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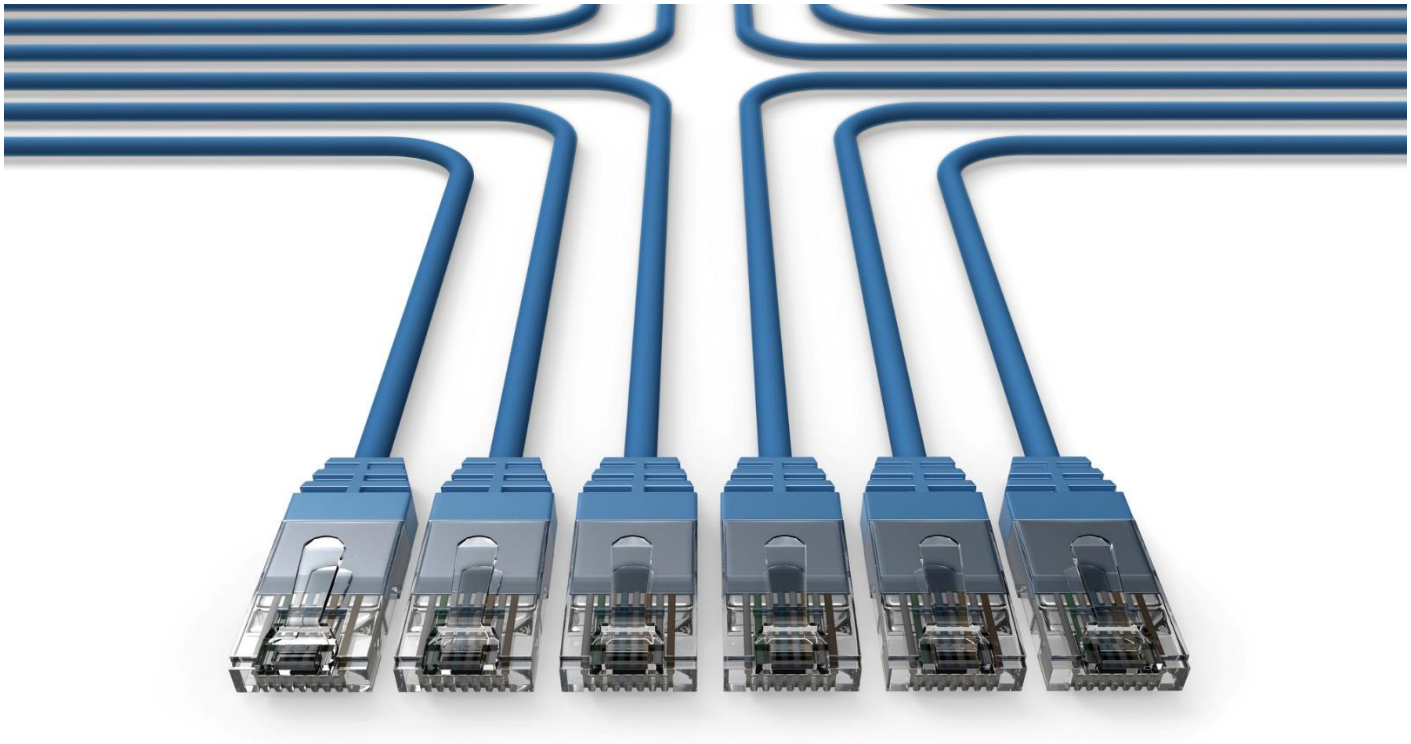

Does the Public Investment in Internet Access Reach the Population?

Riga, 2020

Latvijas Republikas
Valsts kontrole

Dear Reader,

We have completed a performance audit where we explored whether the investment made in deploying the electronic communications networks of the middle mile over many years, that is, within the framework of the Broadband project, yielded the expected benefits.

The aim of the project was to provide better and faster Internet for both individuals and businesses. The public administration should also benefit, which would become more and easier accessible to the public through e-services.

Unfortunately, we cannot consider that aim as achieved despite more than 3,000 kilometres of optical fibre cable built, because the middle mile infrastructure is only a middle node between the backbone network and the end user. Hence, without the last mile provided, neither an individual, a business nor an authority gets access to high-speed Internet connection.

The Ministry of Transport (hereinafter referred to as the MoT), as the leading institution in the sector, has approached the Broadband Project by attracting EU funding for the deployment of the middle mile. In this way, **one** ensured public intervention to deploy a middle mile network in places where electronic communications service providers are not interested in roll-outs, and to create a more attractive environment for businesses to deploy the last mile.

However, in practice, the building of the last mile infrastructure up to the end user itself does not happen protractedly. The businesses use the established access points rarely; moreover, one uses the rent of the middle mile network more often when building-up the quality of the Internet or data transmission services already offered. This is a clear signal that the approach is not extensive and sufficient.

It is clear that the fact that Latvia is urbanising and low solvency increases the low population density outside the cities makes the task of the Ministry of Transport to ensure the return on investment much more difficult. However, given that one has already invested 62 million euros in the deployment of broadband network so far, plans to invest 10 million euros more during this EU fund programming period and 25 million euros between 2021 and 2027, every effort must be made to ensure that those significant investments bring practical benefits to the public.

It is a matter of concern that the project still achieves its objectives according to the MoT. The auditors find the approach used by the MoT to measure the project results problematic because they are not estimating how many households will actually have access to the high-speed internet, but they are counting how many households are located at the end of the deployed middle mile by disregarding the existence of the last mile and not assessing the interest of businesses to develop electronic services in each specific locality. The calculations by the MoT are, to say the least, very optimistic compared to the auditors' calculations. Neither the Ministry itself nor the developer of the Broadband Project, state-owned joint stock company "*Latvijas Valsts radio un televīzijas centrs*" (Latvian State Radio and Television Centre, hereinafter referred to as the LSRTC), obtains or maintains information on the actual use of the access points built in the project to provide Internet access. In addition, the audit also failed to ascertain whether anyone had estimated at all how many access points one should build in one locality and where exactly each of those points should be located.

The LSRTC is not the only state-owned enterprise that invests in the development of

electronic communications networks apart from several others. During the audit, we established that those networks deployed by different companies are overlapping partially. If the actions of the network owners had been more coordinated, planning the construction would have been more efficient. In order to prevent such uncoordinated investments in the future and to optimise the maintenance costs of the already built networks, the Ministry of Transport must define a common policy of the electronic communications sector covering the networks of state-owned enterprises and facilitate their sharing actively.

We thank the experts of the MoT and the LSRTC for their cooperation, which advanced the auditors' understanding of the technically complicated field of electronic communications.

Respectfully yours,
Ms Zita Zariņa
Department Director

Summary

Motivation

Provision of high-quality services to the population, moreover, in the most accessible way possible, is a crucial task of the government and local and regional governments. With the development of information technology opportunities, public administration invests significant resources in the introduction of e-government principles and electronisation. Using a service requires a constant, high-speed Internet on both sides, that is, for the institution to provide the service and for the citizen to receive it.

Latvia is known for high-speed Internet, but one may not forget that its provision requires infrastructure, whose deployment and maintenance are resource-intensive. Both the government and the largest electronic communications companies invest when developing infrastructure at all three network levels, that is, the backbone network, the middle mile and the last mile. As the development of infrastructure is not equally cost-effective for businesses in all sections or areas, the government invests public funds in the establishment of such commercially disadvantaged sections in order to ensure equal access to high-speed Internet for all residents (see Figure 1). In order to improve the Internet access, the government is attracting the funding from the European Union (hereinafter referred to as the EU) since 2012. The European Regional Development Fund (ERDF) has earmarked 72 million euros for the deployment of the middle mile networks under the so-called Broadband project to ensure the access to a constant, user-independent Internet speed above 30 Mbit/s.

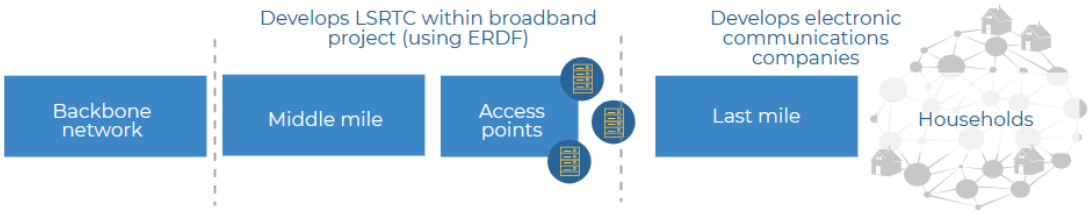

Figure 1. The way of the broadband Internet households (*backbone network, the middle mile and access points developed under the Broadband project of LSRTC by means of the ERDF, the last mile developed by electronic communication service providers, and households*)

To verify that the investment of 62 million euros in the Broadband project to date, consisting of 45 million euros already spent and the contractual commitments of 17 million euros, has been effective, we audited the MoT, which shapes the electronic communications policy, and the LSRTC that implements the Broadband project by deploying and operating the network.

Main Conclusions

Data from the Central Statistical Bureau (hereinafter referred to as the CSB) for 2019 show that 85% of households in cities and 78% of households in rural areas use broadband Internet in Latvia. In comparison, this indicator was 59% in 2011, when the state support program for the deployment of the next generation network was coordinated, thus the increase of the indicator over 8 years is significant. During this period, the LSRTC was not the only one to develop a broadband network, whereas electronic communications companies developed their networks as well, including mobile services providers. According to the information compiled by the Public Utilities Commission, the number of connections with Internet access is 2.5 million in the mobile network and 526 thousand connections in the fixed network, where 68% of connections have Internet speeds above 30 Mbit/s regardless of the type of connection. Despite the large-scale government intervention in the Broadband project of 62 million euros, one cannot determine the impact of those investments on the generally good Internet access indicators in Latvia. On the contrary, the audit concludes that the return on investment in the Broadband project is currently low, as the deployed network is only part of the section required for Internet access in a household. Even in the most positive situation, an increase in the number of connections is possible not more than 45% of the initially planned one. Currently, only 7% of the established connection points have been leased and lease agreements have been concluded for only 33% of the total length of the built network.

At the same time, the auditors do not question the need for public intervention in the network infrastructure. Although the number of connections to the network of mobile operators provides many times more users with Internet access, according to the study[1], the quality of communications in the mobile network is volatile and load-dependent, thus failing to meet the goal set by the European Commission (EC) of not only high-speed but also constant Internet connection. Consequently, investments in the broadband network were necessary, but with a balanced policy for the deployment of the middle mile and the last mile networks according to the State Audit Office. Due to both the low solvency of the population and the reluctance of electronic communications businesses to invest in the provision of services in populated areas where it is not profitable, one has not developed the last mile network. Nevertheless, the MoT has not sought and offered appropriate solutions for a long time. Government agencies must take additional measures urgently now to reap greater return from the investments already made in the deployment of the network, draw conclusions, and review the future approach to the planning of electronic communications development.

While going through the further development of the hitherto neglected last mile network simultaneously, the State Audit Office considers that connecting every household to the Internet is not an ultimate goal. Hence, the MoT, as the leading authority in the area of electronic communications, must identify the situation not only in the country as a whole, but also in each populated area where one has invested by deploying an access point and where from one has not built the network further to the household. The MoT should decide on the most appropriate type of solution for a particular populated area by supporting either an electronic communications service provider, local or regional government or the household itself or by accepting that the last mile will not be developed in a particular area, so the household will not have Internet access at all. Consequently, one would not achieve the objective of the Broadband project co-financed by the ERDF. Making changes to the project in coordination with the EC by justifying a reduction in the deliverables to be achieved would be an appropriate action.

Looking to the future, the MoT is required to develop a strategy for the coordinated development of electronic communications networks and an analysis of alternatives for the development of the last

mile, as the MoT has already identified several interrelated and alternant measures in electronic communications in the National Development Plan[2] until 2027:

- One plans to invest 25 million euros into the deployment of the next generation network in rural areas and building of the last mile connections;
- One plans to invest 14.5 million euros into the construction of RailBaltica electronic communications infrastructure and Via Baltica 5G access on all major land transport routes;
- One plans to invest 7.4 million euro into updating the basic data transmission network and expanding functions by ensuring the train control and other technological processes in railway transport at railway stations, parks, sections, and other facilities, as well as into the introduction of a single information system for train planning and controlling train.

When continuing investments for the objectives of various sectors in the area of electronic communications (household, railway, land transport road), taking into account the findings of the State Audit Office regarding coordinated development of electronic communications networks and planning of sharing, which would facilitate full-fledged use of the network already deployed under the Broadband project, is even more important.

Speaking again about the findings of the audit, the network built under the Broadband project is underused and has made little contribution to improving Internet access in households. While looking for the reasons, we found three significant deficiencies:

- The MoT focuses on the ERDF-funded deployment of the middle mile network, although the middle mile is only part of the entire infrastructure required to provide Internet access to the end user. Without the construction of the last mile, the Internet will not reach the population but the MoT has not planned specific activities for the development of this part of the network so far;
- Electronic communications businesses lease the network built under the Broadband project rarely and use it for the deployment of the last mile and provision of Internet services to the end user even less;
- Increasing the number of end-users in rural areas, which have Internet access at a speed of at least 30 Mbit/s, is the main goal of the Broadband project, and there are specific deliverables set. However, the way in which the results achieved are measured does not allow judging about the achievement of a set goal on its merits, that is, the specific improvements in high-speed Internet access in households achieved in the result of the project.

The middle mile network is not enough for a household to get access to high-speed Internet.

In addition, the audit has established that one could have optimised the costs of the Broadband project if the MoT had identified what electronic communications networks had already been deployed in the country and it had a vision of developing them more effectively in the country as a whole without deploying overlapping networks. The audit concluded that the MoT also lacks a vision for the development of the State Electronic Communications Network for Emergency Situations (hereinafter referred to as the SECNES), which the LSRTC creates for special needs of public administration.

The audit found that one does not collect up-to-date information on the infrastructure of electronic communications networks constructed by electronic communications service providers in the country, the quality of Internet access services available to end-users, and the demand of end-users for improved Internet access services. In its turn, it prevents planning the state policy for the

development of electronic communications networks in a targeted manner and in accordance with the actual need and responding to changes in the electronic communications market and social and economic factors.

Having discovered the interest of small electronic communications service providers in development of the last mile, the audit assessed the tariffs set by LSRTC, according to which one leases the infrastructure built under the Broadband project. The fact that the calculation of lease tariffs is untraceable does not allow reasoning whether the tariff is set optimally, although the audit also has not found that the tariffs are set disproportionately high compared to neighbouring countries.

The audit also concluded that LSRTC accounting does not provide a true picture of the entire infrastructure built under the Broadband project. In addition, LSRTC has reduced the value of property, plant, and equipment, which reduces the profit calculated in the reporting year and, accordingly, the amount of potentially payable dividends and profit shares for development.

ONE USES THE NETWORK BUILT UNDER THE BROADBAND PROJECT RARELY

The Europe 2020 Strategy sets a target for 2020 in the Member States:
- access for all to much higher internet speeds (30 Mbps or above);
- 50% or more of European households subscribing to internet connections above 100 Mbps.

To achieve its goals, the MoT has developed policy-planning documents and has initiated a state support program in 2011 by envisaging state intervention in the deployment of the middle mile network. It also planned the development of the last mile network initially, however, the coalition council decided to increase funding for the deployment of the middle mile network started under the Broadband project by leaving the issue of the development of the last mile network to electronic communications service providers.

Only 7% of 358 connection points are leased.

The state support program is aimed at deploying the middle mile network in the areas where an electronic communications service provider does not offer Internet speeds above 30 Mbit/s or does not plan to develop the infrastructure that would provide such speeds in the next three years. One intended that public intervention would help motivate businesses to expand the last mile network to the end user. However, the MoT underestimated the risks that due to low population density and insufficient solvency outside the cities, the service providers would not be interested in developing the last mile network even from the nearest network infrastructure built. As a result, one has signed lease agreements only regarding 33% of the network built and only 7% of 358 connection points have been leased. Without additional investment in the development of the last mile, one will not achieve the goal of the Broadband project, thus the efficiency of the project funding spent will also become questionable. Furthermore, the fact that an electronic communications service provider leases a network does not necessarily mean in practice that the service provider will deploy the last mile to new end-users in a given populated area because the service provider can use the leased network to improve its other services instead, such as better data transmission and the improvement of the existing local loop.

One should note that although the MoT is aware of the problems associated with the development of the last mile, it does not solve them actively.

The deliverables of the Broadband project envisage the following by the end of 2023:

- 206,000 households in rural areas have access to broadband services of at least 30 Mbit/s, with an increase for 147,000 households from 59,000 set as a baseline;
- 75% of the total number of subscriptions are connections with at least 30 Mbit/s.

In the opinion of MoT and LSRTC, one should measure the achievement of those indicators by a number of households in a certain populated place where a the middle mile network is built, regardless of whether the electronic communications service provider has deployed the last mile in this location (see Figure 2).

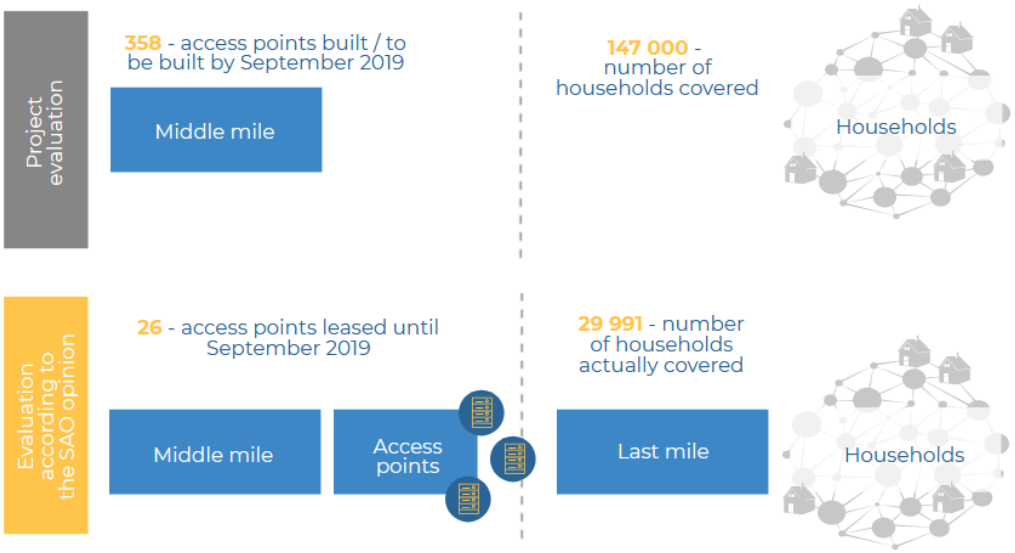

Figure 2. Assessment of the deliverables of the Broadband project. (*Assessment in the project: the middle mile – 358 deployed/ deployable access points by September 2019; Households- 147,000 households to be covered. Assessment according to the State Audit Office: the middle mile and access points- 26 access points leased by September 2019; the last mile and households- 29,991 actually covered households*)

However, the State Audit Office considers that the number of all households in the populated place where the middle mile network is deployed does not necessarily reflect the improvements achieved because of the project, i.e., how many households received the high-speed Internet access in the result of the project that had not had that access before the project. Furthermore, the definition of such a simplified static indicator does not take into account the fact that the Internet access is possible only if and when the electronic communications service provider has also developed the last mile network from the connection point. Besides, when determining such an indicator, one has not taken into account that the free choice of citizens to subscribe or not to subscribe to Internet services will also affect it.

In addition, the initial deliverables of the project, whose values were determined unreasonably optimistic, also testify to the insufficient and low-quality analysis of the current situation in the project planning. The project predicted that the number of households with the high-speed Internet access would increase by 147,000 by the end of 2023. In their turn, the auditors estimate that the maximum number of households could reach only 66 444 households instead of 147,000 even with the best forecasts given that all the connection points built are used to deploy the last mile network.

The State Audit Office detected deficiencies not only in the planning of the Broadband project, but also in the planning process of electronic communications policy in general. One established that the policy planning documents in electronic communications did not cover the development of all national electronic communications networks, but focused only on the broadband network, for whose construction one had attracted the ERDF co-financing. There is no policy-planning document that identifies, analyses, and sets development goals for all national electronic communications networks established by state-owned enterprises and where the government is a shareholder, for example, SJSC *Latvijas Dzelzceļš*, JSC *Latvenergo*, and Tet Ltd.

There is no single national development plan for electronic communications network, as a result the state has built overlapping network routes.

With missing single national vision for the development of national electronic communications networks, the owners of national electronic communications networks develop them taking into account only the interests of their state-owned enterprises and not the national interests as a whole, which results in the creation and deployment of an overlapping national communications network infrastructure. The analysis of the data on the location of backbone networks of LSRTC, JSC *Latvenergo*, and SJSC *Latvijas Dzelzceļš* during the audit revealed that the network routes connecting the largest cities of the country ran parallel to each other. By identifying and coordinating the national needs in a timely manner, one could have avoided investment in the networks built in parallel.

For a decade, the EC has been calling on countries to identify electronic communications infrastructure for investment planning and the quality development and monitoring of public policy by creating databases and cartographic material by ensuring access to such information to both electronic communications network operators and public authorities. One has not done it in Latvia so far, and comprehensive information on electronic communications networks is not available. In its turn, it hampers the development of high-quality, data-driven policies and the efficient use of both public and private investment, as well as network sharing significantly.

OPTIMISING RESOURCES IN THE DEPLOYMENT OF THE MIDDLE MILE NETWORK IS POSSIBLE

The Broadband project is building the middle mile network and connection points that an electronic communications service provider can lease from LSRTC to deploy a last mile network to the end user. The EU determines the methodology for identifying the area requiring assistance, but it does not regulate the optimal number and location of connection points in the area requiring assistance. The documentation of the Broadband project does not specify it either.

There is no criteria for estimating the optimal location and number of connection points.

The latter causes situation when there is only one connection point to an entire rural district, while there are several ones in a village that is a smaller administrative unit. The State Audit Office reasons that an address of an connection point in an administrative territory should be determined taking into account the common interests of all the stakeholders (local or regional government, businesses, and population) rather than deploying connection points at each of the separately proposed addresses. This would save money on the construction of connection points and make better use of the capacity of one connection point.

The audit identified several deviations from the project conditions, which show that there is a lack of an appropriate supervision mechanism during the project implementation:

- One has built or plans network extensions up to 18 connection points in the areas where the construction was not envisaged in the list of areas requiring assistance approved by the Optical

Network Monitoring Committee (hereinafter referred to as ONMC) and for which no public surveys have been organised;

- A network and connection points in eight locations are built or planned that have been identified as LSRTC facilities. Apart from the implementation of the Broadband project, LSRTC has been delegated several other functions related to the provision of electronic communications, such as the establishment and operation of SECNES. When developing the network based on LSRTC facilities, the used funding does not reach the household, which is the goal of the Broadband project, because LSRTC itself is subject to a ban on providing the last mile services to households;
- The network infrastructure has been built or planned up to six facilities of electronic communications service providers located in the unsupported areas, and the LSRTC has undertaken to eliminate the non-compliance risk by financing such cases from its own resources;
- Contrary to the conditions agreed by the EC that the middle mile network will connect the backbone network to the last mile network, the LSRTC has built a network of at least 170 km in length by connecting new middle mile sections on different routes without creating new connection points.

VALIDITY OF TARIFFS

The demand and price that the end user is willing to pay for the Internet access or for improved Internet speed affect the interest of electronic communications service providers in leasing the middle mile network and connection points built under the Broadband project. In its turn, the tariff set by the LSRTC, for which the service provider can use the built broadband network and connection point, also affects the subscription fee that the service provider sets for the end user. The audit has found that tariffs include not only the actual costs of providing access to the network built on the Broadband project.

The LSRTC includes service- unrelated costs into the tariff for lessees.

When assessing the LSRTC tariff policy, the State Audit Office concluded that it was impossible to trace the calculation of lease tariffs and verify the correctness of the calculation, because the tariff calculation methodology did not determine the procedure for calculating tariffs and mathematical calculation, but described the costs be included in tariffs in general. The audit did not obtain confidence that the subscription tariffs set by the LSRTC were optimal, justified, and based on the costs of providing services. The variety of tariffs reflect that, as the subscription tariff could range from 0.15 up to 35 euros/km according to the LSRTC estimates. In addition, the tariff includes costs related not only to the provision of the middle mile network lease services, but also to the provision of other business lines of the LSRTC (such as data transmission and cloud services), resulting in an increase in the tariff.

So far, one has changed tariffs only once aiming to create a more cost-effective solution for electronic communications service providers to establish connections to the optical network infrastructure. However, one has not met the target successfully, as statistical data on the volume of new, leased sections illustrate. It has decreased from 355.5 km to 46.4 km in 2017 compared to 2016. The last customer survey conducted in 2017 also shows that tariffs seem too high for businesses.

ACCOUNTING

Although one planned to deploy the middle mile network and connection points in the result of the Broadband project, the LSRTC

The value of the infrastructure built is reduced before construction is completed.

assets list only optical cable networks, according to which identifying the built connection points without additional information is impossible. The infrastructure of the connection point can be partially dismantled and relocated; therefore, in the opinion of the State Audit Office, ensuring the accounting of connection points is even more important in order to provide for their proper stocktaking and preservation of fixed assets.

Since 2018, the LSRTC has set the initial value of fixed assets created under the Broadband project to be 15% lower than the actual set-up costs. The LSRTC accounting policy does not provide for such a procedure, as well as it does not comply with the requirements of the Regulation[3], as the value of the fixed asset under construction at the time of invoice accounting is reduced. Thus, for example, in 2018, the LSRTC has unreasonably reduced the value of fixed assets by 1,246,197 euros. In addition, according to the auditors' estimate, the LSRTC profit for the last annual report has been reduced by 21%, and the amount of dividends potentially payable by the state-owned enterprise and profit shares for development have been reduced accordingly.

Major Recommendations

Based on the audit findings, the audit made 11 recommendations for improving the overall governance of electronic communications and promoting the access of services to end-users, including aimed at:

- Improving the planning process of electronic communications policy, making it comprehensive and data-based;
- Ensuring the availability of information regarding the infrastructure built in the electronic communications sector and facilitate its sharing;
- Improving the monitoring of broadband network development projects and compliance with both national legislation and EU commitments, as well as promoting project transparency;
- Improving the process of assessing the return on public investment.

Most of the recommendations were made to the MoT and the LSRTC, and some recommendations were made to the MoT as the chair of ONMC.

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[1] Electronic Communications Services Quality Report for 2018 by the Council of the Public Utilities Commission of 11 April 2019, p. 18

[2] Annex "Set of Indicative Investment Projects for the Implementation of the NAP2027" to the Latvian National Development Plan for 2021 - 2027 supported at the meeting of the National Development Council on 13 February 2020 (website of the Cross-sectoral Coordination Centre): https://www.pkc.gov.lv/lv/attistibas-planosana-latvija/nacionalas-attistibas-padome, resource viewed on 12 February 2020)

[3] Paragraphs 72 and 73 of Cabinet Regulation No 775 "Regulations on the Application of the Law on Annual Reports and Consolidated Annual Reports" of 22 December 2015