This project is funded by
the European Union

Telecommunications sector in Peru

Support to EU Market Access Team and Trade Policy Analysis in Peru

January 2024

This project is implemented by

GOPA WORLDWIDE CONSULTANTS

International Economics
Strategic Analysis For Growth & Development

\ SUMMARY

The report delves into Peru's telecommunications sector, highlighting its legal framework, key players, service statistics, and ongoing projects. It emphasizes the sector's growth, regulatory measures promoting competition, and the pivotal role played during the pandemic. After commenting on the status of Peru in relevant international connectivity indexes, it describes the participation of private operators in different services, including the mobile market, fixed internet, among others, commenting on the investments made by existing operators and showing the dynamics of the market.

The document addresses investment and new technologies describing the deployment of optic fibre in Peru since 2014 to 2022. It also comments on the National Optical Fibre Backbone Network (RDNFO), regional telecommunications projects, and the progress of the 5G network. It provides insights into the challenges faced, such as unsuccessful bids for the RDNFO and the initial stages of 5G deployment. Furthermore, it outlines investment opportunities in the sector, stressing the importance of staying informed about tenders and contracts related to the RDNFO and regional broadband projects. It suggests evaluating their progress and keeping an eye on the evolution of 5G technology for potential future opportunities.

CHAPTER 1

MAIN LEGAL FRAMEWORK

1.1 INTRODUCTION

The telecommunications sector is considered a highly relevant sector, considering that through its development, the governance mechanisms for the digital transformation can be improved, and access to basic services (education, health, financial inclusion) and international markets (electronic commerce) can be increased. The connection between the expansion of digital networks and economic development is consistently highlighted by international organizations and Peruvian authorities.

Accordingly, the sector has outlined plans to focus on developing the necessary infrastructure to improve the expansion of services to rural areas in the coming years; optimize regulatory management in telecommunications, and encouraging competition in the sector through the telecommunications regulatory body (OSIPTEL).

Peru ranks third in terms of telecommunications regulatory management in South America, according to the ICT Regulatory index, produced by the International Telecommunication Union (ITU).[1] However, the country faces great challenges to reach rural communities to provide services economically accessible to improve the quality life of the population.

1.2 LEGAL FRAMEWORK

The legal framework for the telecommunications sector in Peru is based on the Single Harmonized Text of the Telecommunications Law (Supreme Decree No. 013-93-TCC) and its regulation (Supreme Decree No. 020-2007-MTC).[2] In this regard, telecommunication services are classified into: (a) carrier services; (b) teleservices or final services; (c) broadcasting services; and (d) value-added services. The services, according to its use and nature, are classified as public services, private services, or broadcasting (private services of public interest).

The governing body for the telecommunications sector is the Ministry of Transport and Communications (MTC), which formulates policies and regulations for the sector; approves the National Telecommunications Plan; grants, renews and cancels concessions, authorizations, permits and licenses; administers and oversees the frequency spectrum and numbering; approves telecommunications equipment; and represents the State in relevant international organizations.[3]

The Supervisory Authority for Private Investment in Telecommunications (OSIPTEL) is the specialized regulatory agency in the telecommunications sector. OSIPTEL sets tariffs and quality standards/obligations for public utilities in the telecommunications sector; establishes norms and rules; promotes competition between telecommunications operators by reducing barriers to entry and reducing costs for consumers in case of a change of operator; defines infractions and sets sanctions; settles disputes between companies; and deals with user complaints.[4]

In addition to these provisions, Peru implemented several additional measures between 2013 and 2017 to promote the development of competition within the industry and to improve the conditions of access and service coverage in the country, as Table 1 shows.

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[1] See: https://www.itu.int/en/ITU-D/Regulatory-Market/Pages/RegulatorySurvey.aspx. Likewise, OSIPTEL has been the only Peruvian regulatory body to request a re-evaluation of its performance by the OECD based on the recommendations made in its first evaluation in 2018.

[2] For more information, see: https://www.osiptel.gob.pe/archivos/legislacion-en-telecomunicaciones/

[3] Regulations on the organisation and functions of the ministry of transport and communications.

[4] For more information, see: https://www.osiptel.gob.pe/informacion-institucional/funciones-del-osiptel/

Table 1: Legal framework of the telecommunications sector

TOPIC	LEGAL FRAMEWORK
Private Investment in Telecom	The Legislative Decree 702 declared of national interest the modernisation and development of telecommunications, within a framework of free competition and approved provisions to regulate the promotion of private investment. It guarantees the right of every person to use and provide telecommunications and to the secret of the communications. The law classifies the types of services and their use, defining the characteristics of the different services and the rules that govern them.[5]
Telecom opening policy	The policy guidelines for the opening of Peru's telecommunications sector are regulated by Supreme Decree No. 020-98-MTC, which establishes as priority objectives (i) the access and expansion of public telecommunications services to rural areas, (ii) promotion of competition and investment, the development of new services and technologies, and maximization of the efficient use of the radio spectrum.[6]
Number portability	The centralized database contains the information of all ported telephone numbers that must be synchronized with the local databases of the concessionaires, in order to ensure that calls are correctly routed after the execution of portability.[7] Currently, it is administered by Inetum España S.A.[8]
User protection	OSIPTEL implements regulations aimed at safeguarding user rights and interests within the telecommunications sector. These regulations encompass various aspects, including service quality standards, fair pricing, accessibility, and procedures for handling user complaints and grievances. By establishing and enforcing these rules, OSIPTEL ensures that telecommunications companies provide reliable, fair, and accessible services while protecting the rights and interests of users throughout the country.
Broadcasting services	The Radio and Television Law (Law 28278) establishes that public broadcasting services require a concession, while private broadcasting services require authorisations, permits and licences. Authorisations and licences are held only by legal persons incorporated and domiciled in Peru. Foreigners are not allowed to own authorisations or licences, directly or through a sole proprietorship.[9]
Connected Peru	Law 31809, Law for a connected Peru, seeks to implement progressively technological innovation with wide band internet and mobile internet to ensure better connectivity in rural areas of priority interest. The law requires an ex-ante regulatory impact assessment analysis and mandates OSIPTEL to carry out -in a 6-month period- a comprehensive review of the regulatory framework to simplify it, eliminating those regulations not in line with principles of efficiency, simplicity and proportionality.[10]

[5] According to article 44 of Legislative Decree 702. See: https://www.osiptel.gob.pe/media/pzfhekqy/dleg702-necesidad-publica-telecom-e-inversion.pdf
[6] See: https://www.osiptel.gob.pe/media/uo0jk1n3/ds020-98-mtc-lineamientos-apertura-mercado-telecomunicaciones.pdf
[7] According to article 2 of the Supreme Decree No. 016-2013-MTC.
[8] OSIPTEL has launched a selection process for a centralised database administrator. For more information, see: https://elperuano.pe/noticia/209999-osiptel-inicia-proceso-de-seleccion-de-administrador-de-base-de-datos-centralizada
[9] According to article 24 of Law 28278. For more information, see: https://www.gob.pe/institucion/mtc/normas-legales/9865-28278
[10] For more information, see: https://leyes.congreso.gob.pe/Documentos/2021_2026/ADLP/Texto_Consolidado/31809-TXM.pdf

2 SECTOR GROWTH OVERVIEW

2.1.1 INTERNATIONAL PERSPECTIVE

The 2022 Global System for Mobile Communications (GSMA) report on mobile internet connectivity highlights a global trend towards an increased access, but also reveals persistent challenges. By the end of 2021, 55% of the world's population was using mobile internet, a significant rise from 31% registered in 2014. Despite this, 400 million people still lacked mobile broadband coverage, predominantly in rural, poor, and sparsely populated areas.[11]

Low- and Medium-Income Countries (LMICs) saw progress, with half their population connected by 2021, but disparities persist. Economies with higher development levels had greater connectivity rates, exemplified by 83% usage in High Income Countries (HICs) compared to 20% in the Least Developed Countries (LDCs). Challenges to adoption include a lack of literacy and digital skills, impacting poorer, rural, older, and female populations. Access to relevant online content and services is pivotal for driving internet adoption. While high-income nations lead in 5G adoption, LMICs are catching up in 3G and 4G coverage. Bridging this gap remains crucial, especially for the 200 million people residing outside mobile broadband network coverage.[12]

2.1.2 DIGITAL CONNECTIVITY IN PERU

In early 2023, Peru's digital scenario reflects the country's changing technological trends. This is highlighted by strong internet usage, active social media participation, and improving connectivity speeds. The statistical data shown in Table 2 offers detailed insights into Peru's digital evolution, considering both its population demographics and technological advancements.[13]

Table 2: Internet penetration in Peru January 2023

INTERNET PENETRATION AND SOCIAL MEDIA USAGE[14]	
Internet Users	24.31 million (71.1% penetration)
Social Media Users	25.05 million (73.3% of the population)
Cellular Mobile Connections (users)	40.03 million (117.1% of the population)
INTERNET ADOPTION DYNAMICS	
Increase in Internet Users (2022-2023)	0.8%
Offline Population	28.9% of the population
INTERNET CONNECTION SPEEDS	
Median Mobile Internet Speed (Cellular Networks)	16.62 Mbps (13.6% increase)
Median Fixed Internet Speed	65.73 Mbps (55.5% surge)

Source: DATAREPORTAL - DIGITAL 2023: PERU

These figures depict a country with substantial internet (71.1% penetration) and social media usage (73.3% of the population), yet a considerable offline population remains. The surplus in mobile connections compared to the population (117.1%) suggests a high level of mobile device ownership or usage of multiple SIM cards per individual. In addition, the improvement in internet speed shows Peru is working on better digital infrastructure, and the surge in mobile and fixed internet speeds (increase of 13.6%) signifies a positive trend in connectivity enhancement, although more targeted investment is needed to increase optic fibre network necessary to bridge the gap for the offline population.

[11] Global System for Mobile Communications. 2023. The State of Mobile Internet Connectivity 2022. Available at: https://www.gsma.com/r/wp-content/uploads/2022/12/The-State-of-Mobile-Internet-Connectivity-Report-2022.pdf
[12] Ibidem.
[13] For more information, see: https://datareportal.com/reports/digital-2023-peru#:~:text=There%20were%2024.31%20million%20internet%20users%20in%20Peru%20in%20January,percent)%20between%202022%20and%202023.
[14] Ibidem

In Peru, the gender distribution within telecommunication services reveals an almost equal proportion between female and male users, with 50.5% and 49.5%, respectably. Demographically, the median age of users stands at 28.7 years, showcasing a diverse age range among consumers. These statistics portray a population that is predominantly urban, with a nearly equal gender distribution. The population structure leans towards younger age groups, particularly those between 25 to 44 years, indicating a relatively youthful demographic.

2.1.3 DIGITAL COMPETITIVENESS OF PERU WITHIN THE REGION

The development of telecommunications is crucial for Peru as it expands access to information and connectivity, reducing the digital divide and enabling broader participation in the digital economy. This boosts productivity, fosters innovation, and helps integrate remote communities, enhancing the country's competitiveness in the global context.

Accordingly, the World Digital Competitiveness Ranking elaborated by the Institute for Management Development (IMD) and Centrum PUCP, assessed countries' ability to adopt and leverage digital technologies in business, government, and society, focusing on three indicators related to the availability of telecom services (appropriate and widespread internet connection, among others).[15]

Overall, the resulting score shows that, in 2023, Peru ranks 56 out of 64 countries, with a score of 50.2, falling from 52.1 in the previous year (see Table 3). Peru has slightly improved in some areas, although it still needs to focus on more precise strategies to boost its digital competitiveness. Within the Latin American region, Chile leads in all recent years (64.8 in 2023), although most countries in the region have decreased in score. This is attributed to the lack of resources to support talent and also to the low technological development. Mexico and Peru decreased in their scores from 2023 to 2022, but they improved their position in the ranking in comparison to other Latin-American countries [16].

Table 3: Regional Digital Competitiveness Ranking 2023

POSITION	COUNTRY	SCORE (OVER 100)		
		2021	2022	2023
1	**Chile**	61.8	66.2	64.8
2	**Mexico**	48.7	54.7	51.3
3	**Peru**	47.2	52.1	50.2
4	**Brazil**	51.5	56.1	49.7
5	**Argentina**	43.6	50.2	46.3
6	**Colombia**	45.5	49.2	45.1
7	**Venezuela**	23.5	27.0	22.6

Source: Centrum PUCP.

2.1.4 TELECOMMUNICATION DEVELOPMENTS IN PERU

The development of the telecom sector has undergone a process of transformation since the privatization of the state-owned CPT-ENTEL in 1997, awarded to the Spanish firm Telefónica S.A., turning into one of the most dynamic in Peru. The telecommunications market in Peru is currently very open, with the continuous entry of new operators in the sector.[17] A testament to the relative low barriers to market-entry is the fact that Telefónica, a leading player, has been losing market share in key services as is the case of mobile services, due to the pressure of newer operators (see Table 4).

Table 4: Mobile Market Share

COMPANY	MARKET SHARE – MOBILE MARKET SEPT 2022	MARKET SHARE - MOBILE MARKET SETP 2023
Telefonica	30,1 %	27,5 %

[15] Centrum PUCP. 2023. World Digital Competitiveness Ranking 2023 Results. Available at: https://centrumthink.pucp.edu.pe/indices/ranking-de-competitividad-digital-mundial-resultados-2023/

[16] Ibidem.

[17] In the fixed broadband segment, there are also interesting movements as a result of the connectivity emergencies produced by the pandemic and the entry of new operators such as Redes Ópticas – Wi-Net and Fiberlux-Fiberline, which has been aggressively deploying fiber optics networks, to the point that in the first half of 2022 it dethroned Telefónica as the leader of that segment in Lima and Callao.

COMPANY	MARKET SHARE – MOBILE MARKET SEPT 2022	MARKET SHARE - MOBILE MARKET SETP 2023
Claro	29,9 %	30,4 %
Entel	22,6 %	22,9 %
Viettel	16,9 %	18,6 %
OMVs	0.5 %	0,5 %

Source: OSIPTEL. Financial Performance Analysis of the Telecom Sector

On the side of fixed internet services, the growth of high-speed fixed internet operators in the Peruvian market is evident. For instance, Group Win and Wow grew their market share by 4,9 and 6,75 percentage points respectively in a year. They are gaining market share in this service, amid a decrease in the participation of traditional operators, such as Telefónica, Claro and Entel (see Table 5).

Table 5: Fixed internet market share

COMPANY	MARKET SHARE – FIXED INTERNET SEPT 2022	MARKET SHARE – FIXED INTERNET SEPT 2023
Telefonica	54,1 %	42,5%
Claro	26,5 %	25,8%
Win Group	7,8 %	12,7%
Wow	2,58%	9,33%
Entel	2.8 %	2 %
Others	6,3%	7.6%

Source: OSIPTEL. Financial Performance Analysis of the Telecom Sector

According to OSIPTEL, from January to September 2023 (without considering equipment sales results), the joint income obtained by the operators in the sector increased 0.6% as compared to the same period in the previous year. The services with the highest increase in income between years 2022 and 2023 are shown in table 6. [18]

Table 6: Income of Telecommunications related firms3
(Million US$)

SERVICES	INVESTMENT JAN – SEP (Million US$)		
	2022	2023	Variation% 2023- 2022
Mobile Services	1.800	1.876	4,3%
Equipment sale	854	700	-18,1%
Fixed internet	523	565	8,1%
Pay TV	318	287	-9,8%
Data Transmission & Circuit Rental	161	172	6,9%
Other business lines[19]	227	219	-3,2%
Total	**3.882**	**3.819**	**-1,6%**
Income without equipment sales	3.027	3.119	3,0%

Source: OSIPTEL. Financial Performance Analysis of the Telecom Sector

In particular, highlights to consider include:

i. Mobile services increased 1.8%: among them, there is a 4.4% increase for ''post pago'' and "control" services in the last 2 years.
ii. Fixed internet increased 5.6%, thanks to more connections aided by the increasing availability of optical fibre.

[18] OSIPTEL (2023). *Analysis of the financial performance of the Telecommunications Sector from January to September 2023.* Available at: https://sociedadtelecom.pe/wp-content/uploads/2023/12/analisis-desempeno-finaciero-telecom+-enero-setiembre-2023.pdf

[19] Oher business lines contains information on ''interconnection'', ''fixed subscriber telephony'', ''long distance telephony'', ''public use telephony'', among others.

iii. Data transmission and circuits rent increased 4.4% due to the increased provision of these services to wholesalers and retailers.
iv. Sales of equipment declined 20%, due to lower demand during the period January-September 2023.
v. Paid TV services income decreased 12%, due to the reduction in connections of this service, and the increasing consumer preference towards streaming service platforms.

The income of the main firms, with the exception of Viettel, decreased between 2022 and 2023. Although performance varies between types of services (see Table 7).

Table 7: Income by firm 2022-2023

SERVICES	TELEFONICA	CLARO	ENTEL	VIETTEL
Mobile Services	-7,9%	5,3%	5,1%	8,1%
Fixed services	-14,0%	3,9%	-9,2%	11,5%
Equipment sales	-7,1%	-15,3%	-32,1%	-33,3%
Data transmission and circuit rents	7,6%	5,7%	n.d.	30,4%
Retail services	0,0%	5,8%	n.d.	-56,0%
Wholesale services	-9,3%	-11,5%	-9,2%	4,2%
TOTAL	-9,1%	-0,7%	-10,4%	5,1%

Source: OSIPTEL. Financial Performance Analysis of the Telecom Sector

Telecom operators show mixed results in terms of profitability in last two years: negative for Telefónica and Entel, while positive in the case of Claro and Viettel (see Table 8).

Table 8: Financial profitability by company 2022-2023

COMPANY	NET MARGIN (%)	
	September 2022	**September 2023**
Telefonica	-9.6%	-6,80%
Claro	9.8%	15.2%
Entel	-2.9%	-7.4%
Viettel	11.2%	13.3%

Source: OSIPTEL. Financial Performance Analysis of the Telecom Sector

CHAPTER 3

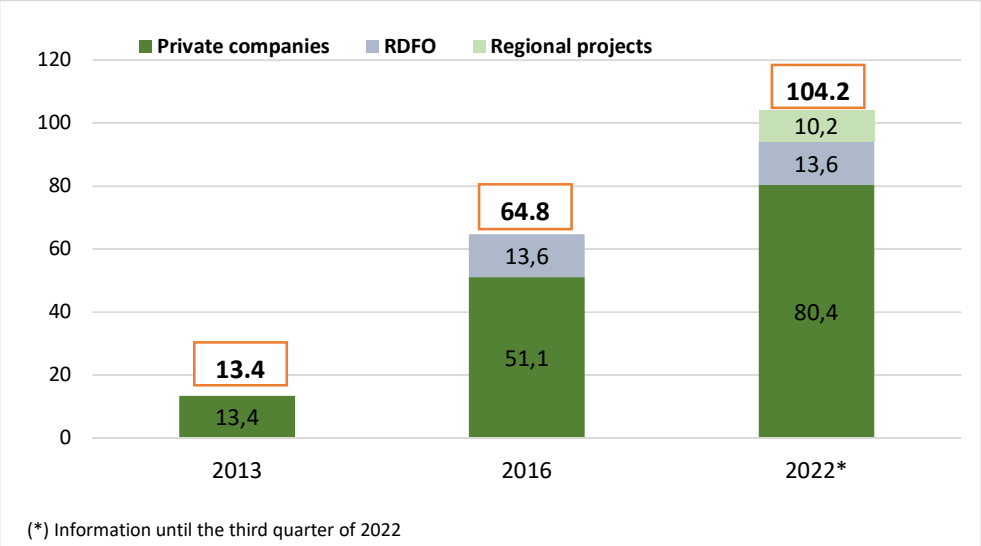
INVESTMENTS AND NEW TECHNOLOGIES

- **Fiber Backbone Deployment**

The provision of internet service requires a network that allows information to be transported at high speeds between cities (transport network). Technological convergence has allowed transport networks to be used for the provision of fixed and mobile telecommunications services. To this end, there are mainly three types of media: fibre optics, radio links and satellite links. Among them, fibre optics is the most suitable means of transport, due to its high data transmission capacity, which is complemented by other technologies in those areas where its deployment is not technically or economically viable. In this regard, in the last 10 years, Peru has seen a sustained and substantial deployment of high-capacity transport networks based on fibre optics. [20]

Accordingly, it is worth noting that the amount of fibre optics deployed nationwide went from 13.4 thousand km in the year 2013 to 104 thousand km as of the third quarter of 2022, mostly through private investment. (see Chart 1)[21]

Chart 1 Size of the optical fibre network in Peru (thousand km)



Source: MTC[22]

The increase in fibre optic deployment mainly through private investment, has allowed the development of the wholesale transport service, with an expanded offer of services to meet the connectivity needs in fixed broad band and mobile. Notwithstanding, according to Ministry of Transport and Communications (MTC), the deployment of fibre optic networks has allowed more districts to have at least one fibre optic node from which telecom operators can connect to deploy an access network. [23] MTC notes that, although a significant amount of fibre optic coverage is provided

[20] Ministry of Transport and Communications. Innovar para Conectar. Estrategias y medidas de regulación inteligente para reducir la brecha digital. 2023. P. 10-11.
[21] Ministry of Transport and Communications. Innovar para Conectar. Estrategias y medidas de regulación inteligente para reducir la brecha digital. 2023. P. 10-11.
[22] For more information, see: https://cdn.www.gob.pe/uploads/document/file/4341442/Innovar%20para%20conectar.pdf
[23] Ministry of Transport and Communications. Innovar para Conectar. Estrategias y medidas de regulación inteligente para reducir la brecha digital. 2023. P. 11-12.

by the private sector, the projects promoted by the State are the ones that made it possible to expand the scope of fibre optic networks at the national level by covering areas that are not profitable for private operators.[24]

- **National Optical Fibre Backbone Network** [25]

In June 2014, the MTC and Azteca Comunicaciones Perú S.A.C (from Mexico) signed a 20-year concession contract for the construction, operation, and maintenance of the National Optical Fibre Backbone Network (RDNFO). However, in July 2021, the concession contract was terminated, due to public interest issues. The main reason for the termination was that the price proposed to operators for using the RDNFO was above market levels, reducing the competitiveness of Azteca and to encouraging the development competitive networks by private operators. [26]

After this, the National Telecommunications Program (PRONATEL) was instructed to temporarily assume the operation of the RDNFO until January 2028[27]. However, the MTC has tried to concession the project between 2021 and 2022 without success[28]:

- Call on November 22, 2021: 3 companies submitted their offer, but there was no budget to continue.
- Call for applications on March 18, 2022: 3 companies submitted their offer, but it was declared void because the bidders did not meet the requirements.
- Call of June 8, 2022: it was cancelled by Memo 458-2022 of June 30, 2022.

In December 2023, the MTC declared that the operation of the RDNFO would be temporarily awarded to the winner company of a call; and in the summer of 2024, the MTC would commission PROINVERSIÓN with a bidding process to deliver the project to a private operator definitively.[29]

- **Regional telecommunications projects awarded by the State**

The Fondo de Inversión en Telecomunicaciones (today Programa Nacional de Telecomunicaciones-PRONATEL) commissioned PROINVERSION, since 2013, to tender 21 Regional Projects for the "Installation of Broadband for Connectivity and Social Development", with a total committed investment of US$ 1.9 billion, co-financed by the State and operated by private companies. The plan involves the deployment of broadband transport networks based on optical fibre (spanning over 30,000 kilometres), covering 1,530 district capitals and over 6,620 localities, starting from the distribution nodes installed by the RDNFO located in provincial capitals. It also includes the implementation of an IP-based wireless access network to provide broadband internet and intranet services. These regional projects will benefit nearly 4 million Peruvians, 7,348 educational institutions, 3,735 health establishments, and 566 police facilities. [30]

By 2020, four regional projects were operational (Lambayeque, Huancavelica, Apurimac, and Ayacucho), while 14 were in the implementation phase, and three contracts were terminated (Cajamarca, Piura, and Tumbes) and reformulated for re-tendering (see Table 9). [31]

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[24] Ministry of Transport and Communications. Innovar para Conectar. Estrategias y medidas de regulación inteligente para reducir la brecha digital. 2023. P. 11-12.

[25] For more information, see: https://www.congreso.gob.pe/Docs/comisiones2023/Ciencia/files/presentaciones/1ra_so_red_dorsal_nacional_de_fibra_%C3%93ptica_-_mtc.pdf

[26] For more information, see: https://www.congreso.gob.pe/Docs/comisiones2023/Ciencia/files/presentaciones/1ra_so_red_dorsal_nacional_de_fibra_%C3%93ptica_-_mtc.pdf

[27] By Ministerial Resolution No. 689-2021-MTC/01, PRONATEL was entrusted with the temporary operation of the RDNFO, either directly or through third parties, for up to three years. Subsequently, through Legislative Decree No. 1560, this temporary operation was extended until January 2028.

[28] For more information, see: https://www.congreso.gob.pe/Docs/comisiones2023/Ciencia/files/presentaciones/1ra_so_red_dorsal_nacional_de_fibra_%C3%93ptica_-_mtc.pdf

[29] For more information, see: https://elcomercio.pe/economia/mtc-estamos-por-sacar-un-concurso-para-encargar-transitoriamente-la-operacion-de-la-red-dorsal-nacional-noticia/

[30] For more information, see: https://portal.mtc.gob.pe/logros_redes_regionales.html

[31] For more information, see: https://www.gob.pe/institucion/pronatel/informes-publicaciones/366482-proyectos-regionales

Table 9: Regional Projects for the "Installation of Broadband for Connectivity and Social Development"

REGION[32]	CONTRACTOR COMPANY	CONTRACT SIGNING	INVESTMENT US$ MM	OPTICAL FIBRE LENGTH (KM)
Lambayeque	TELEFONICA	27/05/2019	58.4 MM	660
Huancavelica	GILAT	27/05/2015	97.2 MM	1297
Apurimac	GILAT	27/05/2015	82.6 MM	1224
Ayacucho	GILAT	27/05/2015	10.4 MM	1889
Tumbes	To tender			341
Piura	To tender			1946
Cajamarca	To tender			2209
Cusco	GILAT	29/12/2015	108.3 MM	2154
Moquegua / Tacna	Consorcio TR	09/05/2018	28.5MM	549 / 524
Ica	GILAT	27/06/2018	45.6MM	836
Tacna	Consorcio TR	09/05/2018	25.9MM	524
Lima	AMERICA MOVIL	19/03/2018	96.7MM	1797
Amazonas	GILAT	27/06/2018	107.9 MM	1255
Junin	Consorcio TR	09/05/2018	105.3 MM	1799
Puno	Consorcio TR	09/05/2018	131.0 MM	2719
Ancash	Consorcio YOFC	10/07/2019	121.7 MM	1908
Arequipa	Consorcio YOFC	10/07/2019	93.1MM	2694
Huanuco	Consorcio BANDTEL	27/05/2019	83.4 MM	1274
La Libertad	Consorcio YOFC	10/07/2019	128.5 MM	1556
Pasco	Consorcio BANDTEL	27/05/2019	64.9 MM	2045
San Martin	Consorcio YOFC	10/07/2019	68.40 MM	1231

Source: World Bank[33]

- **Progress in 5G Network**

In June 2019, the MTC concluded the rearrangement of the radio spectrum for frequencies of 2.5 and 2.3 GHz, and initiated the rearrangement of the 3.5 GHz frequency, intended for the 5G network[34]. This measure aims to bridge the digital gap faster, provide access to new technologies, expand existing service coverage and foster market competition[35]. It's worth noting that before 2019, the state directly allocated the spectrum to operators upon request, but currently, allocation occurs through bidding.

Currently, the 5G network coverage in the country is limited, and some providers have chosen to use other frequencies to begin developing this network. According to OSIPTEL, in the specific case of Lima, the connection time via 5G is less than 4%[36] of the total connection time, and only 20 areas have this technology. The remainder connections time corresponds to connections on 4G or 3G networks. The 3.5 GHz frequency is intended for 5G, but since the auction has not taken place yet, operators are using

[32] Contracts with Redes Andinas in Tumbes, Piura, and Cajamarca were expired.
[33] World Bank. Report 2: Scenarios and business models for the RDNFO and regional transport networks. 2018. Available at: https://cdn.www.gob.pe/uploads/document/file/493980/Informe_2_Banda_Ancha_Banco_Mundial.pdf
[34] For more information, see: https://elcomercio.pe/economia/negocios/telefonia-movil-significa-reordenamiento-espectro-noticia-648385-noticia/?ref=ecr
[35] For more information, see: https://www.gob.pe/institucion/mtc/noticias/22485-mtc-presenta-acciones-para-una-mejor-gestion-del-espectro-radioelectrico-que-permitira-llevar-internet-a-mas-peruanos
[36] The 4% refers to the total connection time in Lima using the 5G network, while the remainder corresponds to connections on 4G or 3G networks.

frequencies not specifically allocated for 5G but for 4G to offer this service, albeit in a preliminary or incipient manner. [37]

In this context, in April 2023, the MTC announced the pursuit of the best design for rearranging the 3.5 GHz frequency to prepare it for bidding. However, this activity has not concluded yet. Recently, the Minister of MTC indicated that in 2024, PROINVERSION will oversee the bidding for the development of the 5G band, while concurrently continuing the development of the rearrangement of the 3.5 GHz frequency.[38]

[37] For more information, see: https://gestion.pe/economia/tiempo-de-conexion-a-red-5g-no-llega-ni-al-4-en-lima-por-que-no-despega-noticia/?ref=gesr

[38] For more information, see: https://elcomercio.pe/economia/mtc-estamos-por-sacar-un-concurso-para-encargar-transitoriamente-la-operacion-de-la-red-dorsal-nacional-noticia/?ref=ecr

CHAPTER 4 INVESTMENT OPPORTUNITIES

The Peruvian State plans to generate short-term investments of approximately US$ 1.6 billion for concession projects for the AWS-3 and for the 2.3 GHz and 3.5 GHz (3,300-3,800 MHz) electric spectrum bands, which are fundamental in the consolidation of the 5G mobile generation. However, projections indicate that by 2025, approximately US$ 4.8 billion will be necessary to provide better quality public telecommunications services and progressively advance in the implementation of 5G technology throughout the country.[39]

In this regard, there is a need for greater investment in the telecommunications sector that is mainly related to the expansion of fibre optic services and 5G technology, including: (i) concessions of radio-electric spectrum bands, (ii) cellular base stations to implement 5G technology, and (iii) fibre optic networks.

As explained in the section 3:

- PROINVERSION would oversee a tender process to grant the operation and maintenance of the RDNFO for the implementation of fibre optic network in rural and sparsely populated areas, in the first quarter of 2024. Investors should do a proper follow-up of this project.

- The Regional Telecom Projects awarded by the State present opportunities to provide existing concessionaires with specialized equipment to meet their contractual obligations. There is also an opportunity to participate in the tenders of the three regional projects (Cajamarca, Piura and Tumbes) to be relaunched by the MTC.

- The investment for the provision of telecom services made by the main operators during the first three quarters of 2023 jointly increased by 10.7%, or US$44M more than the amount registered for the same period of 2022. Telecom operators are implementing fibre optics necessary for the transmission of data and provision of broadband internet services, as well as the expansion and improvement of their operations in 4G and 5G technologies.[40]Clearly, the dynamics observed in the sector with the entry of new players and their ability to gain market share in key services coupled with the increase in investment observed in the sector show that operators are confident about the market development.

- **"Conecta Selva" Program**

Conecta Selva is a program launched in June 2021 by MTC-PRONATEL to provide satellite internet to 1,316 public institutions, including 1,212 schools and 104 health posts in 1,034 localities in isolated areas in the regions of Amazonas, Loreto, Madre de Dios and Ucayali[41]. To achieve this objective, the institution signed, in 2021, a contract with the company Telespazio Argentina in order to install VSAT (Very Small Aperture Terminal) antennas in each location. The budget of the program is US$ 24 million, and seeks to provide a speed of up to 10 megabits per second (Mbps) for downloads and 2 Mbps for uploads to beneficiary institutions.[42] In August 2023, this program reached 395,348 satellite Internet connections, of which 97% correspond to schools and 3% to health posts in the beneficiary regions.

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[39] For more information, see: https://www.osiptel.gob.pe/portal-del-usuario/noticias/osiptel-se-requiere-invertir-mas-de-s-18-000-millones-al-2025-en-sector-telecomunicaciones-para-continuar-con-el-crecimiento-y-abrir-camino-al-5g/

[40] OSIPTEL. For more information see: https://www.osiptel.gob.pe/portal-del-usuario/noticias/inversiones-en-el-sector-telecomunicaciones-crecieron-10-7-al-cierre-del-tercer-trimestre-de-2023/

[41] For more information, see: https://www.elperuano.pe/noticia/222607-conecta-selva-genero-en-agosto-395348-conexiones-a-internet-en-colegios-y-postas-de-salud

[42] For more information, see: https://gestion.pe/economia/telespazio-instalara-conexiones-de-internet-en-escuelas-y-centros-de-salud-de-la-amazonia-noticia/?ref=gesr

\ CONCLUSIONS

- In Peru, there is still a significant connectivity gap, but the country counts with a regulatory framework to attract investments within a context of free competition. The entry of competitors into the market, either through state projects with private participation or through private investment, is encouraged to develop this sector.

- On the private sector side, during the first three quarters of 2023, investments corresponding to Telefonica, Claro, Entel, Viettel, Directv and Americatel jointly increased in 10,7% or an additional US$44 M compared to the amount registered in 2022 for the same period. This level of investment coupled with the dynamics observed within-sector competition gives positive expectations regarding future market development.

- As of September 2023, investments in mobile services and fixed internet maintained a growing trend, demonstrating private entities' efforts to expand their market coverage and meet the unsatisfied demand. The substantial growth in fibre optic coverage is also noteworthy, primarily driven by private investment.

- Peru shows substantial internet and social media usage, yet a significant offline population persists. Investing in initiatives that bridge this gap can unlock untapped market potential. There could be a focus on providing accessible and relevant online content and services, especially tailored for rural, older, and female demographics to boost internet adoption rates.

- The RDNFO (National Fibre Optic Network) is a highly significant project for the country's regional connectivity. Consequently, the government is improving conditions for an upcoming concession to be awarded in 2024 to a private operator, representing a significant long-term investment opportunity (the previous concession was for 20 years). Given the history of previous RDNFO bids and the situation of regional project contracts, staying informed about the tender processes and contracts is important. These events can offer significant opportunities for investors wishing to participate in the expansion of the telecommunications infrastructure in the country.

- In terms of 5G network infrastructure, Peru is at an early stage of development, presenting an opportunity for investors to participate in the upcoming tender by PROINVERSION. This tender aims to grant the 3.5 GHz frequency required for the development of this network. However, the progress made by the MTC in reorganizing this frequency should be considered.