



Virtual Network Operator (VNO) Model in India



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1. VNO Model -A Global Success

The MVNO (Mobile Virtual Network Operator) or Virtual Network Model is a Global Success and industry size is over **USD 91 Billion**. Indicatively, For every 7 Lakh population, one MVNO exists catering to one of the multiple segments such as IoT (Internet of Things) , Universal Service Obligation (USO) , Fintech , Retail, Utilities, Postal Services etc.. The same also reflects in the fact that all the major economies of the world Including France , Germany , Italy , Japan , UK , US , Australia and China have opted-in for this model and have a thriving MVNO ecosystem. . Further , there are multiple examples of Countries like South Africa who have mandated all operators to launch MVNOs to secure 5G license . However , India currently lags behind the Major economies in terms of the VNO proliferation .

Globally , MVNOs have been successful due to their impact in 5 Areas – *Affordability , Innovation , Disruption , Job Creation and Niche Segment propositions* . Multiple Examples of successful MVNOs exist globally that can be replicated in India . A few examples of such MVNOs are listed Below -

VNO Impact Area	Description	VNO Examples
Affordability	Reduced Cost for consumer Subsidy lifeline providers for United states USO fund	Truconnect, Yourtel, Assist wireless
Innovators,	M2M , IOT , Fintech , Edtech , circular economy	1NCE, Twilio, giffgaff
Disruptors	Better utilisation of national resources e.g., Infra, reducing Operator Monopoly, increasing competition, resulting in better tariffs	Circle's life, Rakuten Mint Mobile
Job Creators	Employment through MVNO Ecosystem, gig economy supporters	Virgin Mobile, Lyca Mobile, Lebara
Niche Segment specific MVNOs	E.g. Utility , Postal , Sports , Retail , IOT	Uber, FNB Connect, Walmart , Rabona Sports Club , Correios

MVNOs are highly beneficial for Telecom Operators due to focus on specific segments. Additionally , MVNOs help improving asset utilization of Telecom Infra thus helping in EBITDA improvement. Multiple such benefits of MVNOs have been explained further .

2. Why India needs MVNOs?

The VNO model is best suited for India because of the Large Subscriber base – India currently has 1/6th Of the world Population¹ . In terms of Mobile phones , there exist 110 phones per 100² people . Further , the Government of India , Department of Telecom (DOT) and Telecom regulatory authority of India (TRAI) have ensured favourable government regulations through NDCP 2012/2018 , UL-VNO licensing framework and TRAI recommendations and support on enabling and unbundling of Telecom services . This is evident in the existence of 60+ MVNO licensees currently . Moreover , India is fast becoming a Multi SIM market and there is a Growing Prevalence of more than 1 SIM per user (70 mn+) . With this fast advent of telecommunication services in India , there are however a few gaps and opportunities that need to be addressed –

- a. **Niche segments are unaddressed** – resulting in a huge Opportunity loss especially in catering to large private sector players , Government entities and Start-ups .
- b. **Financial woes of state owned operators** - State owned operators have lost out significantly in capturing this market , Further they are plagued with Low APRU and declining market share. There is a consistent decline in revenue from Operations . Piling Losses from high Operational costs (74%) and Delayed 4G/5G rollout are further damaging their sustenance. This is despite the fact that BSNL is uniquely positioned to launch MVNOs due to being a government owned entity and has massive unutilized infra in Tier2/3 cities and Rural India. This is where VNOs can help in better utilization of unused BSNL capacity, generate additional revenue with better ARPU thus improving profitability of BSNL.
- c. **Lack of technological innovation** – India has underdeveloped capability in terms of addressing Specific segments focused needs .Currently there is Limited Innovation in Telecom sector via public entities to cater to new segments – Mobile Money, Open RAN , Full stack Voice customer engagement , CPaaS, Dashboards , MVNE Wholesale Platforms and availability of Wholesale Billing platform. . For instance,

	BSNL (2006) ³	BSNL (Current)	Private (Current)
Market Share	22%	10%	90%
ARPU	118	53	136

¹ <https://www.worldometers.info/world-population/india-population/>

² https://en.wikipedia.org/wiki/List_of_countries_by_number_of_mobile_phones_in_use

³ <https://www.thehindu.com/data/data-how-bsnl-bleed-the-story-behind-public-telecom-giants-fall-in-6-charts/article65758495.ece>

even after the grant of UL-VNO licenses in 2017, The following were the **key components** that were missing in BSNL VNO Model that impacted the go live of VNOs –

- Wholesale Billing System (WBS) to implement STV model
- Mobile number Portability (MNP)
- Limited 4G coverage
- Incomplete Service stack (VOIP, API stack, Payments, URL level Filtering)
- Contracts not clear on Termination clauses and this impacts Service continuity

BSNL on its own will need significant time and investment to address above issues. A better strategy will be to work with a global VNO partner in a symbiotic way and leverage on each other's strength. For example, VNO can develop WBS, Services stacks and BSNL can develop 4G Coverage and help solve contract related issues.

- d. **Large unconnected base** – Currently There are limited specific incentives for connecting the Underserved rural and tribal segments in India. Even with more than 750 million connected people, nearly 50% of the country's population is yet to get online⁴. There is an urgency to bridge the digital divide as the digital ecosystem continues to become all-pervasive. A VNO focused on rural masses developed on BSNL network can reduce this increasing digital divide.
- e. **Lack of competition** – None of the operators are currently supporting VNO's despite DOT's UL-VNO Licensing guidelines issued in 2016 on recommendation on TRAI as per NDCP 2012. Operators maintain monopoly and treat VNOs as competition and do not provide network access and favorable pricing. Only BSNL Onboarded 2 VNOs (Surftel and Adpay) in 2017. On 27th October BSNL Disconnected both VNOs impacting 2 Lakh Subscribers /Customers without any notice or reason. Future of DOT's prescribed UL-VNO Policy for consumer Mobile was halted due to no Mandate to parent MNO/NSOs.
- f. **Need for a structured VNO Regulatory framework** - TRAI and DOT can re-examine the VNO guidelines and incentivize private operators for launching VNOs, for example – reduction of AGR could be a right step in this direction.

3. Advantages of MVNO Model in India

Below are a few advantages that the MVNO model can bring for Indian Telecom Ecosystem.

- 3.1 **Addressing a huge unaddressed opportunity** - The VNO model can be especially valuable for the Indian market for enhancing Mobile penetration and addressing Niche underserved segments. There are multiple pockets of opportunity that can be addressed as below –
 - a. **Large private sector companies and start Ups-**
 - i. As per VNOAI Estimates there are currently 580+ ISPs, 650+ IOT Companies, 455+ Activate State Universities, 7000+ Fintech that are a potential target segment for VNOs
 - ii. Further there are large enterprises (e.g. Infosys, DMART) and employers of Indian Origin who can leverage a branded SIM for their employees as well as customers
 - iii. Currently India is the Start-up capital of the world and multiple companies (e.g. BYJU's -11.5 Crore subscribers, OLA (1.5 MN delivery partners), Swiggy) can benefit from this model by offering Whitelabeled branded Mobile services. The VNO model can incentivise these high growth companies to choose a state owned operator.
 - b. **Large PSUs (Public Sector Undertakings) -**
 - i. Multiple government entities can launch their own branded services to cater to their large existing Subscriber base. This in turn results in a win-win for the Brand, NSO as well as the subscriber
 - ii. A few examples of such larges PSUs are – Indian Postal services and State Bank of India – which have a large employee base and a strong distribution network (Post office - 1.5 lakh post offices, SBI 2.45 Lakh employees). Organization like EPFO can launch a pensioner focussed VNO. Without investing in a large capex, this distribution can be leveraged to generate revenues by Providing Postal/banking Mobile services.

⁴ <https://www.lightreading.com/asia/india-to-use-us-of-to-provide-4g-coverage-in-7k-villages/d/d-id/773594>

c. *Carrier of Carriers -*

- i. Several opportunities exist within the Carrier of Carriers Segment – entities like Railtel , PGCIL , GAIL who can launch dedicated VNOs.
- ii. For example a VNO can help RailTel Create a White labelled Mobile Proposition (e.g. “Rail Mobile”) Including branded SIM cards , A White label App and Private network .Similar example can be replicated for airlines e.g. Air India as has been done in the case of Emirates airlines⁵ .

d. *Global MVNOs -*

- i. Global MVNOs will be willing to make FDI investments in India to expand reach of Mobile services thereby encouraging foreign Direct Investments in India and participation in India's growth story . A few examples of such potential MVNOs are – Lycamobile , Lebara mobile and Truphone .

3.2 Turnaround of state owned operator – before understanding how a VNO model can help turnaround state owned operator in India. we need to understand and clarify a few Myths that exist with regards to VNO model

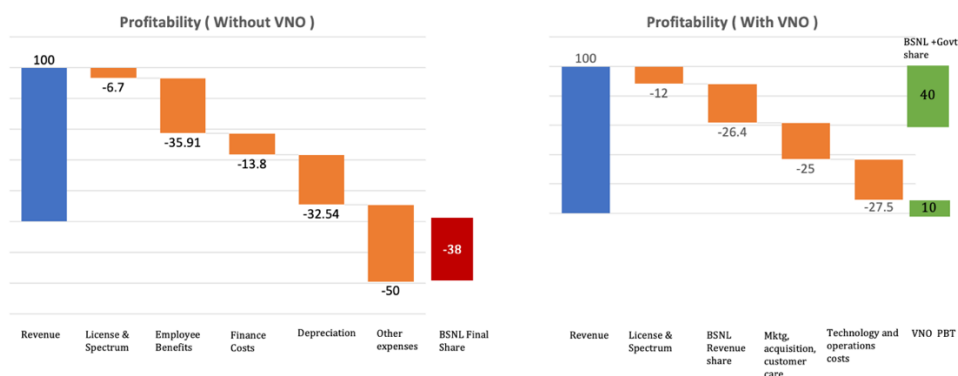
a) *Myth - #1 I - MVNO is a competitor and not a partner*

1. A key point to note is that a VNO is not a competitor because it helps the operator gain “net new” **market share** by
 - a. Deploying agile sales & marketing and operations workforce. Operator **need not deploy extra manpower** or extra infra to meet MVNO requirements.
 - b. Better utilisation of current infrastructure - Thus leads to better Return on Assets and will lead to **BSNL ARPU and EBITDA improvement** .
 - c. **Opening another revenue stream** through MVNOs to support 4G/5G objectives . BSNL can promote 5G focussed private network solutions (e.g. South Africa , South Korea)
2. By deploying a strong KYC/Deal registration model , rules of engagement can be established even at opportunity level so that VNO only addresses the approved opportunity as per mandate.
3. With the VNO model , the operator can themselves launch a sub brand thereby ensuring that churned customer still have an option to choose the Operator . For example by launching a Youth Centric Brand an Operator can establish connect with a targeted segment
4. Further a VNO model is B2B and not B2C and thus acts as a new wholesale revenue stream instead of competing at consumer level .

b) *Myth#2 – MVNO model Is not profitable .*

As per VNOAI exercise in mapping EBITDA impact of VNO model on existing profitability of BSNL , it was found that the VNO model offers as much as 40% Positive EBITDA contribution to the Indian government when compared to the direct retail model of BSNL which results in 38% loss without VNO. Through a VNO model BSNL saves additional employee , finance , and go to market costs (technology , sale and distribution , platform , operations etc.). These costs will be borne by the VNO partner on behalf of the operator, resulting in positive EBITDA for BSNL. The VNO model ensures that there is a share of revenue in the pipeline for the new opportunities an utilization of spare Infra. Therefore, from a profitability perspective , the VNO model is much better suited .

BSNL EBITDA Models (With and without VNO)



⁵ <https://newsreleases.com/2022/10/24/emirates-signs-agreement-to-include-flexiroam-as-an-in-flight-retail-product/>

c) *Myth #3 – VNO model is the same as Franchisee model*

There is significant difference between a Franchisee and VNOs . For example, a franchisee may or may not have national level presence that a VNO can bring . secondly a franchisee may not have experience of having launched segment specific MVNOs (e.g. Sports , Fintech , Utilities, Retail, IOT/M2M) thereby may not be able to successfully launch /integrate customers . further a franchisee may not have invested in setting up telecom infrastructure example PCRF , STP , LSA level integration . International Telecom companies wanting to setup telco services in India will work with a national VNO versus franchise partner.

3.3 **Technological innovation** - VNOs can quickly provide **Emerging technologies** (e.g. APIs, Value added services , IOT Platform , SuperApps) to brands. Custom Solution Development will be difficult from BSNL side.

3.4 **Connecting the unconnected** - further it can Access to Rural and Unconnected Population (USO Obligation) ; Supporting “Digital India” , NDCP 2012/ 2018 Vision and Mission . The VNO model can help Enhance Mobile Penetration to move from 1.1 X to 3X.

3.5 **Enhance competition** - Enhanced competition in Telecom will lead to affordability for Indian consumer

4. Mexico Model – A Case study

Mexico Case study

Mexico was facing a challenge to achieve effective competition in telecommunications service provision.

As of 2019 América Móvil had retained a 60% market share in the retail mobile market and more than 50 % in the fixed broadband market . Other service providers faced issues due to this monopoly. Additionally the market was facing challenges in terms of -

- Low consumer choice
- Poor quality of service and
- High Urban – Rural Divide

Mexican Government enacted the Constitutional Reform including wide-reaching changes to the Mexican telecom landscape. Altan Redes was established as a wholesale-only operator offering equal access to any MVNO , so as to establish effective retail competition

Mission – *To connect Mexicans by providing more coverage and offering better services*

Goals

- To bring internet to Tier 2 & 3 , rural population in 115 thousand localities.
- Coverage for localities of fewer than 5 thousand inhabitants

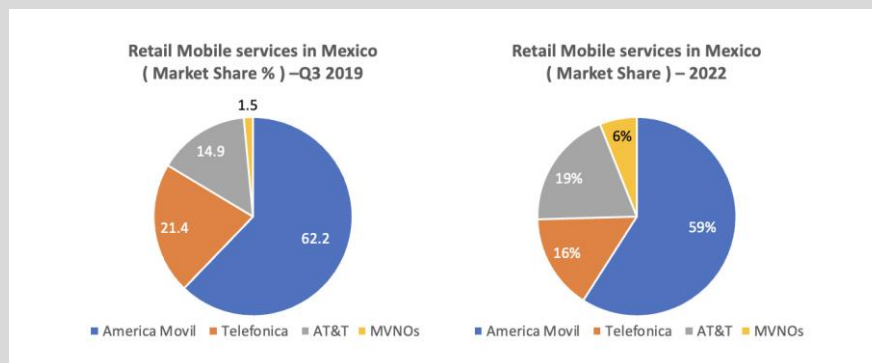
Altan Redes , structured as a public-private partnership (PPP), is the cornerstone of the Mexican Telecom Reform encouraging:

- Substantially increased 4G LTE wireless coverage, access and penetration
- Increased competition
- Strengthening of National telecom infrastructure
- Avoid monopolistic behaviour

In 2022 government entities took over Altan from Private Players

Impact –

- Altan Redes now offers mobile connectivity , Broadband services through Portable **MiFi** device
- Investment in Altan Redes is progressive as Differentiating factor is **Quality of service**
- This now covers **80 Million people** including rural Mexico and on track to cover 120 Million people by 2024
- **Currently Altan has 70 MVNOs** with market share increase from 1.5% in 2019 grown 4X to 6% in 2022
- **Brands can launch** MVNO with Altan even in **with a small budget** of USD 75K-100K against USD 3-4 Million in India
- **Walmart MVNO has 2 million subscribers** and adding 200 K subscribers every month.
- Telcel and other MNOs are now launching MVNOs



5. Recommendations for Successful implementation of VNO model

5.1 VNO Incentivisation -

- By creating a new wholesale-only model to enable a natural environment for infrastructure sharing
- Government bodies leverage MVNO Model to enhance revenue and brand loyalty
- Linking future spectrum allocation linked to MVNOs deployment , especially in Rural India – defined Objectives /obligations
- MVNOs model can be mandated for future Spectrum grants, similar to South Africa.

5.2 Strong regulatory framework –

- The first step is to reverse the recent arbitrary non-renewal of VNO Empanelment . It took 5 years to bring VNO infrastructure to the stage when MVNOs can be launched on the BSNL Network . Cancellation of the empanelment agreement by BSNL is a huge set back to the Vision of the Govt of India to provide competitive prices to the consumers in the current Duopoly market in India. Practically there are two operators and consumers are at the mercy of the two operators and niche and rural segments of the country are not being addressed

.Ref to the UL-VNO licensing guidelines as recommended by TRAI regarding Enabling and Unbundling of Telecom services needs to be reviewed in entirety and suitable amendments in the proposed telecom draft Bill 2022 may be done .

5.3 MVNO as a “Partner” of Operators for the service delivery –

- Based on global trends , MVNOs could be a possible source for BSNL to come out of losses and gain market share. DOT can mandate BSNL to work as wholesale B2B operator to offer WIN – WIN solution for Industry and Public at large
- Private Operators should not treat MVNOs as competitors as MVNOs address the niche and Rural segments of the country.
- DOT may direct Private Operators to support MVNO’s to achieve Mobility and rural broadband targets and enhance Competition to avoid monopolies.
- Without provision of the access to the network of the NSOs/MNOs the UL-VNO license for the Access services in mobile services is not possible.

5.4 Technology Enablement (VNO Ecosystem) –

- Creation of A Shared VNO Network by BSNL like *Altan Redes in Mexico can develop several MVNOs in India*. As explained in detailed case study given in Section -4