

The secret sauce of internet inclusion: local connectivity solutions, local content, local social entrepreneurship, and multi-stakeholder partnership.

Partners: PicoSoft Nepal & Microsoft

With roughly half the population lacking internet connectivity, it remains clear that underserved communities in the developing world and beyond require better access to physical technology, access to the internet, as well as digital literacy and computer science education. This is especially the case for women and girls, who are often left behind. To truly solve SDG4 (Education), SDG5 (women empowerment), and SDG9 (infrastructure development), technology remains a key driving force that crosses over these three SDGs in addition to the remaining fourteen.

With information poverty being a direct contributor to lower economic and social prosperity, local social entrepreneurs are (1) designing and implementing unique solutions enabling internet connectivity, (2) developing locally-driven content, and (3) partnering in multi-stakeholder approaches to improve digital communication and economic opportunities. It is possible to build affordable access solutions and inclusive digital literacy programs that do not require significant infrastructure investment. We must think creatively about the access solutions that are not widely known or considered. We must partner across the private and public sector in a multi-stakeholder approach to truly solve these lofty goals.

One innovation driving such innovative and affordable access includes the use of TV White Space connectivity in Nepal by Picosoft, or connecting to the internet through unused TV channels. By combining new solutions with digital literacy and computer science programs designed for and by the local market, we can drive local communities and citizens to empower themselves through true digital inclusion.

While regulatory policy is often a consideration in such endeavors, it is important to identify unique ways to empower local communities and local partnerships, and encourage local regulators to balance existing rules with the need to advance society.

Picosoft was one of ten recipients to win Microsoft's annual Affordable Access Initiative grant aimed at furthering local entrepreneurs actively involved in increasing energy and Internet access around the world. Through this grant, mentorship from Microsoft and other industry experts, as well as participation in an incubator program with Village Capital, PicoSoft aims to further its existing footprint of providing affordable, high-speed Internet services in rural Nepal.

In a country with difficult geography, delivering broadband through traditional means is exceedingly challenging, not to mention economically infeasible. Picosoft believes other rural communities could replicate such technological innovations to empower its citizens via Internet via TV White Spaces technology or what is often referred to as "super Wi-Fi". TV White Spaces can travel over long distances and through mountainous geography, making this unique and affordable connectivity solution extremely viable for rural and developing communities within

Nepal and beyond. Our program plans to increase connectivity to more than twenty K-12 schools, which has already been piloted during recovery efforts following the devastating 2015 earthquake.

We believe there is a more cost-effective way to solve the digital divide, to introduce telemedicine options in unserved communities, and to innovate within the agricultural sector and beyond. We believe TV White Spaces is one of the keys to solving these three SDGs in Nepal and around the world, where being disconnected from the Internet means not participating in today's digital economy. By bringing together the research community, local Internet Services Providers like Picosoft, practitioners, teachers, NGOs, nonprofits, industry partners, government, and our rural communities, we believe we can identify and articulate opportunities for research and impact. We believe TV White Spaces and locally-driven content might just be the silver bullet to overcome the overarching challenges that lead to improved quality of life in rural communities and drive greater inclusion.

Background documents

- <https://news.microsoft.com/features/second-year-of-microsoft-affordable-access-initiative-grants-awarded/#rZvI3Mlqevm6Xof.97>
- <https://www.microsoft.com/en-us/affordable-access-initiative/winners>