

Sustainable Economic Model for Rural Broadband in India Public, Private, Panchayat Partnership (4 P model)

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One of the important factors that contributes to economic growth and development in rural areas is broadband connectivity or Internet. Several activities such as banking, e-Governance, e-Learning, tele-health services, activities to empower farmers with e-commerce can be promoted by enabling them digitally. The urban-rural digital divide has a very stark demand supply dynamics. Unlike the urban areas, where the Internet demand and supply is at tandem with each other, the rural areas have an indomitable imbalance. Taking Internet connectivity to the rural areas in India has been a tough task due to several challenges. There is a need for not only technology innovation but also affordability of Internet by the villagers and its sustainability at the village. In villages where connectivity has reached, maintaining and sustaining the network at the village is a major challenge.

Internet Service providers are unwilling to go to these areas as they are uncertain about the Return on Investment (RoI). Rural population due to lack of broadband connectivity, is digitally less aware about the advantages and utility of Internet. Without digital awareness, it is difficult for them to demand connectivity and at the same time use it effectively when enabled with such connectivity. This results in a deadlock kind of situation. Other key issues for barriers in connecting rural India are lack of fibre infrastructure, low average revenue per user, difficult terrain and scarcity of electricity. Thus, the rural connectivity solution in India is entrapped in a vicious cycle. Economic models such as partnership models and joint venture models like i) private only, ii) public only and iii) private, public partnership models have catered to maintaining sustainability of the network at the village. However, these have not been able to bear fruitful results due to reasons such as planning and maintenance delays, inadequate monitoring, funding gaps and improper management. The key feature that these models lacked was involvement of the local people for whom the network was set up and non-adherence to the regional needs.

We propose a sustainable economic model for rural broadband based on a Public, Private, Panchayat Partnership (4 P model). The model is currently being validated on field (Fig 1). This model can also be termed as 'Network of the people, by the people and for the people'. It is a viable model for both the end user as well as the investor as it works on revenue generation and sharing. The 4 P model has evolved through a need based study of Internet in villages and Internet's impact on the lives of people in such villages. The impact studies have revealed the need for community owned networks. Our studies indicate that a

community owned network will enable villagers to 'own Internet'. The objective for developing the 4 P model is two-fold in nature. The first is to ensure that the network is locally owned by the Panchayat and secondly, there is a sustainable Return-on-Investment for the service provider while offering an affordable subscription price for the end user. Panchayat being the local self government takes ownership of the network enabling the network to be community owned. Community ownership of the network can influence effective decision making and prioritising services based on the village needs.

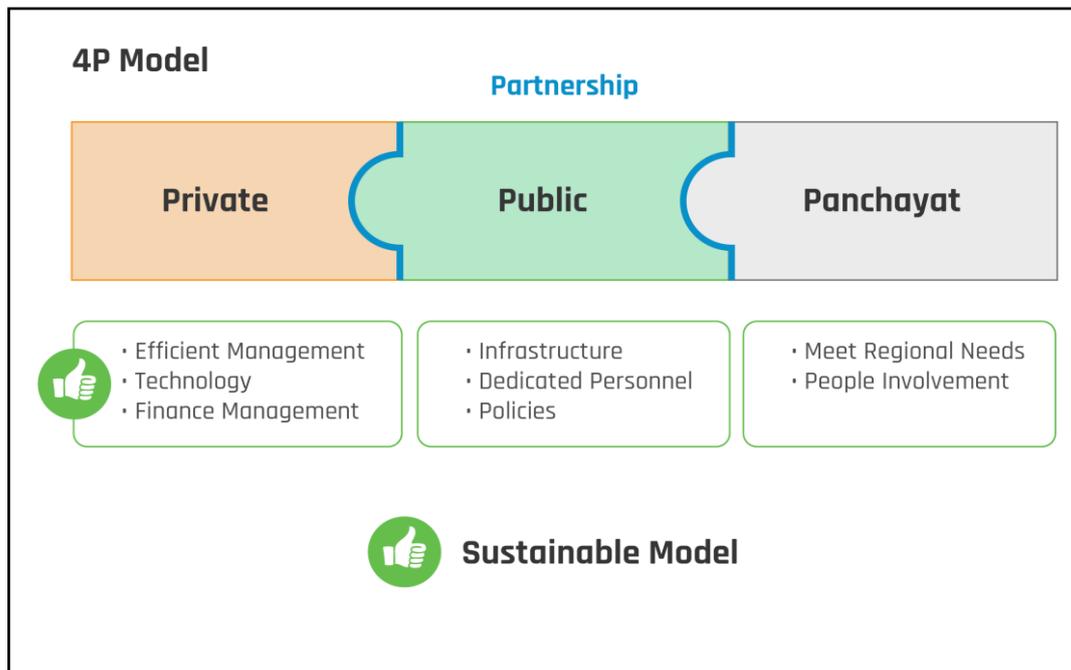


Figure 1: The Public, Private, Panchayat Partnership model (4 P model)

The 'Private' in our model is the private broadband service provider and the 'Public' is the government-owned organisation which provides the infrastructure. The public-private partnership enables Internet connectivity to reach the village, from where it is taken over by the Panchayat. The investment for the network is done by the Panchayat at the village level. Local youth in the village known as Village Level Entrepreneur (VLE) invests and maintains the network as well as generates revenue by selling bandwidth to the villagers. The involvement of Village Level Entrepreneur (VLE) plays a key role in taking the services to the end-users and in turn generates employability for himself/herself, thus making the model sustainable.

As broadband subscribers are expected to increase in the future, the model takes into account year wise growth rate of subscribers, expected growth in Internet demand, year wise increase in per month cost of Internet usage. The model assumes that bandwidth will be taken in multiples of 10 Mbps i.e. 10, 20, 30 Mbps and the bandwidth cost will be according to the number of subscribers. The current model is based on the actual expenditure on ground. Given the CAPEX and OPEX investment, we observe that the model will be sustainable as there will be a steady RoI over a long period (Fig 2). A steady RoI

suggests that the model will perform good on field and is also a lucrative value for the investment made. We also observe that there will be a steady profit incurred year after year in addition to making sure that the subscribers pay a reasonable price for the Internet usage.

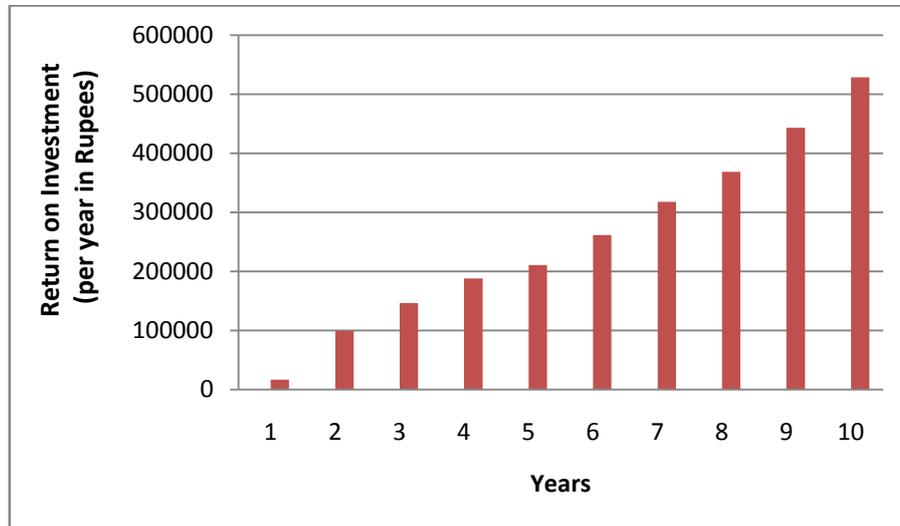


Figure 2: Year wise Return on Investment

This sustainable economic model can be the foundation for making rural broadband to be financially self dependent at the village. As the model focuses on broadband usage, supply and demand, it can effectively formulate cost effectiveness of technologies used. Unless such a self sustainable model is implemented, it will be difficult for Internet to penetrate rural areas.