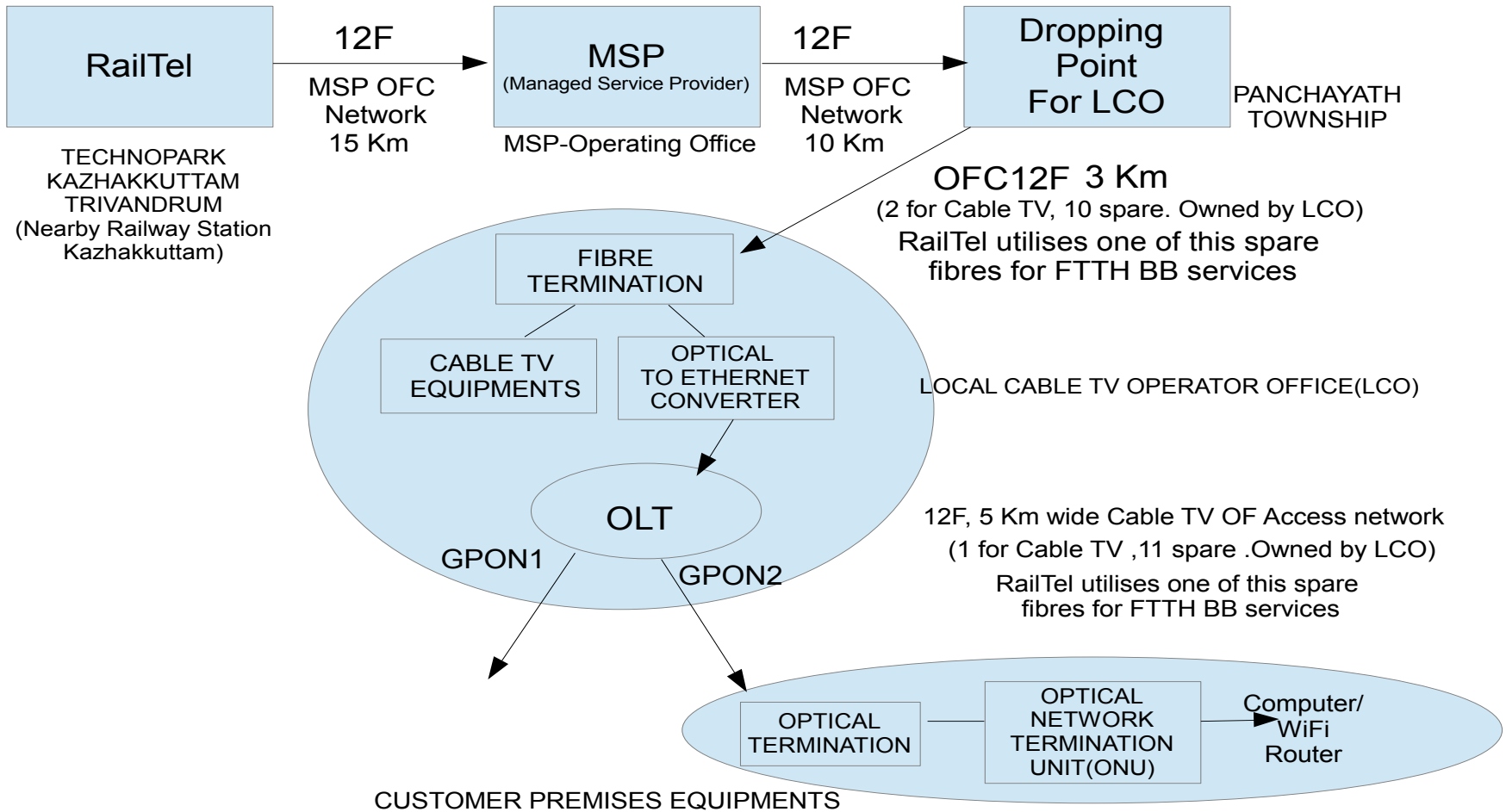NETWORK DIAGRAM
RailTel-MSP-LCO FTTH NETWORK

RailTel

TECHNOPARK
KAZHAKKUTTAM
TRIVANDRUM
(Nearby Railway Station
Kazhakkuttam)

12F
MSP OFC
Network
15 Km

MSP
(Managed Service Provider)

MSP-Operating Office

12F
MSP OFC
Network
10 Km

Dropping Point For LCO

PANCHAYATH TOWNSHIP

OFC12F 3 Km
(2 for Cable TV, 10 spare. Owned by LCO)
RailTel utilises one of this spare
fibres for FTTH BB services

FIBRE TERMINATION

CABLE TV EQUIPMENTS

OPTICAL TO ETHERNET CONVERTER

LOCAL CABLE TV OPERATOR OFFICE(LCO)

OLT

GPON1

GPON2

12F, 5 Km wide Cable TV OF Access network
(1 for Cable TV ,11 spare .Owned by LCO)
RailTel utilises one of this spare
fibres for FTTH BB services

OPTICAL TERMINATION

OPTICAL NETWORK TERMINATION UNIT(ONU)

Computer/ WiFi Router

CUSTOMER PREMISES EQUIPMENTS

Investment requirements of LCOs

Network entities	Additional requirements in FTTH BB network	Investment Requirements	Remarks
Optical Fibre Overhead cable network	Already available	--	--
Media Convertor (Optical to Ethernet)	One unit	Cost of one unit: Rs 750/-	Available in local electronic market / Fibre optic suppliers
OLT (Optical Line Terminal)	One unit	2 PON Port (Rs 50000/-) 4 PON Port (Rs 75000/-) 10 PON Port (Rs 100000/)-	50 to 60 FTTH BB connections, up to a span length of 20 km can be extended from one PON port.
90:10 Splitter	One unit per FTTH BB connection	Cost of one unit: (Rs 250/-)	Splitters are used to provide FTTH BB connections from the single fibre extended from the OLT PON port.

Investment requirements - CPEs

Customer Premises Equipments	Approximate cost	Remarks
Optical Fibre Termination box	Requirement: One Unit per customer. Unit cost: Rs 80/	The CPE cost is nearly Rs 2000/- RailTel permits the LCO to collect a maximum of Rs 3500/- as installation and CPE charges from the customers.
Patch Code	Requirement: One Unit per customer. Unit cost: Rs 120/	
GPON - ONU Gigabit-capable Passive Optical Networks - Optical Network Unit. (Single Ethernet output port)	Requirement: One Unit per customer. Unit cost: Rs 1800/	
WiFi Router	Requirement: One Unit per customer. Unit cost: Rs 750/	This unit is optional. If the customer requires WiFi connectivity or connectivity to multiple computers, this router has to be installed.

RailTel FTTH - Home Unlimited Plans

Sl. No.	Port Speed	Monthly Rental (Service tax extra)
1	512 Kbps	Rs 499
2	1 Mbps	Rs 899
3	2 Mbps	Rs 1399
4	4 Mbps	Rs 2499

RailTel FTTH – FUP (Fair Usage Plans)

Sl. No.	Port Speed	Data Usage	Speed After specified Data Usage	Monthly Rental (Service tax extra)	Remarks
1	1 Mbps	10 GB	512 Kbps	Rs 449	
2	1 Mbps	20 GB	512 Kbps	Rs 549	
3	2 Mbps	10 GB	512 Kbps	Rs 599	To continue browsing in actual port speed RailTel introduced two Top-up plans as Data Boosters. The pricing of top-up data boosters are (i) 5 GB for Rs 149 (ii) 10 GB for Rs 249
4	2 Mbps	20 GB	512 Kbps	Rs 699	
5	4 Mbps	30 GB	512 Kbps	Rs 799	
6	4 Mbps	40 GB	512 Kbps	Rs 899	
7	8 Mbps	40 GB	512 Kbps	Rs 999	
8	10 Mbps	40 GB	1 Mbps	Rs 1099	
9	10 Mbps	60 GB	1 Mbps	Rs 1249	

RailTel FTTH Broadband - SME Unlimited Plans

Sl. No.	Port Speed	Monthly Rental (Service tax extra)
1	1 Mbps	Rs 1699
2	2 Mbps	Rs 2999
3	4 Mbps	Rs 5799
4	8 Mbps	Rs 9999
5	10 Mbps	Rs 12999

SME Fair Usage Plans

Sl. No.	Port Speed	Data Usage	Speed After specified Data Usage	Monthly Rental (Service tax extra)
1	10 Mbps	60 GB	1 Mbps	Rs 4650

Comparison of Plans: BSNL Vs RailTel

Particulars	BSNL		RailTel	
	Business Terms	**Amount**	**Business Terms**	**Amount**
Initial Charges	Activation/Installation charges	Rs 500	Installation and activation. (Inclusive of ONU with One year warranty and Maintenance support)	Rs 3500
	ONT Security deposit (refundable)	Rs 1000		
	ONT Rent per month	Rs 150		
	ONT along with ADSL WiFi Modem: Rent per month	Rs 200		
	ONT purchase from BSNL with five years AMC	Rs 12000		

Comparison of Plans: BSNL Vs RailTel

| Particulars	BSNL		RailTel	
	Business Terms	**Amount**	**Business Terms**	**Amount**
Bandwidth (Download Speed Up to 2 Mbps)	**BBG UL 545** Up to 2 Mbps till 1 GB, 512 Kbps beyond	**Rs 545/per month**	**RailTel 449 plan** Up to 1 Mbps till 10 GB, 512 Kbps beyond	**Rs 449/per month**
	BBG Combo UL 675 Up to 2 Mbps till 1 GB, 512 Kbps beyond	**Rs 675/per month**	**RailTel 499 plan** 512 Kbps, Unlimited	**Rs 499/per month**
	BBG ULD 795 Up to 2 Mbps till 8 GB, 512 Kbps beyond 8 GB	**Rs 795/per month**	**RailTel 549 plan** Up to 1 Mbps till 20 GB, 512 Kbps beyond	**Rs 549/per month**
	BBG Combo ULD 845 Up to 2 Mbps till 6 GB, 512 Kbps beyond	**Rs 845/per month**	**RailTel 599 plan** Up to 2 Mbps till 10 GB, 512 Kbps beyond	**Rs 599/per month**
	BBG Combo ULD 945, Up to 2 Mbps till 8 GB, 512 Kbps beyond 8 GB	**Rs 945/per month**	**RailTel 699 plan** Up to 2 Mbps till 20 GB, 512 Kbps beyond	**Rs 699/per month**
	BBG Combo ULD 1445 Up to 2 Mbps till 20 GB, 1 Mbps beyond 20 GB	**Rs 1445/per month**	**RailTel 899 plan** 1 Mbps, Unlimited	**Rs 899/per month**
	BBG ULD 1491EA Up to 2 Mbps till 30 GB, 512 Kbps beyond 30 GB	**Rs 1491/per month**	**RailTel 1399 plan** 2 Mbps, Unlimited	**Rs 1399/per month**
	BBG Combo ULD 3500 Up to 2 Mbps till 150 GB, 512 Kbps beyond 150 GB	**Rs 795/per month**	**RailTel 1699 plan** 1 Mbps, Unlimited (Non-Domestic users)	**Rs 1699/per month**
			RailTel 2999 plan 2 Mbps, Unlimited (Non-Domestic users)	**Rs 2999/per month**

FTTH retail business processes: RailTel Vs BSNL

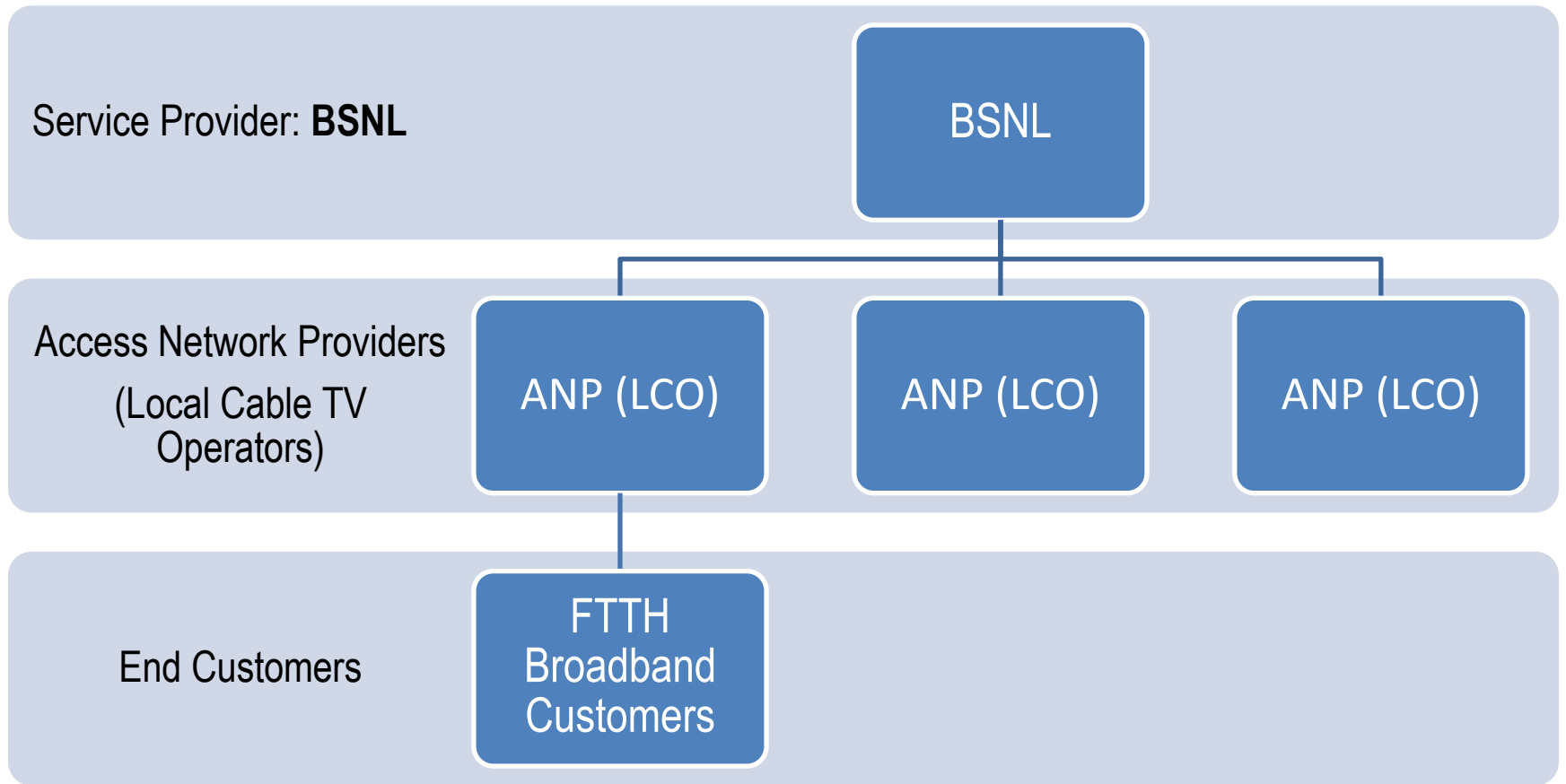| Particulars	BSNL	RailTel
Brand Value	High Brand value in telecom sector. High brand awareness among LCOs and general public.	A new entrant in the telecom retail business. Brand awareness is comparatively low.
Fibre Optic Network Availability	Available in almost all towns and Villages in India	Available only in Railway stations and Operating offices nearby railway routes
Development of Fibre Optic Access Network	Own arrangements. May not be effective	Utilisation of LCO's existing network through RailTel – MSP – ANP Retail Business Model.
Business Initiatives in FTTH Retail Broadband Services	Legacy Business Process	Innovative Business Model

FTTH 1 x N PON Splitting - Urban Area
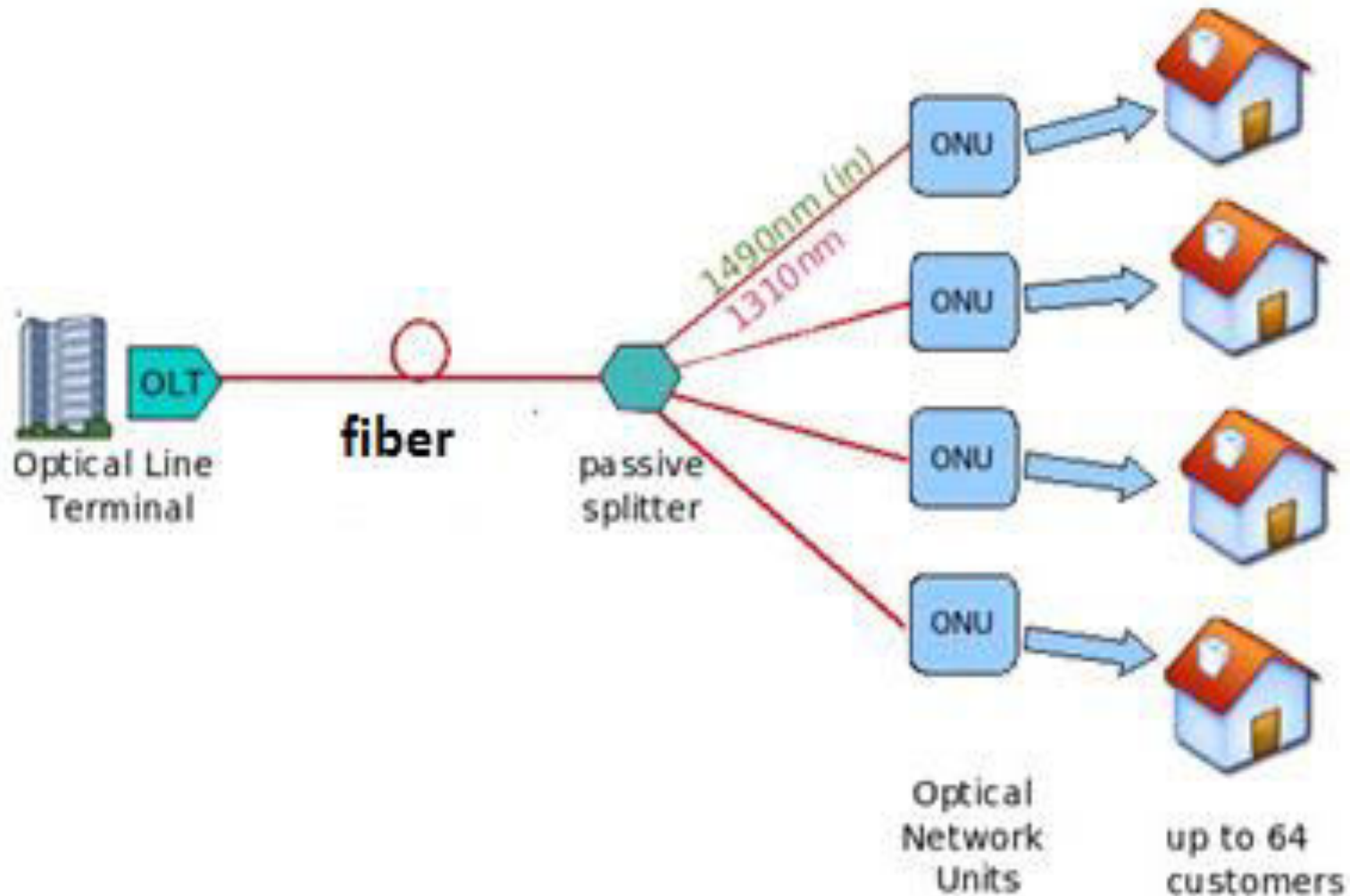
PON Splitting - Suitable for LCOs' OAN
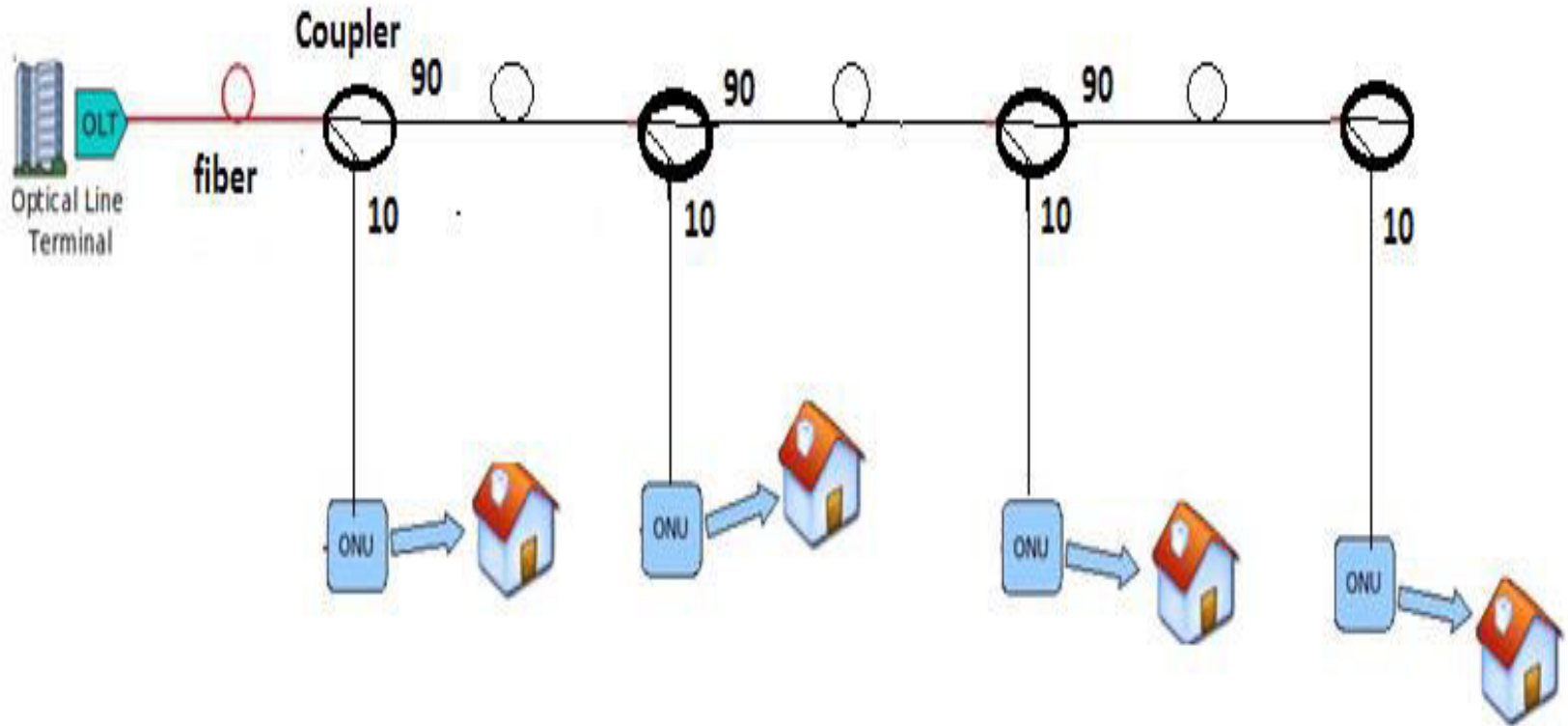
BB Services: DSL Vs Optic Fibre

Details	Broadband subscriber base in Lakhs			
	Dec. 2012	March 2013	Sept. 2014	June 2015
DSL	127.29	127.82	129.4	129.6
Optical Fibre	0.61	0.77	1.2	1.5

Suggested FTTH Retail Business Model for BSNL

Service Provider: **BSNL**

BSNL

Access Network Providers
(Local Cable TV Operators)

ANP (LCO)   ANP (LCO)   ANP (LCO)

End Customers

FTTH Broadband Customers

Suggestions

- The FTTH based broadband retail business of RailTel can be adaptable to BSNL with suitable modifications. Apart from the three tier business model of RailTel, a two tier business model is suggested for BSNL. In BSNL, it is easy to replace the MSP, the middle tier interface of RailTel, with BSNL telephone exchanges.

- The brand awareness of BSNL is very high among customers and Local Cable TV operators, BSNL can directly enter into a business contract with local cable TV operators and can utilise their fibre optic access networks in a cost effective way. BSNL can design and realise a win-win revenue share model with local cable TV operators, which can outperform the existing RailTel model, by utilising the brand image and network infrastructure of BSNL throughout the country.

- As the predicted TV subscriber base in India in the year 2018 is 165 million, a visionary business partnership with local cable TV operators will be a great opportunity for BSNL to extend fibre to the homes.

Conclusion

- In wired segment broadband, the main focus of BSNL is in copper cable based landline ADSL broadband services. In the legacy system of BSNL, it faces difficulty to develop its own FTTH access network. Therefore utilisation of existing fibre optic access network of local cable TV operators is a potential business opportunity to BSNL.

- The BSNL can directly enter into business contract with local cable TV operators and can utilise the immense potential of LCO's widely available spare fibre networks.

- A retail business model for FTTH broadband services similar to a three tier FTTH retail business model of RailTel is suggested for BSNL with suitable modifications.

- Developing a fine tuned broadband retail business model, incorporating LCOs in the last mile can contribute to digital India initiatives and reduce the digital divides in the country.

- This business model can change the BSNL broadband business profile and may lead to fibre to the home broadband revolution in India.

Thank You