Impact evaluation of Activity 3.2.2.3 "Provision of Equal Access Opportunities to Electronic Communications Services in the Whole Territory of the Country (Development of Broadband Network)”

Summary

Context and objective of evaluation

In accordance with the European Union’s strategy „A Digital Agenda for Europe” (hereinafter – DAE), the 2020 target sets:

* all Europeans have access to much higher internet speeds of above 30 Mbps;
* 50% or more of European households subscribe to internet connections above 100 Mbps.

In order to ensure the achievement of the goals set by the DAE in Latvia, a EU finansed State aid programme (hereinafter SAP) No.SA.33324 „Next generation network accessibility un rural areas” has been developed and is being implemented in two stages:

* 1st stage – The project “Next generation network development in rural areas” (hereinafter– **Project**) implemented within the European Union funds 2007–2013 planning period 3.2.2.3. activity (completed on August 31, 2015, within the project 177 access points (hereinafter – AP) have been constructed and 1813 km of optical cable have been laid);
* 2nd stage – The operational programme “Growth and employment” 2.1.1. specific support objective project "Improving Access to Electronic Communications Infrastructure in Rural Areas" Nr. 2.1.1.0/16/I/001 (launched in July 2016. It is planned to build at least 220 access points within "white" areas during this programme)

The evaluation objective is to evaluate **Project investment**, that is related to construction of a next generation broadband electronic communication network (Internet access service with a data transfer rate of at least 30 Mbit/s, hereinafter – NGN services) infrastructure “middle mile” (hereinafter - MM)), **effectiveness, efficiency and impact to determine how the infrastructure built promotes the interest of electronic communications merchants to engage in the creation of subscriber line** (hereinafter – “last mile”, LM**) connections for internet access service provision to end users and the necessary actions, to increase electronic communications merchants’ interest in creating “last mile” connections in those regions, where it is not sufficiently provided for.**

Project executor and financial beneficiary – VAS “Latvijas valsts radio un televīzijas centrs” (hereinafter – LVRTC)

Evaluation tasks

1. To carry out an evaluation of the Project's effectiveness, efficiency and impact, to analyze the achieved results, incl. analyzing the use of the optical network infrastructure built during the Project, the availability of NGN services in rural areas, etc.
2. Prepare proposals for establishing potential middle mile access points and extensions, incl. potential connections to mobile base stations, municipal infrastructure facilities.
3. Prepare proposals for the development of the “last mile”.

***Key findings of the evaluation***

The assessment resulted in the identification of 29 findings and 36 recommendations in relation to the middle mile infrastructure, NGN services availability, as well as the project implementation effectiveness, efficiency and other aspects. The following is a brief summary of the findings (most important findings are in bold):

Usage of the built AP:

* **A1: Project objectives do not include AP utilization indicators, therefore analysis of AP utilization against planned AP utilization is not possible .**
* **A2: The actual use of AP by the last mile operators (there are contracts for the usage of ~ 50 AP out of 177 created) is considered to be inadequate; a more detailed analysis of actual use is not possible due to data unavailability.**
* **A3: Potential AP utilization rates are significantly lower than planned, as a large proportion of 1st stage APs are located in areas where in 2014, electronic communications companies already provided NGN services** (4000 out of the 81000 households, where contracts were made about AP usage, 16000 of 81000 households , where AP was set up, but the PJ service is not available).
* **A4: Support for middle mile connection establishment is a necessary but not sufficient condition for the prevention of market gap in "white" areas, as a result, failing to take other measures to prevent market gap (including the development of last mile) the investments made in MM infrastructure may prove to be useless.**
* A5: Insufficient number of clients in the territory - a major factor hindering the use of built AP.
* A6: High AP subscription and connection costs – the second major obstacle to AP use
* A7: Inappropriate AP installation sites - a significant barrier to AP use.
* A8: Insufficient planning of intervention sites - one of the factors of under-utilization of AP.
* A9: Insufficient coordination between AP use and identification of service demand.
* **A10: Lack of a complex and targeted national policy for ensuring broadband internet access – the main cause of underutilization of built AP.**

NGN serviced availability:

* **A11: The main reason for insufficient availability of NGN services - market gap in certain areas (insufficient revenue potential with respect to the cost of NGN service provision)**
* A12: Existing NGN Internet service availability indicators and their calculation methodologies (such as the number of affected households) do not reflect the objectives of NGN service availability in essence.
* A13: The presence of a middle mile optical access point in the area as a criterion for the “gray/black” classification of NGN availability is not sufficient as it does not mean that households automatically have access to the NGN services (resulting in lower actual NGN figures);
* A14: There is no clear definition of NGN Internet access, NGN treatment can have a significant impact on the type and location of intervention;
* **A15: Failure to use mobile communication capabilities to achieve activity and DAE goals** (given recent mobile communication developments >30 Mbs Internet can also be provided through mobile communications, this significantly changes both NGN inaccessibility rates and potential actions/interventions to ensure NGN availability).
* A16: More than 30 sites that were “gray/black” in the 2011 study were classified as “white” in the 2014 study, indicating inconsistencies in the approach used and preventing an assessment of overall VAP progress.
* **A17: Lack of up-to-date and accurate information on broadband infrastructure and service availability - a critical barrier to both successful intervention planning and implementation, as well as implementation of broadband delivery policies in general** (a priority task and precondition for any broadband development action is the provision of broadband availability, demand and infrastructure mapping).

Effectiveness

* A18: The formal Project results and outcome indicators have been reached.
* **A19: The Project goals and indicators do not reflect Operation programme activities and DAE goals**
* A20: There is a lack of documentation of the exact procedure for calculating the Project indicators, as well as the data used to make these calculations.

Relevance

* **A21: State aid for broadband internet access provision has a significant role in development of the country, the current broadband project implementation flaws are not a reason to reduce state aid**

Efficiency

* **A22: 1st stage AP creation efficiency is considered to be low (affected households ~ 17% of theoretically possible, length of optical lines, number of AP ~ 50% of Lithuanian analogue project).**
* A23: Selecting intervention sites without regard to distance to nearest optical line reduces project productivity.
* **A24: There is an observable duplication of tracks created under VAP support with existing fiber optic cable lines of other commers (all state-owned), posing a risk of wasteful investment.**

Utility

* A25: AP to be constructed could also provide Internet access to public authorities and businesses, but this option was not foreseen in the Project.
* A26: Internet access along the optical line track would improve the usefulness of built lines.

Other aspects

* A27: 10 of the currently planned 2nd stage APs are being developed in "gray" areas that do not meet the state aid programme conditions.
* **A28: The dual status of LVRTC – source of potential conflict of interest**
* A29: The inaccessibility of the information necessary for the evaluation made it difficult to conduct the evaluation.

Proposals for the creation of potential access points and extensions

The during the evaluation methodologies and extended data and cartographic material (using the Postgres/PostGIS database and QGIS tool) for the development of potential access points and extensions were developed:

* Methodology for NGN service availability territory zoning in 1x1km grid cells and NGN service market failure map, that was based on the 2014 study results and the infrastructure built during the Project (more recent data unfortunately is not available and the creation of a current NGN service market failure map is one of the most important objectives in the future);
* Methodology for identifying and prioritizing potential intervention sites taking into account:
  + Population/household number;
  + Economic activity index;
  + Distance to LVRTC or nearest optical line of other operators;
  + Presence of existing mobile base stations or Internet service providers in the area;
  + Possibility to make sequential AP connections;
* Prioritized potential AP construction site list/map for densely populated areas, that is usable for both broadband 2nd stage AP location specification and further broadband development planning;
* Prioritized mobile base station list/map, to which the optical network could be extended to.
* Prioritized municipal infrastructure object list/map, to which the optical network could be extended to.
* Prioritized list/map of places, where mobile communication towers could be built within the SAP.

Proposals for the development of last mile

Based on the evaluation of the Project and the analysis of the experience of other countries, proposals for possible support and promotion measures related to the development of last mile have been prepared:

* P1: Proactive work with last mile merchants, municipalities and potential clients to develop NGN services in a specific area;
* P2: Reduction and differentiation of VAP average mile service tariffs according to the level of market failure;
* P3: Introduction of Broadband Internet Vouchers (similar to the *Better Broadband Subsidy Scheme* in the UK)
* P4: Decentralized municipal procurement of last-mile services (similar to German broadband support schemes in municipalities);
* P5: Centralized procurement of last mile services (similar to the Estonian last mile procurement);
* P6: Communication tower construction within SAP;
* P7: Connection of state and municipal objects to the MM network created within the framework of the SAP.

These measures are to be implemented (subject to State aid rules) as new / separate State aid programs (the existing SAP is designed exclusively for the construction of middle mile infrastructure and, by its very nature, does not allow for last mile intervention).

Tasks related to implementation of recommendations

In order to remedy the problems identified during the evaluation and to improve the availability of NGN services, recommendations have been made on the tasks ahead:

* U1: Update broadband availability policy, develop new policy document in this area (Ministry of Transportation);
* U2: Strengthen policy planning and implementation capacity for broadband internet access (Ministry of Transportation);
* U3: Improve Broadband Development Coordination (LVRTC);
* U4: Improve methods of territory classification and intervention place choices (Ministry of Transportation);
* U5: Plan the building of remaining 2nd stage AP based on the refined methodology (Ministry of Transportation, LVRTC);
* U6: Ensure mapping and regular updating of broadband demand, services and infrastructure (Ministry of Transport, LVRTC);
* U7: Update the tariffs of SSP MM services ensuring their reduction and differentiation according to the level of market failure (Ministry of Transportation, LVRTC);
* U8: Prepare and implement last-mile state aid measures (program) to promote the use of optical infrastructure built within the Project (Ministry of Transport);
* U9: Prepare and implement a set of measures to connect state and municipal institutions to the infrastructure constructed within the framework of the SAP (Ministry of Transportation, LVRTC);
* U10: Prepare proposals for EU funds projects for the next programming period according to revised policy / approach (Ministry of Transportation);
* U11: Develop and implement optical network owners cooperation model to avoid duplication and irrational investment in broadband development (Ministry of Transportation);
* U12: Implement a pilot project for the construction of communication towers (Ministry of Transportation, LVRTC);
* U13: Involve municipalities in planning and implementing broadband development (LVRTC);
* U14: To evaluate and improve the institutional model of state support program in the field of broadband development, thus eliminating the LVRTC potential conflict of interests - LVRTC fulfills the state function and operates as a data transmission company (Ministry of Transportation).