

GLOBAL INFORMATION SOCIETY WATCH 2018

Community Networks



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This edition of GISWatch came into being alongside a brand new baby boy. Welcome to the world, Ronan Diga!

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GEORGIA

SAY “NO” TO ISOLATION: THE TUSHETI WI-FI COMMUNITY NETWORK IN GEORGIA



Small and Medium Telecom Operators Association of Georgia and Tusheti Development Fund
Ucha Seturi and Rati Kochlamazashvili
toa.ge/en/?p=974

Introduction

This report is about the Tusheti Wi-Fi community network project in Georgia. Tusheti is the name of the remote northeastern region of the country, located on the northern slopes of the Greater Caucasus Mountains. It is part of the Tusheti Nature Reserve and National Park, which is the largest protected region in Europe.¹ At 2,345 metres, the village of Bochorna is the highest settlement in Europe.

Tusheti can only be reached by an unpaved road that is considered one of the world's most dangerous,² and which crosses the 2,850-metre-high Abano Pass. The population of Tusheti is physically isolated from the rest of Georgia, in part due to the heavy snow in the region.

The community Wi-Fi project has brought high-speed internet to more than 33 villages in Tusheti, as well as connectivity to the Abano Pass and for the roughly 14,000 tourists visiting the region every year. It is a good example of installing a community Wi-Fi network in a high mountainous region. At its peak, the network reaches elevations of 3,500 metres.

The project has opened new development opportunities for tourism and agriculture, and helps to preserve the unique local culture. It also provides an essential communication channel for healthcare and other emergency sectors. It supports the economic sustainability of the region and creates business opportunities for the local community, benefiting trade in products and access to services.

The project was implemented by a local community organisation, the Tusheti Development Fund, with funding and support from the Internet Society (ISOC).³ It also received mentorship from the ISOC

local chapter,⁴ and in-kind support, including coordination, from the Small and Medium Telecom Operators Association of Georgia.⁵

It is a successful example of a private-public partnership that includes the participation of the local community, the local and central governments of Georgia,⁶ the Georgian National Communications Commission,⁷ private businesses and international donors that helped with equipment and the training of members of the community in using the internet, and in e-business skills.⁸ It demonstrates a sustainable business model that is the result of community-led development.⁹

We also believe our experience will be helpful to other isolated communities in high mountainous areas. All technical information is open and ready for sharing.

Policy, economic and political background

Georgia does not have specific policies on community networks. You do not need a licence to use the 2.4 MHz and 5 MHz spectrum, and you do not need special permission to set up a community Wi-Fi network or to operate as an internet service provider (ISP) – you just need authorisation, which can be done online. ISPs, however, have to pay a regulation fee.¹⁰

The special tax regime of 0% value-added tax for small and medium-sized enterprises (SMEs) applies to community Wi-Fi networks. Settlements in high mountainous regions also receive other special tax cuts, such as being exempt from income tax. As it is a protected area, legislation also allows for some benefits for the residents in Tusheti.

While Georgia has several community radio stations, the Tusheti community network is the first and only one in Georgia. There are no specific political issues inhibiting the roll-out of community

1 Patterson, K. (2011, 12 October). Special Program Highlights Largest Protected Area in Europe. *National Park Service*. https://www.nps.gov/romo/learn/news/pr_news_release_special_program_october_20_2011.htm

2 See the BBC documentary at: <https://www.dailymotion.com/video/x1tpe2k>

3 <https://www.internetsociety.org>

4 <https://www.facebook.com/groups/isoc.georgia>

5 toa.ge/en

6 www.economy.ge/?lang=en

7 gncc.ge/en

8 projects.worldbank.org/P152441?lang=en

9 Palovirta, M. (2017, 9 October). A Community Network in the Remote Georgian Region of Tusheti. *Internet Society*. <https://www.internetsociety.org/blog/2017/10/community-network-remote-georgian-region-tusheti>

10 The fee is 0.75% of monthly income from the activity.



networks in the country. Legislation is aligned with European Union (EU) laws, and therefore can be considered supportive for community networks overall. More competition is nevertheless needed to improve access to the internet in the country. The population of the country is 3.7 million, and half of the people live in the cities. Mobile penetration is nearly 130%,¹¹ and the number of fixed-broadband subscribers is 774,000 (at end of 2017).¹²

Setting up the Tusheti community network

In September 2016, the ISOC Georgia Chapter, the Small and Medium Telecom Operators Association of Georgia, the Freenet Ltd. Association, and the Tusheti Development Fund – a non-profit organisation set up for the project – signed a memorandum of understanding (MoU)¹³ with the ISOC EU bureau to build and develop a new wireless network for the Tusheti community. This MoU creates the multistakeholder group that guides the development of the community network.

Equipment was procured over the next few months, and the network itself was set up in just 60 days – between the end of June and the end of August 2017.

It was built using only solar energy, six masts up to six metres in height, and a few gap fillers for “white” areas. We also bought and installed a few end-user computers for the most vulnerable villages and used them for site and network checking and testing. This high-speed wireless internet service can deliver a 10 Mbps connection to each user.

The network connects to the internet in the Kakheti region (the village of Ruispiri is the closest point for internet connection) via a 42 km radio link with a 120 Mbps connection speed to a mast on the Abano Pass. The Abano Pass is then connected to the Diklo mountain mast (this is a 20 km link). From this point a connection is made to three masts that cover all three of the gorges in the Tusheti region. The network provides access to 85% of the villages in Tusheti, and covers more than 260 square kilometres. Freenet provided technical training and helped with on-site installations.

The parallel activities by the government, such as those by the Ministry of Economy and Sustainable Development’s Innovation and Technology Agency (GITA), and the World Bank-funded GENIE Project¹⁴, have also been very important for getting the network going. The GENIE Project trains disadvantaged citizens in internet and e-commerce skills. Participants also receive a voucher (USD 70) as a contribution towards purchasing equipment and paying for bandwidth.

11 <https://www.budde.com.au/Research/Georgia-Telecoms-Mobile-and-Broadband-Statistics-and-Analyses>

12 GNCC Annual Report: gncc.ge/uploads/other/3/3117.pdf

13 https://www.google.com/url?sa=t&rct=j&q=&esrc=s&source=web&cd=1&ved=2ahUKEwj243w_J_dAhVEcPAKHT6qBAYQFjAAegQIABAC&url=https%3A%2F%2Fwww.internetsociety.org%2Fwp-content%2Fuploads%2F2017%2F08%2FPress20Release20MoU20Tusheti20Georgia.docx&usq=AOvVaw2mDG7-vkCtA_-bvotX8dQ

14 documents.worldbank.org/curated/en/320681467987898858/pdf/PAD1543-PAD-P152441-R2016-0029-1-OUO-9.pdf

Network sustainability

We want to highlight the sustainability and business model of the community network. Firstly, it is important to involve the local community in the project – in conceptualising the project, in installing the network, and in managing the project’s finances. The community needs to have a good understanding of the idea of the social ownership of the network. Right now the Tusheti Development Fund works well as a mechanism to manage the network. Through this the community is able to manage the project on its own, whether it comes to technical or managerial skills.

The network provides cost-effective internet connectivity to dispersed communities located in a challenging terrain, and this point is very important for us.¹⁵ The profit generated from the network is not allowed to exceed 10% of all operational and capital expenses.¹⁶ Any profit made is used to develop the network further, repair or replace equipment, or for other activities that promote and develop the network.

Tourism is fundamental to the financial sustainability of the network. Currently Tusheti is in high demand from local and international hikers and adventure tourists. As a result, hostels and guesthouses contribute the most to the income of the Wi-Fi network. Good quality Wi-Fi is also important to begin thinking about the development of meetings, incentives, conferences and exhibitions (MICE) tourism.

Most importantly for many permanent residents, the internet is free and running costs are covered by the Tusheti Development Fund during the winter time, when tourism is low – although it is hoped that the young tourists will find other reasons to stay in the area when poor weather rules out hiking or adventure sport.

A clear understanding of the importance of the “bottom-up” approach is crucial. Each community also has to understand the importance of volunteer activities and how this can contribute to the development of their community or region. The voluntary activities provide in-kind support from local community members and local stakeholders. This is the type of spirit necessary not only for running the Wi-Fi network, but also to meet the needs of



the community, such as roads, electricity, and water supply. The state and donors create opportunities for micro and small businesses, but often these lack “community soul”. As a result, they do not bring the desired results and benefits for the whole community and for individuals inside of the community.

Conclusion

The benefit of the Wi-Fi network to the community is clear.

Irakli Khvedaguridze is a 76-year-old doctor living in the village of Bochorna. During winter he is the only resident in the village. When local technicians arrived to install the antenna and get the network connection running, he was overjoyed, even though he did not yet have a smartphone or even a computer. He recounted the following story: One winter a tree fell on a man in Tusheti, hurting his back. The man had to walk with his injured back for three days through waist-deep snow to find someone who could then contact the doctor to help. Even then, helicopters could not reach the man and a team of seven men had to walk from another village

¹⁵ Quarmyne, N., & Granville, K. (2018, 5 January). Hauling the Internet to an Ex-Soviet Outpost High in the Caucasus Mountains. *The New York Times*. <https://www.nytimes.com/interactive/2018/01/05/technology/caucases-mountains-internet.html>

¹⁶ Maka. (2018, 19 March). Project for Tusheti Community Internet Network, Georgia. *Small and Medium Telecom Operators Association of Georgia*. toa.ge/en/?p=974

and carry him out on a stretcher. The doctor's first thought was how much of this could be avoided if there was an internet connection.

Just a year's experience shows that the demand for local tourism facilities has increased rapidly. The Tusheti network allows tourists to easily connect directly with the locals, and those in the tourism industry can now focus on offering their services without an intermediary. Local guesthouses need the internet to support their hospitality businesses and stay competitive in the market – a high-speed internet connection gives them an advantage. A guesthouse owner in Darkizanidze has expanded her guesthouse to meet the demand of an increase in the number of tourists since the Wi-Fi was installed.

The farmers and guesthouse owners deep in the Gometsari gorge, who previously did not have the internet, are now able to boost their businesses and have an "easier life". The farmers are also able to reach out more to buyers of their products, besides enjoying connecting to their relatives in faraway places. Archil Elizbaridze, a sheep farmer, says he enjoys the conversation with his family and friends every evening after he takes care of his sheep.

The hard winter in the region undermines the network, and brings us new challenges, such as those related to electricity and solar energy supply in the long winter nights. Two high-altitude sites (the masts in Abano Pass and Diklo) need their batteries replaced and additional solar panels installed because of a lack of sunlight in the wintertime, and over periods of heavy snowfall. Other than this, the radio equipment and other devices are working

without any issues, network performance is good, and technical troubleshooting has been carried out in an appropriate way.

The Small and Medium Telecom Operators Association of Georgia is now working with local partners on a different community network project in the neighbouring Pshavi and Khevsureti areas and we hope to find donors and supporters for this network. This will be connected to the Tusheti community network. It is important for both of these areas to get access to the internet, because they have two schools with more than 30 children, and more than 50 SMEs.

Action steps

Firstly, our plans relate to the Tusheti project. This year – and for next two years – we have to monitor the system we have built and keep it running, offering help wherever it is needed. We will check all sites and will install additional filler masts so that there is full coverage in the Tusheti area.

One challenge is the lack of qualified employees in the local community. However, we have managed to find a decent technician and we will train and prepare him for on-site activities.

Tusheti also faces the important opportunity of deserted villages. The internet could allow these to be resettled by people in the areas near tourist trails. Secondly, ISOC is working in cooperation with the Kyrgyzstan government, the regulator and the ISP community in that country, as well as the ISOC Kyrgyz Chapter, among other stakeholders, in order to replicate the Tusheti model there. We will support this in any way we can.

Community Networks

THE 43 COUNTRY REPORTS included in this year's Global Information Society Watch (GISWatch) capture the different experiences and approaches in setting up community networks across the globe. They show that key ideas, such as participatory governance systems, community ownership and skills transfer, as well as the "do-it-yourself" spirit that drives community networks in many different contexts, are characteristics that lend them a shared purpose and approach.

The country reports are framed by eight thematic reports that deal with critical issues such as the regulatory framework necessary to support community networks, sustainability, local content, feminist infrastructure and community networks, and the importance of being aware of "community stories" and the power structures embedded in those stories.

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