

Gram Marg Solution for Rural Broadband



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Current Scenario

4 billion people unconnected globally
800 million in **640,000** villages unconnected in India





TV White Space as a Solution

TV White Space is the unutilized part of the spectrum in the TV band

At a time only 8 - 16 MHz is operational, the rest remains unutilized



-  Terrestrial TV Broadcaster
-  TVWS

GRAM MARG

Challenges in Connecting Rural India



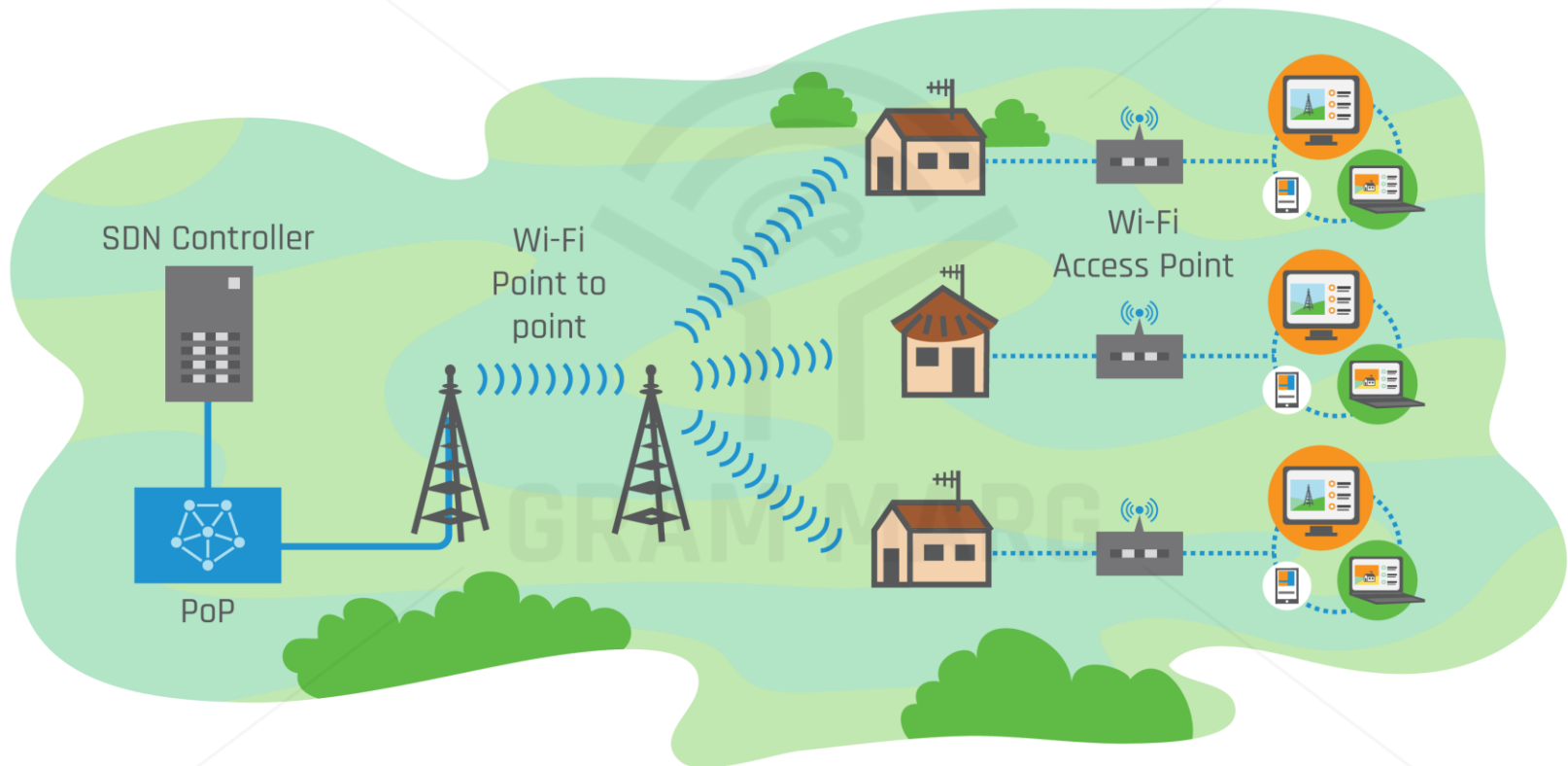
Connecting the Unconnected



Connecting the Unconnected



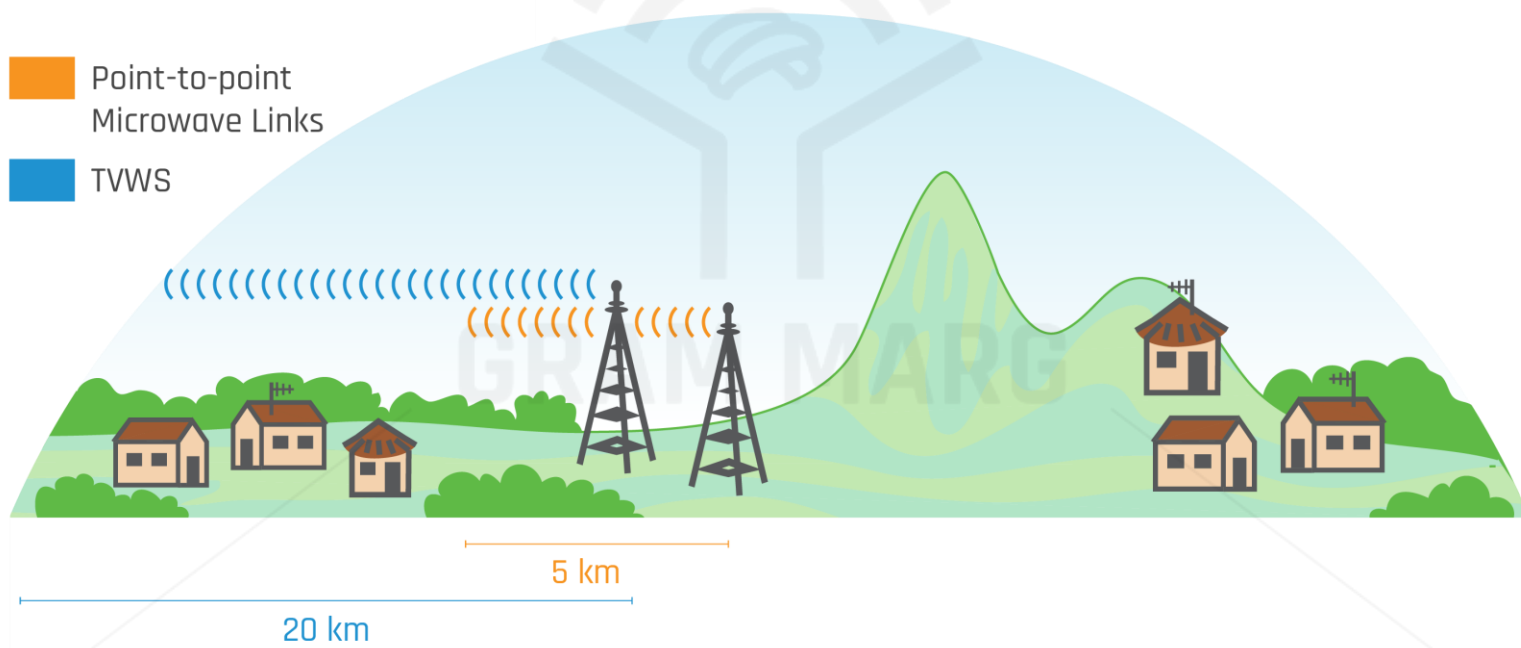
Middle Mile Network Architecture



Benefits of TVWS over Microwave Links

Coverage Area

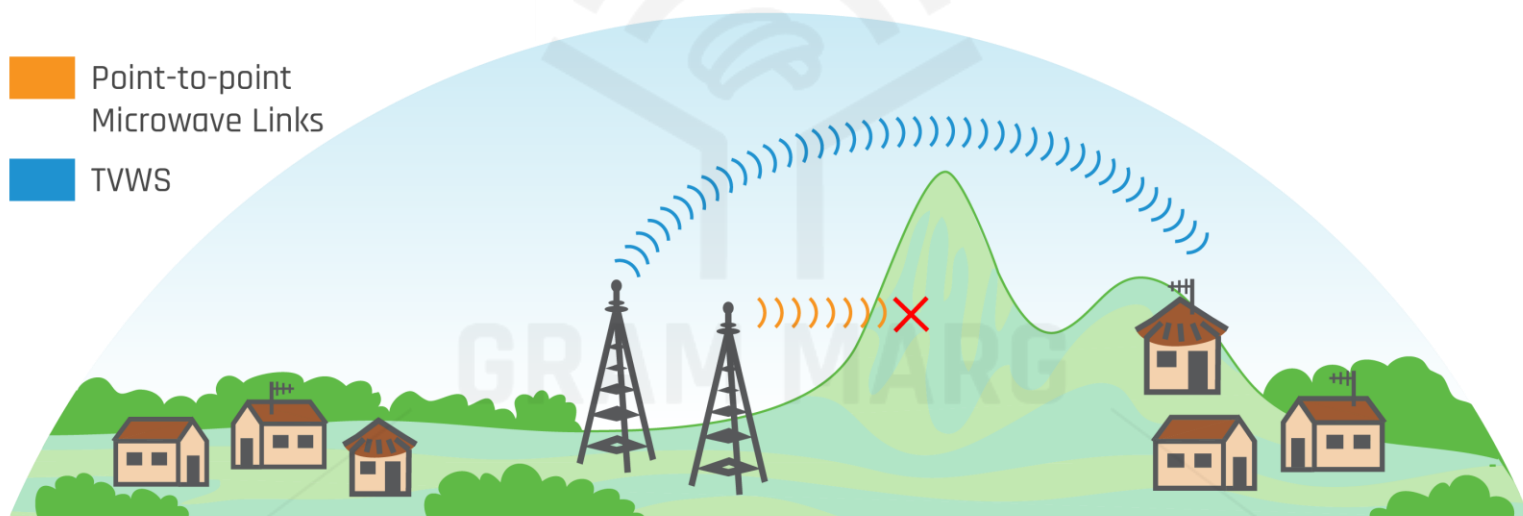
- Point-to-point Microwave Links
- TVWS



Benefits of TVWS over Microwave Links

Non Line of Sight Connectivity

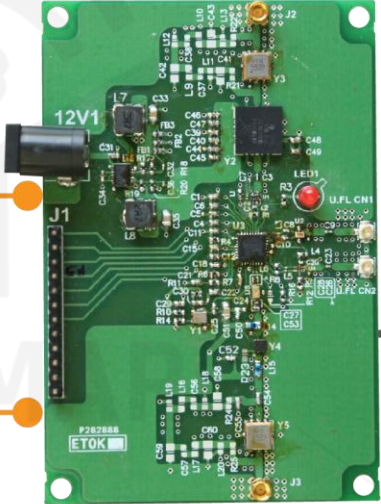
- Point-to-point Microwave Links
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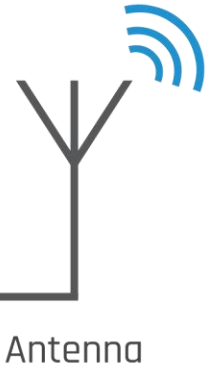
Indigenous Technology Development



Wireless Embedded Board
Commercially Available Off-the-shelf



RF Converter Board



Antenna

Indigenous Technology Development



R&D project funded by Tata Trusts



Gram Marg's technology solution and its deployment on field

* Internet Bandwidth was enabled by Tata Teleservices Ltd.



Villagers using Internet

* In collaboration with ground partner PUKAR

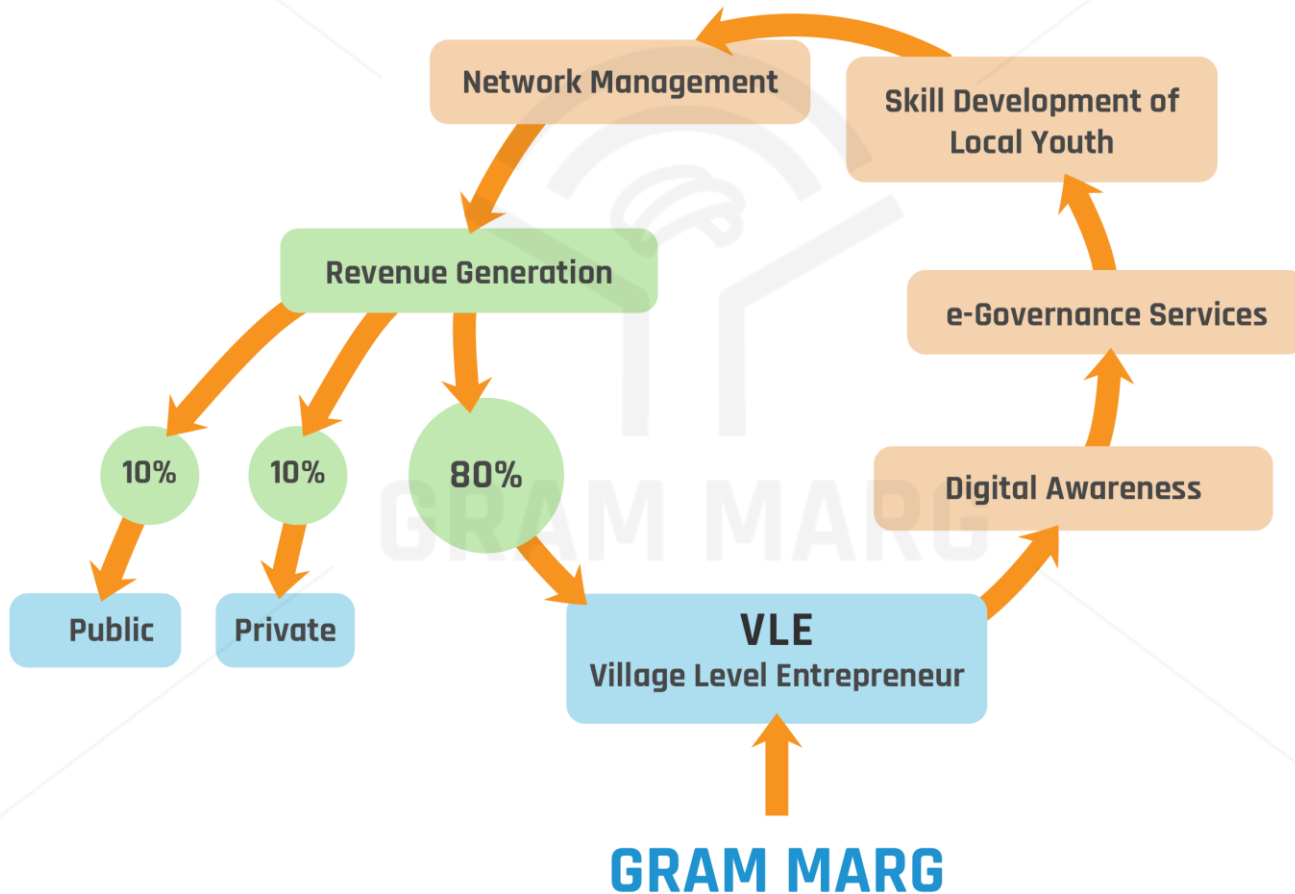
Why is Sustainable Model Necessary?

4P Model



Sustainable Model

Socio-economic outcomes

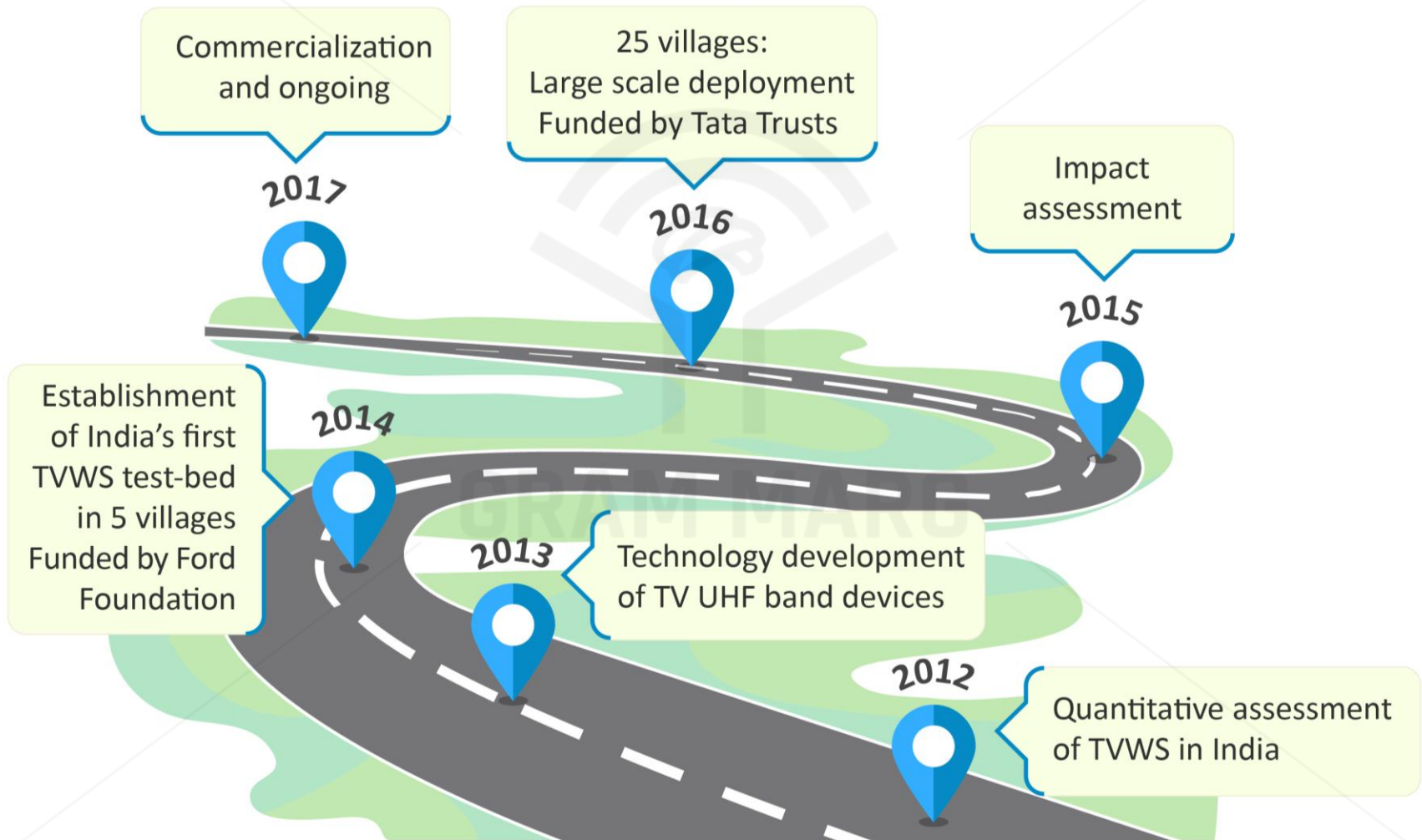




Village Level Entrepreneur at Work

* These services are provided by Common Service Centers, e-Governance Services India Ltd.

Gram Marg's Internet Journey



Summary of Gram Marg Solution for Rural Broadband

**TVWS in the
Middle Mile**

+

**4P Model
+
VLE Business
Model**

=

**Connectivity
in 640,000
Villages**

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Thank You

For more Information visit www.grammarg.in