STATISTICS
of the Telecommunications Sector
2023
Costa Rica

sutel
SUPERINTENDENCIA DE
TELECOMUNICACIONES

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INTRODUCTION

For more than a decade, the International Telecommunication Union [ITU] has promoted, in various forums and communications, the arrival of an era teeming with digital innovation that will permeate every aspect of our lives. An era of emerging technologies such as the Internet of Things [IoT], Big Data and Artificial Intelligence, among others, which require extensive Internet and data usage to properly implement and progress further.

This growing trend and peculiar fascination with data usage has been observed among Costa Ricans in previous statistics reports, demonstrating a change in the habits and preferences of users which, in turn, drives change and innovation in the offerings of telecom operators and service providers.

Notably, as shown in this statistics report, fixed and mobile Internet services continue to show an upward trend, in contrast to other telecommunication services. There are a total of 6 333 378 fixed and mobile Internet subscribers in the country, representing an increase of 225 763 subscriptions in relation to the previous year.

Likewise, in terms of revenue, this service increased by 2.8 % in 2023, reaching a total of 481 334 million colones. The revenue from data transfer services, however, nearly triples the revenue from mobile telephony services, the sector's second largest source of revenue.

Moreover, the demand indicators compiled by the Superintendency of Telecommunications [SUTEL] in 2019 and 2023, from the information collected in the ICT section of the National Household Survey [ENAHO as per its acronym in Spanish], reveal further changes in the market penetration of the different telecommunication services purchased by the national population.

Consequently, during the last 5 years, the percentage of dwellings with Internet service has reached a market penetration of over 80 %, and if compared to the percentage of users who are of 5 years of age or older, this indicator also exceeds 80 %.

In accordance with the aforementioned ICT section of the ENAHO, the device that Costa Ricans favor the most when connecting to the Internet is the cellular phone, representing 97.4 % of the survey responses, followed by laptops with 54.3 % of the responses, thereby demonstrating that the national population has fully embraced mobile telecommunication services. The survey further revealed that, in the last 3 months, the leading reason for Costa Ricans connecting to the Internet was social media interaction, followed by searching and accessing information on Google or other search engines, or watching movies and TV series, listening to music, and carrying out electronic funds transfers, via "SINPE Móvil", among others.

In spite of the remarkable progress made in the market penetration and usage of Internet services, however, many considerable challenges still remain. For example, in the case of fixed Internet services, Costa Rica continues to rank in the middle of the list of leading countries, lagging behind Norway, Switzerland, South Korea, Denmark and the Netherlands, showing a market penetration rate of 21.9 %, while the penetration rate in said countries exceeds 40 %.

A key factor in the evolution of fixed Internet usage by Costa Ricans was the deployment of optical fiber infrastructure, a technology that continues to show an upward trend in the domestic market. 203 414 kilometers of optical fiber were deployed in 2023, which represents an increase of 80 % in relation to 2022. This revealed that 47.5 % of fixed Internet subscriptions in the Costa Rican market are provisioned via fiber optic

technology, and further explains why 27 % of all fixed Internet subscriptions have Internet plans with speeds of over 100 Mbps. This is all evidence of an extremely promising transformation in consumer trends, as just two years ago, in 2021, this percentage amounted to only 14 %. In other words, in the span of two years, the share of subscribers with speeds of over 100 Mbps have nearly doubled.

This wave of change further demonstrated the importance that the emergence of more bundled service options has had in recent times, as these commercial solutions have greatly benefited from the competition in the market and clearly show that users prefer to purchase fixed Internet plans bundled with other services. Packages that bundle fixed Internet services and TV subscription services are the most popular, followed by triple bundle packages that offer fixed Internet services, TV subscription services, and fixed VoIP services.

Progress made in this sector

2023 revealed that the economic activity in Costa Rica continues to show an upward trend in relation to the years affected by the outbreak of the COVID-19 pandemic. Consequently, the Telecommunications Sector recorded a total of 732 363 million colones in revenue, which represented a ratio of total revenue to gross domestic product [GDP] of 1.8 %, which is practically identical to the percentage reported in 2022.

Likewise, the number of licensed telecom operators and service providers reached a total of 169 in 2023, which represents a growth of 3.7 % in relation to 2022.

A number of challenges must still be overcome, however, such as a more significant investment in the telecommunications sector, as this indicator showed a downward trend in 2023, falling from 0.4 % of the GDP in 2022 to just 0.3 % in 2023.

The workforce suffered from a similar trend, as the number of personnel hired to provide telecommunication services by operators and service providers fell by 494 employees, representing a decrease of 5 % in relation to 2022. The female population in the workforce was particularly affected, showing a downward trend of 10 % in relation to the previous year. This, unfortunately, revealed a reversal in the growth shown by this trend in recent years.

This information, and more, is available in this statistics report, which creates a space for thoughtful reflection and careful analysis of the commitments we have towards the industry, the government, and the stakeholders, so that our sector continues to push forward on the path to progress. I kindly encourage you to read this statistics report, which is of interest to all of us who work in the Costa Rican telecommunications industry.

In addition, I would like to express my deepest gratitude to the telecom operators and service providers that have contributed information, in a timely and opportune manner, so that this report could be prepared with the utmost promptness, quality and excellence.

Last but not least, I would like to take this opportunity to thank the General Directorate of Markets for its valuable contributions in coordinating the development of this statistics report, in addition to the General Directorate of Quality, the General Directorate of Competition, the General Directorate of FONATEL, the General Directorate of Operations and, of course, to all of SUTEL's collaborators that participated in this report, for their immeasurable commitment to carry out their tasks with the greatest of interest, effort and dedication, to the benefit of all users and everyone involved in the telecommunications sector.

Cinthya
Arias Leitón
Chairwoman of the Board

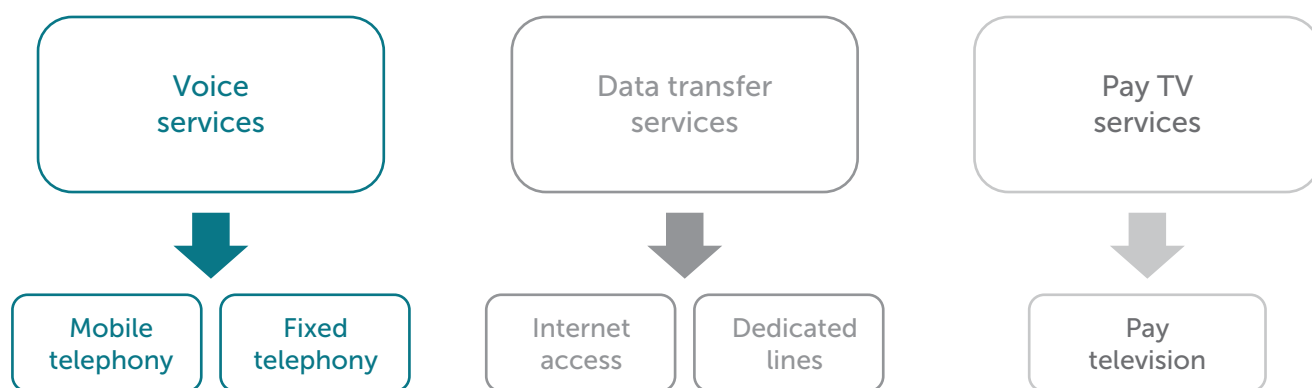# METHODOLOGY AND SCOPE OF THE REPORT

2023

DESCRIPTION OF TELECOMMUNICATION SERVICES INCLUDED IN THIS REPORT

For the purpose of standardizing and streamlining the way in which network operators and service providers share market information, a distinction has been made between the telecommunication services available to the public based on the characteristics of the deplo-yed network and the type of signal that the network transmits. Furthermore, this subdivision was carried out in accordance with the existing nomenclature for the granting of a License to Operate[1].

In view of the above, the services included in this report are broken down into three main categories, namely: voice services, data transfer services, and pay TV services. The categories and subgroups applicable to each case are further illustrated in Figure 1 below.

Figure 1. Costa Rica: General classification of services

Voice services	Data transfer services	Pay TV services
Mobile telephony / Fixed telephony	Internet access / Dedicated lines	Pay television

Source: SUTEL, General Directorate of Markets. Costa Rica, 2023.

Voice data is transmitted via networks and may include:

- **Mobile telephony services:** a service where users have two potential payment options available: prepaid and postpaid subscriptions; and

- **Fixed telephony services:** this service is outlined and defined in article 3 of the Regulation on the Telecommunications Service End User Protection Regime. For the purposes of this report, fixed telephony is further subdivided into three different types of services: Plain Old Te-lephone Services [POTS], VoIP or IP telephony services, and public telephony services. Article 3 of the aforementioned regulation stipulates that the provision of fixed telephony services shall include all types of access technologies, provided that the associated terminals do not support terminal mobility.

The data transfer service is outlined and defined in article 8, paragraph 75, of the Service Provision and Quality Regulations [RPCS as per its acronym in Spanish] and, for the purposes of this report, is further subdivided into the following two categories:

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[1] Resolution No. 9869 SUTEL-SCS-2028, RCS-374-2018: "Requirements for the processing of applications for the authorization and extension of Licenses to operate networks and provide telecommunication services to the public, and for the notices of service expansion and coverage areas". https://www.sutel.go.cr/sites/default/files/rcs-374-2018_requisitos_para_autorizaciones_prorrogas_ampliaciones_de_th_1.pdf

- **Internet Access Services:** A service offered by an Internet Service Provider (ISP), whereby subscribers are provided the necessary means to connect their computer equipment to the Internet.

- **Dedicated Line Services**: This service is defined as the transfer of data between two or more access points that are separated geographically. This data is transmitted via wired networks.

Lastly, while television content itself is not considered a telecommunication service [content], TV broadcast networks are included in this report since they are a means of offering telecommunication services over the Internet. This category includes:

- **Pay TV Subscriptions:** Satellite television, cable television, IPTV and MMDS television.

Table 1 further describes the merchandising methods and characteristics of the networks that support each of the services included in these three subgroups:

Table 1. Costa Rica: Telecommunication services included in this report

Category of telecommunication service	Forms in which the service is marketed	Characteristics of supported networks
Mobile telephony	Instant messaging (SMS), multimedia messaging (MMS), prepaid voice, postpaid voice	*Enables voice communication over wireless media.* *Consumer trends show a shift towards an all-IP architecture.*
Fixed telephony	Plain old telephone service [POTS], Voice over Internet Protocol [VoIP], Integrated Services Digital Network [ISDN]	Commonly known as a Public Switched Telephone Network [PSTN], it uses a set of information exchange centers and trunk links to establish temporary connections between two endpoints, otherwise known as circuit switching. Moreover, with the implementation of a softswitch and other active elements, the PSTN can be interlinked to any data network and provide Voice over IP.
Pay television	Satellite television, cable television, IP television and MMDS television	These services are provided over a variety of different technologies, such as satellite or cable systems supported by DOCSIS 2.0 and higher. They are characterized by the transmission or retransmission of television and audio signals to a group of users under a subscriber contract with the provider, and who compensate said provider monetarily. This requires a *Head-End Device*[1] for wired transmission, or a satellite station for wireless transmission, and give users access[2]. This network, which was mainly established for the provision of television services or subscription-based content, can also transmit data. For this reason, while it may not be a telecommunications service, it is worth analyzing its evolution.

[1] Head-End Device: the head-end of a telecommunications network is where the programming is gathered and the distribution network begins. Signals are typically received via satellite, broadcast stations, or even the Internet, and made available for distribution.

[2] Users/subscribers may be residential or commercial (business) customers.

Category of telecommunication service	Forms in which the service is marketed	Characteristics of supported networks
Date transfer	Wholesale data transfer	This refers to an operator of a telecommunications network that has the ability to carry data from other third-party operators or providers. In other words, the end services are brought about by different providers, seeing as the carrier leases the access to a logical or physical connection to its network so that other providers can offer telecommunication services to their end users.
	Internet access	A service offered by an Internet Service Provider (ISP), whereby subscribers are provided the necessary means to connect their computer equipment to the Internet.
	Wireless end-to-end links	The transfer of data between two or more access points that are separated geographically. The network through which the data is transferred is wireless.
	Leased lines	The transfer of data between two or more access points that are separated geographically. The network through which the data is transferred is wireless.
	Virtual Private Network (VPN)	A service in which a private data network is created using public telecommunications infrastructure, where the data is kept secure through different security and routing technologies.

Source: SUTEL, General Directorate of Markets. Costa Rica, 2023.

Properly authorized services that are not covered in this report include: geolocation, videoconferencing and trunking services, as these services require the granting of private radio frequencies and, therefore, the use of a private network with no connectivity to public telecommunication networks. As such, these services are not considered to be available to the general public.

METHODOLOGY

With the purpose of compiling the 2023 key performance indicators of the Costa Rican telecommunication sector, the individual processes developed by the General Directorate of Markets, the General Directorate of Competition, the General Directorate of Quality, and the General Directorate of FONATEL, have been unified –on the basis of the methods of application for each of the aforementioned categories– in order to determine the sector's general performance indicators (market behavior), the quality of the services provided, and the quality of FONATEL operations and projects.

Methodology applied to market behavior indicators

On the subject of the market behavior indicators of the telecommunication sector, the General Directorate of Markets is responsible for the data gathering process, which itself is carried out in three distinct phases, to wit: (i) data collection; (ii) review and analysis; and (iii) calculation of results.

Figure 2. Costa Rica: Data gathering process (collection, review and analysis, and preparation of indicators) of the Telecommunication Sector

Collection → Review & Analysis → Preparation of Indicators and Reports
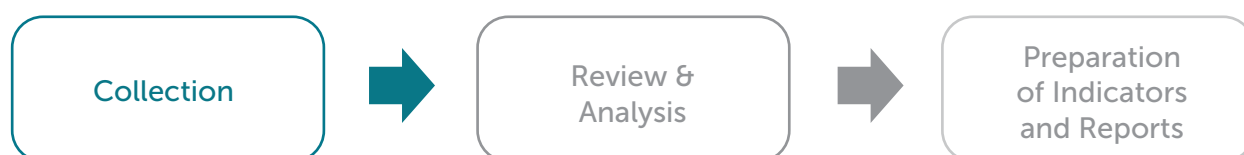
Source: SUTEL, General Directorate of Markets. Costa Rica, 2023

The diagrams presented below provide a summary of the main tasks to be performed in each of these three phases.

Data collection

Data collection is processed via the Telecommunication Indicators System [SITEL[2] as per its acronym in Spanish]. The information is e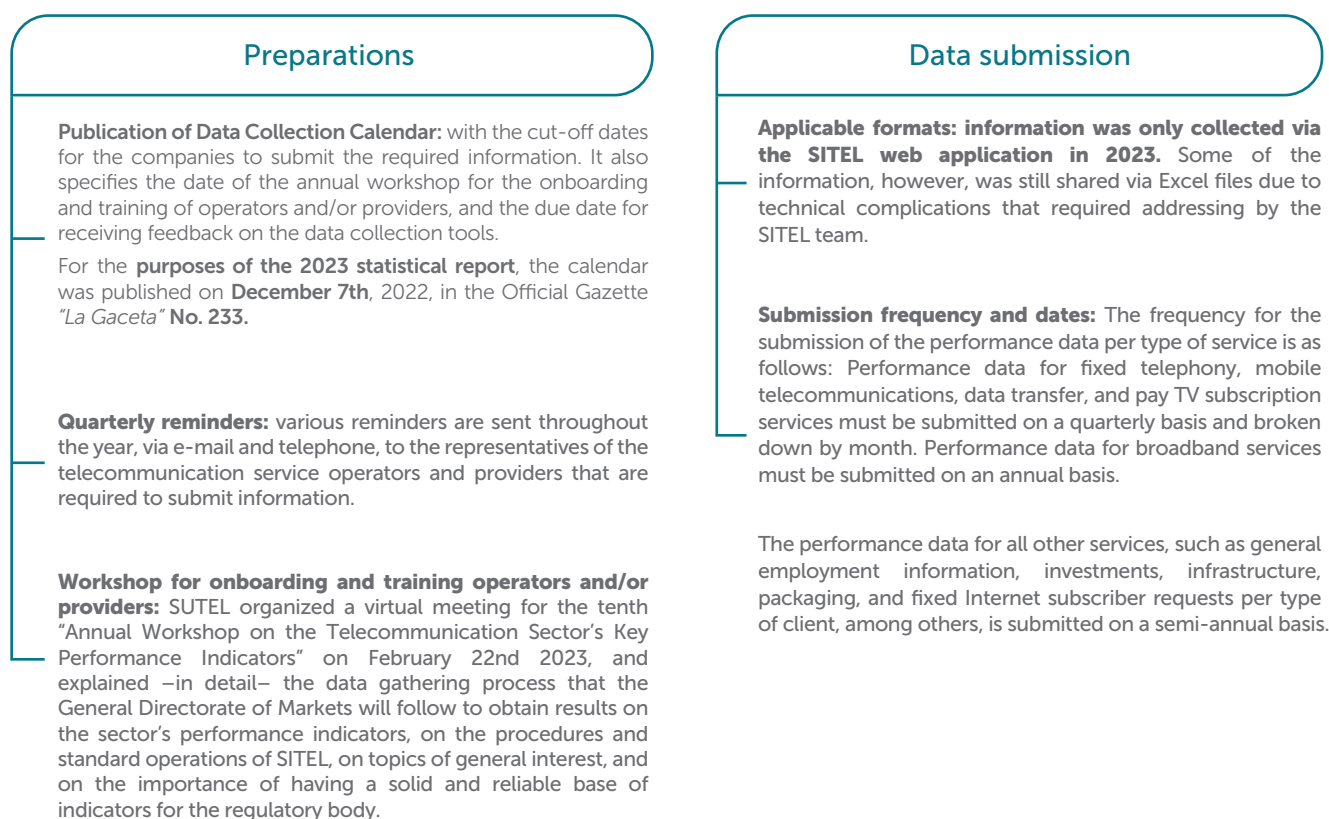ntered by each operator via a web portal that enables and streamlines data submission and report generation. It is worth mentioning that the information shared by each network operator and/or service provider is considered to be a sworn statement in relation to the reported service that they provide.

Figure 3. Costa Rica: Data gathering process for the compiling and construction of the Telecommunication Sector's key performance indicators

Preparations

Publication of Data Collection Calendar: with the cut-off dates for the companies to submit the required information. It also specifies the date of the annual workshop for the onboarding and training of operators and/or providers, and the due date for receiving feedback on the data collection tools.

For the **purposes of the 2023 statistical report**, the calendar was published on **December 7th**, 2022, in the Official Gazette *"La Gaceta"* **No. 233.**

Quarterly reminders: various reminders are sent throughout the year, via e-mail and telephone, to the representatives of the telecommunication service operators and providers that are required to submit information.

Workshop for onboarding and training operators and/or providers: SUTEL organized a virtual meeting for the tenth "Annual Workshop on the Telecommunication Sector's Key Performance Indicators" on February 22nd 2023, and explained –in detail– the data gathering process that the General Directorate of Markets will follow to obtain results on the sector's performance indicators, on the procedures and standard operations of SITEL, on topics of general interest, and on the importance of having a solid and reliable base of indicators for the regulatory body.

Data submission

Applicable formats: information was only collected via the SITEL web application in 2023. Some of the information, however, was still shared via Excel files due to technical complications that required addressing by the SITEL team.

Submission frequency and dates: The frequency for the submission of the performance data per type of service is as follows: Performance data for fixed telephony, mobile telecommunications, data transfer, and pay TV subscription services must be submitted on a quarterly basis and broken down by month. Performance data for broadband services must be submitted on an annual basis.

The performance data for all other services, such as general employment information, investments, infrastructure, packaging, and fixed Internet subscriber requests per type of client, among others, is submitted on a semi-annual basis.

Source: SUTEL, General Directorate of Markets. Costa Rica, 2023.

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2   A digital platform that integrates a web application and a business intelligence solution. SITEL is comprised of two interfaces; the first is for SUTEL employees, while the second is for a duly authorized person or persons, approved by each telecommunication service operator and/or provider, whereby the user can enter the information required to compile and construct the indicators in downloadable templates.

Year after year, with the purpose of guaranteeing the quality of the information gathered and shared by the companies in this sector, an annual workshop is organized and held to onboard and train the telecommunication service operators and providers. The workshop was hosted on a virtual platform in 2023. 121 representatives of telecom service operators and providers were in attendance, representing 54 different operators with active commercial offerings. In this instance, given that the meeting was held on a virtual platform, interactive presentations and surveys were implemented much to the satisfaction of the participants.

Table 2. Costa Rica: Superintendency of Telecommunications: Number of attendees who participated in the "Telecommunication Indicators Workshop", broken down by company, dated February 22nd, 2023

No.	Operator / Provider	Quantity	No.	Operator / Provider	Quantity
1	AMERICAN DATA NETWORKS	1	20	COOPERATIVA DE ELECTRIFICACIÓN RURAL DE GUANACASTE R. L. (COOPEGUANACASTE)	3
2	ANTARES WIFI S. A.	1			
3	AT&T SERVICIOS DE COMUNICACIÓN DE COSTA RICA S. A.	1	21	COOPERATIVA DE ELECTRIFICACIÓN RURAL DE SAN CARLOS R. L. (COOPELESCA R. L.)	1
4	BLUE SAT SERVICIOS ADMINISTRADOS DE TELECOMUNICACIONES S. A.	1	22	COOPERATIVA DE ELECTRIFICACIÓN RURAL LOS SANTOS R. L. (COOPESANTOS R. L.)	1
5	BNET LATINOAMÉRICA S. R. L.	1			
6	BT LATAM COSTA RICA	1	23	CRWIFI LTDA.	2
7	CABLE CARIBE S. A.	1	24	EMPRESA DE SERVICIOS PÚBLICOS DE HEREDIA (ESPH)	1
8	CABLE ZARCERO, S. A.	1	25	FIBERLINK SOCIEDAD DE RESPONSABILIDAD LIMITADA	2
9	CABLE VISIÓN DE OCCIDENTE S. A.	1	26	GOLD DATA COSTA RICA S. A.	1
10	CALLMYWAY NY S. A.	3	27	GRUPO KONECTIVA LATAM S. A.	1
11	CINEMA TURRIALBA S. A.	1	28	IDEAS GLORIS S. A.	1
12	CIRION TECHNOLOGIES COSTA RICA S. R. L.	1	29	INSTITUTO COSTARRICENSE DE ELECTRICIDAD	30
13	CLARO CR TELECOMUNICACIONES, S. A.	6			
14	COLUMBUS NETWORKS DE COSTA RICA SOCIEDAD DE RESPONSABILIDAD LIMITADA	1	30	JUNTA ADMINISTRATIVA DEL SERVICIO ELÉCTRICO MUNICIPAL DE CARTAGO (JASEC)	10
15	COMPONENTES EL ORBE S. A.	1	31	LIBERTY TELECOMUNICACIONES DE COSTA RICA LY S. A.	1
16	COMUNICACION CONSTANTE S. A.	1			
17	COMUNICACIONES METROPOLITANAS METROCOM, S. A.	1	32	COSTA RICA INTERNET SERVICE PROVIDER S. A., CRISP, (LUMINET)	2
18	CONSORCIO NACIONAL DE EMPRESAS DE ELECTRIFICACIÓN DE COSTA RICA R. L. (CONELÉCTRICA)	2	33	METRO WIRELESS SOLUTIONS DE COSTA RICA M.W.S. S. A.	1
			34	NAVINTEL S. R. L.	1
19	CONTINEX	2	35	NETCO	1

No.	Operator / Provider	Quantity	No.	Operator / Provider	Quantity
36	NETWORKING COMMUNICATIONS DE COSTA RICA S. R. L.	1	45	SERKAT	1
37	NYXCOMM S. A.	1	46	SERVICIOS DIRECTOS DE SATÉLITE, S. A. (SKY)	2
38	P.L.S.I. FIBERNET S. A.	1	47	SOLUCIONES TECNOLÓGICAS A SU MEDIDA D-APOS S. A.	2
39	R&H INTERNATIONAL TELECOM SERVICES S. A.	2	48	SPC INTERNACIONAL S. A.	1
40	RADIOGRÁFICA COSTARRICENSE S. A. (RACSA)	4	49	SPECTRUM NETWORK S. R. L.	1
41	RED Y COMUNICACIONES REYCOM DEL SUR S. A.	2	50	TELECABLE S. A.	1
			51	TELHARBOR	2
42	REDCOM	3	52	MILLICOM CABLE COSTA RICA S. A.	3
43	REDES INALÁMBRICAS TAYUTIC S. A.	1	53	TRANSDATELECOM S. A.	1
44	REDES INTEGRADAS CORPORATIVAS S. R. L. (REICO)	3	54	UFINET COSTA RICA, S. A.	2

Source: SUTEL, General Directorate of Markets. Annual Workshop on the Telecommunication Sector's Key Performance Indicators Costa Rica, 2023.

Review and analysis of information

Once the information is received via SITEL, it is then reviewed and analyzed by a team led by a group of professionals with the General Directorate of Markets [DGS as per its acronym in Spanish]. The actions taken as a result of this general verification process include: (i) determining the information's consistency over time; and (ii) preparing the final report. In the event of non-compliance, clarifications and/or corrections may be requested.

Regarding the different services, any inconsistencies are immediately communicated to the operator, first by e-mail, then by telephone and –finally– by delivery of a formal notice by the General Directorate of Markets. In the event that an operator requests a modification of the historical data, said operator is made aware that such a request must be brought to the attention of SUTEL's board of directors, and must be filed together with a formal justification.
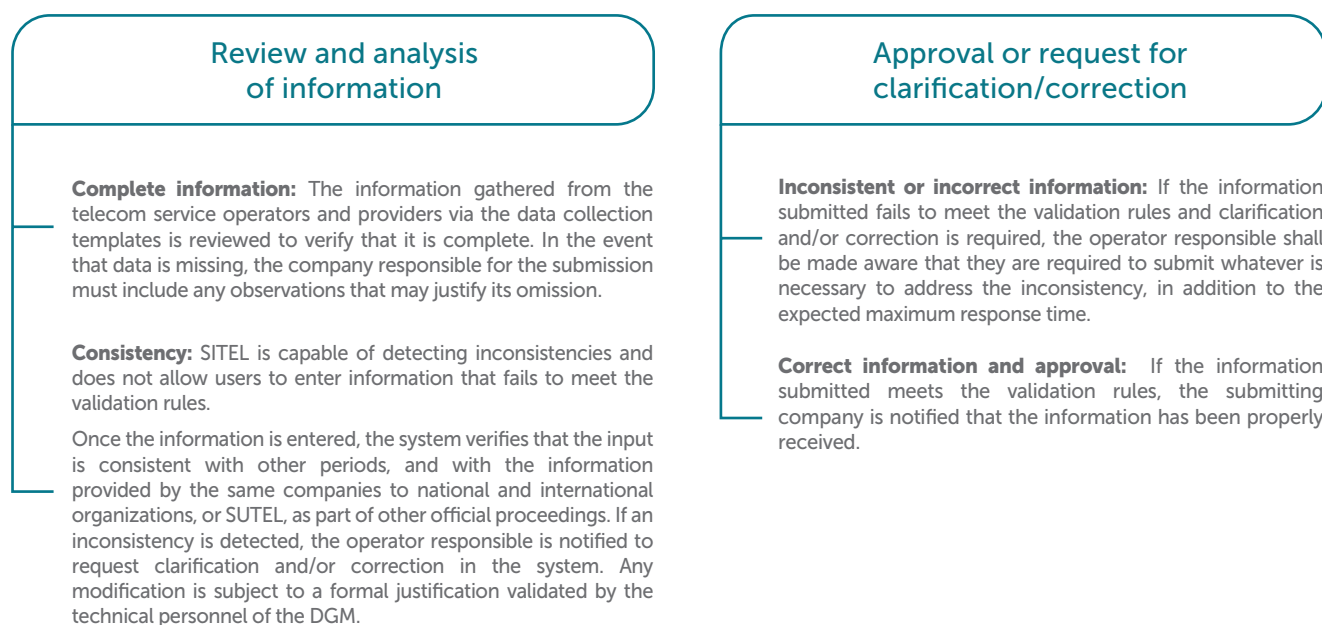
It is worth noting that SUTEL ensures and enforces compliance with the National Statistics System Act [Act No. 9694], wherein the body's obligation to provide information for statistical purposes is defined in article 19, to wit: "The information shared or provided, within the framework of the National Statistics Program [PEN as per its acronym in Spanish], shall always be timely and truthful under penalty of law."

It is further worth noting that, since SITEL was implemented in 2020 for the purpose of reporting and uploading information, the review process was further improved as the new system supports the setting of intrinsic validation rules that limit telecom service operators and providers from entering any information that is not consistent with the historically reported data. For example, these rules prevent users from entering information measured in a unit different than previously reported (thousands or millions of colones, Kbps or MB), among other restrictions.

As part of this phase, the analyst conducting the review must make sure to include information from the operators with the largest market share in order to guarantee that the statistical results are indeed representative of the sector.

Figura n.o 4. Costa Rica: Proceso de revisión y análisis de la información para construir los indicadores del Sector de Telecomunicaciones

Review and analysis of information	Approval or request for clarification/correction
Complete information: The information gathered from the telecom service operators and providers via the data collection templates is reviewed to verify that it is complete. In the event that data is missing, the company responsible for the submission must include any observations that may justify its omission.	**Inconsistent or incorrect information:** If the information submitted fails to meet the validation rules and clarification and/or correction is required, the operator responsible shall be made aware that they are required to submit whatever is necessary to address the inconsistency, in addition to the expected maximum response time.
Consistency: SITEL is capable of detecting inconsistencies and does not allow users to enter information that fails to meet the validation rules.	**Correct information and approval:** If the information submitted meets the validation rules, the submitting company is notified that the information has been properly received.
Once the information is entered, the system verifies that the input is consistent with other periods, and with the information provided by the same companies to national and international organizations, or SUTEL, as part of other official proceedings. If an inconsistency is detected, the operator responsible is notified to request clarification and/or correction in the system. Any modification is subject to a formal justification validated by the technical personnel of the DGM.	

Source: SUTEL, General Directorate of Markets. Costa Rica, 2023.

It is worth noting that, in addition to the review process, a number of meetings have been held during the year with different operators to clarify any concerns relating to the indicators in the data collection templates, and to share any observations that the Superintendency may have regarding the data provided.
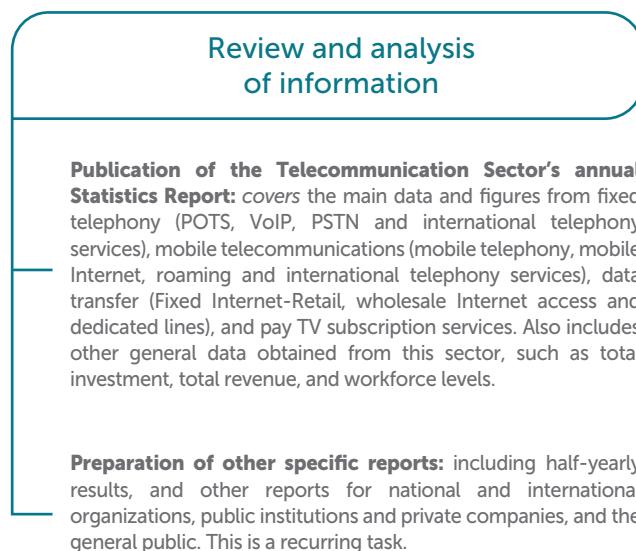
Calculation of results

This process is part of the Preparation of Indicators and Reports phase and uses the information provided by the network operators and telecom service providers, in addition to any other information obtained from national and international secondary sources (such as INEC, the ITU, the World Economic Forum, etc.). A half-yearly report is prepared and published on SUTEL's official website alongside this annual report.

The following reports were prepared in compliance with commitments to international organizations:

- OECD-BB-Portal-June2022_Preview_final, February 20th, 2023

- ITU World Telecommunication/ICT Indicators Short questionnaire, April 21st, 2023

- OECD Questionnaire on Communication Infrastructures and Services, May 23rd, 2023

- ITU Survey on Tariff Policies, June 1st, 2023

- Regulatel - Federal Institute of Telecommunications ["Instituto Federal de Telecomunicaciones (IFT-BID)"], October 12th, 2023

- ITU World Telecommunication/ICT Indicators Long Questionnaire, December 19th, 2023

Figure 5. Costa Rica: Result calculation process and measurement of key performance indicators of the Telecommunication Sector

> **Review and analysis of information**
>
> **Publication of the Telecommunication Sector's annual Statistics Report:** *covers* the main data and figures from fixed telephony (POTS, VoIP, PSTN and international telephony services), mobile telecommunications (mobile telephony, mobile Internet, roaming and international telephony services), data transfer (Fixed Internet-Retail, wholesale Internet access and dedicated lines), and pay TV subscription services. Also includes other general data obtained from this sector, such as total investment, total revenue, and workforce levels.
>
> **Preparation of other specific reports:** including half-yearly results, and other reports for national and international organizations, public institutions and private companies, and the general public. This is a recurring task.

Source: SUTEL, General Directorate of Markets. Costa Rica, 2023.

The information compiled in this report includes yearly and quarterly figures that allow for a detailed study of services in terms of revenue, data traffic and number of subscriptions. Moreover, in order to analyze the 2019-2023 period, geometric growth rates were calculated to analyze the indicators' year-over-year growth. It should be noted that the geometric growth model assumes a constant percentage growth over time, unlike the simple model, in which the rate of change increases by the same amount per unit of time measured. In other words, the basic model operates on the assumption that the variable of analysis grows by the same amount (quantity) per unit of time measured, while the geometric rate model assumes that the percentage of growth remains constant, and not the amount (quantity), per unit of time measured. As such, this model can be used for especially long periods. It should, consequently, be understood that whenever reference is made to the average annual growth rate, this means the geometric growth rate.

Summary of market behavior indicators included in this report

The definitions for each of the market's key performance indicators are listed below for the benefit of the reader. They are consistent with the definitions used by the International Telecommunication Union [ITU].

Table 3. Costa Rica: Fixed telephony service indicators, 2023

Indicator	Definition
Total active telephone landlines	Total number of active landlines that have been duly assigned to a customer, provided that said customer's service is not under definitive suspension (articles 12 and 34 of the Regulation on the Telecommunications Service End User Protection Regime [RPUF as per its acronym in Spanish]) and has registered at least one billable event during the last monthly billing cycle, or who has entered into a service agreement in full force and effect with the operator.
Active VoIP subscriptions/plans	Number of active landline subscriptions using Voice over Internet Protocol (VoIP). Should only include the total number of VoIP subscriptions that have generated inbound or outbound traffic during the last three months. Does not include: VoIP software applications (e.g.: Skype VoIP between two computers, or between a computer and a mobile device)
ISDN BRI and ISDN PRI service subscriptions	Total number of Integrated Services Digital Network (ISDN) subscriptions, which include: basic rate interface (BRI) services and primary rate interface (PRI) services.
Plain old telephone service [POTS] traffic	Network traffic from calls made through analog and/or digital telephone landlines.
Total VoIP traffic	Network traffic from calls made through Voice over Internet Protocol (VoIP) telephony service.
Inbound international telephone traffic	Total inbound traffic from an international network (off-net) to a national network (on-net).
Outbound international telephone traffic	Total outbound traffic from a national network (on-net) to an international network (off-net).
Total revenue from plain old telephone service [POTS] traffic (retail)	Refers to the revenue obtained from basic rate subscription plans + surplus + other line items associated with the provision of fixed telephony services.*
Total VoIP revenue (retail)	This indicator refers to the revenue obtained from basic rate subscription plans + surplus + other line items associated with the provision of VoIP services. *
Number of active fixed telephone subscriptions under individual plan or package deal categories	Fixed telephone subscriptions sold on an individual basis (not packaged with other services) and fixed telephone subscriptions sold alongside other telecommunication services as package deals.

Note: *The total gross revenue earned from the sale of telecommunication services by a provider offering services within the country; it does not include: taxes, devaluations, rebates, bonuses, discounts, canceled sales, and financial expenses, among others.
Source: SUTEL, General Directorate of Markets. Costa Rica, 2023.

Table 4. Costa Rica: Data transfer service indicators, 2023

Indicator	Definition
Active fixed Internet subscriptions (wired)	The sum total of active fixed Internet subscriptions using a wired connection (cable modem, xDSL, Fiber-to-the-Home [FTTH], Fiber-to-the-Building [FTTB], and other fixed wired technologies).
Active fixed Internet subscriptions (wireless)	The sum total of active fixed Internet subscriptions using a wireless connection (satellite, fixed WiMAX, and other fixed wireless technologies).

Indicator	Definition
Active mobile Internet subscriptions	The sum total of active mobile Internet subscriptions (prepaid and postpaid cellular data plans, Data Card, mobile WiMAX, and other mobile technologies).
Active dial-up Internet subscriptions	Number of active dial-up Internet subscriptions. This service connects to the Internet via a modem and fixed telephone line; it requires that the modem dial a phone number when Internet access is needed.
Dedicated line subscriptions (leased links)	Number of private dedicated line subscriptions. A dedicated line connects two locations for private voice and/or data telecommunication service. These lines do not use a special cable, and instead use a reserved circuit between two points. Businesses typically rent these types of lines to connect branch offices as they guarantee the necessary bandwidth for network traffic.
Internet traffic	Refers to the amount of data that is transmitted and downloaded (in gigabytes) by all users with access to the Internet service.
Total revenue from dedicated lines	The sum total of the revenue obtained from the provision of dedicated lines.
Maximum available download speed	The maximum Internet speed available for downloading data when given access to an Internet service.
Minimum available download speed	The minimum Internet speed available for downloading data when given access to an Internet service.
Total revenue from fixed (wired) Internet service	The sum total of the revenue obtained from the provision of fixed (wired) Internet service. *
Total revenue from fixed (wireless) Internet service	The sum total of the revenue obtained from the provision of fixed (wireless) Internet service. *
Total revenue from mobile Internet service	The sum total of the revenue obtained from the provision of mobile Internet service. *
Number of active fixed Internet subscriptions under individual plan or package deal categories	Fixed Internet subscriptions sold on an individual basis (not packaged with other services) and fixed Internet subscriptions sold alongside other telecommunication services as package deals.

Note: *The total gross revenue earned from the sale of telecommunication services by a provider offering services within the country; it does not include: taxes, devaluations, rebates, bonuses, discounts, canceled sales, and financial expenses, among others.
Source: SUTEL, General Directorate of Markets. Costa Rica, 2023

Table 5. Costa Rica: Mobile telephony service indicators, 2023

Indicator	Definition
Active postpaid mobile telephone subscriptions	Total number of postpaid mobile telephone subscriptions that pay a monthly subscription fee and register at least one billable event during the last monthly billing cycle, and whose service is not under definitive suspension in accordance with articles 12 and 34 of the RPUF.
Active prepaid mobile telephone subscriptions	Total number of prepaid mobile telephone subscriptions that register in their available service balance at least one billable event during the ninety calendar days prior to the last billing cycle, and that are part of the prepaid platform.

Indicator	Definition
Total capacity of installed mobile lines	The maximum number of mobile lines that can be connected. This includes previously connected mobile lines and other mobile lines available for ulterior connections, which also include any mobile lines used for the technical operation of the telephone exchange (test numbers).
Mobile traffic (voice calls, SMS and MMS)	The total traffic of the mobile telephone service.
Mobile network to proprietary fixed-line network traffic	Traffic from a proprietary mobile network (on-net) to a proprietary fixed-line telephone network (fixed-line network of the same operator).
On-net mobile traffic	Traffic from one mobile network to the same mobile network (on-net traffic).
Mobile network to other mobile network traffic	Traffic from a proprietary mobile network (on-net) to another mobile network (mobile network of another operator).
Other mobile network to proprietary mobile network traffic	Traffic from the fixed-line network of another operator (off-net) to a proprietary mobile network (on-net).
Proprietary fixed-line network to proprietary mobile network traffic	Traffic from a proprietary fixed-line telephone network to a proprietary mobile network (on-net).
Mobile network to other fixed-line network traffic	Traffic from a proprietary mobile network (on-net) to another fixed-line network (off-net).
Other fixed-line network to proprietary mobile network traffic	Traffic from the fixed-line network of another operator (off-net) to a proprietary mobile network (on-net).
Mobile network to international network traffic	Traffic from a proprietary mobile network (on-net) to an international network (off-net).
International network to proprietary mobile network traffic	Traffic from an international network (off-net) to a proprietary mobile network (on-net).
Mobile transit traffic	Traffic from off-net networks (other fixed-line, mobile and long-distance international networks) to other off-net networks (other fixed-line, mobile and long-distance international networks) that travels through a proprietary mobile network (on-net).
Total mobile voice traffic by telephone plan	The sum total of the mobile voice traffic broken down by telephone plan (prepaid or postpaid). To calculate this indicator, one must add the outbound on-net traffic and off-net traffic; that is to say: Total mobile voice traffic = Total on-net mobile voice traffic + Total off-net mobile voice traffic (outbound mobile voice traffic from a proprietary mobile network to other mobile networks, to a proprietary fixed-line network, to other fixed-line networks, and to international networks).
Postpaid on-net SMS traffic	SMS traffic between postpaid subscribers within the same mobile network.
Prepaid on-net SMS traffic	SMS traffic between prepaid subscribers within the same mobile network.
Postpaid off-net SMS traffic	Inbound and outbound SMS traffic sent and received by postpaid mobile telephone subscribers.
Prepaid off-net SMS traffic	Inbound and outbound SMS traffic sent and received by prepaid mobile telephone subscribers.
Domestic postpaid or prepaid SMS traffic	SMS traffic within a country sent from mobile devices under a postpaid or prepaid plan.
International postpaid or prepaid SMS traffic	International SMS traffic sent from mobile devices under a postpaid or prepaid plan.

Indicator	Definition
Postpaid on-net MMS traffic	MMS traffic between postpaid subscribers within the same mobile network.
Prepaid on-net MMS traffic	MMS traffic between prepaid subscribers within the same mobile network.
Postpaid off-net MMS traffic	Inbound and outbound SMS traffic sent and received by postpaid mobile telephone subscribers.
Prepaid off-net MMS traffic	Inbound and outbound MMS traffic sent and received by prepaid mobile telephone subscribers; does not include on-net MMS traffic.
Domestic postpaid or prepaid MMS traffic	MMS traffic within a country sent from mobile devices under a postpaid or prepaid plan.
International postpaid or prepaid MMS traffic	International MMS traffic sent from mobile devices under a postpaid or prepaid plan.
Outbound roaming telephone traffic	Total minutes of telecommunication traffic made by own customers in a local network roaming on foreign networks abroad; i.e.: when outside of the local network's service area (outbound roaming).
Inbound roaming telephone traffic	Total minutes of telecommunication traffic made by own customers in a local network roaming on foreign networks abroad; i.e.: when outside of the local network's service area (outbound roaming).
Outbound international SMS and MMS roaming traffic	Traffic generated by own mobile subscribers by sending SMS and MMS messages when outside of the local network's service area.
Inbound international SMS and MMS roaming traffic	Traffic generated by own mobile subscribers by receiving SMS and MMS messages when outside of the local network's service area (inbound roaming).
Inbound roaming data traffic (TB)	Data traffic sent (in TB) by own subscribers when accessing the Internet outside of the local network's service area (inbound roaming).
Outbound roaming data traffic (TB)	Data traffic received (in TB) by own subscribers when accessing the Internet outside of the local network's service area (outbound roaming).
Average price	The average price of a voice call from a mobile device (prepaid or postpaid).
Average price of a 1-minute mobile telephone local call (peak, on-net) to a cellular network	The price per minute of a peak rate local call made from a mobile telephone. This indicator is calculated by dividing the revenue from on-peak rate mobile calls made on-net (prepaid or postpaid) by the number of minutes (traffic) used by all mobile subscribers. Includes tax.
Average price of a 1-minute mobile telephone local call (off-peak, on-net) to a cellular network	The price per minute of an off-peak rate local call made from a mobile telephone with a prepaid or postpaid plan to a mobile telephone subscriber of the same network. This indicator is calculated by dividing the revenue from off-peak rate mobile calls made off-net by prepaid subscribers by the number of minutes (traffic) used by prepaid mobile subscribers. Includes tax.

Indicator	Definition
Average price of a 1-minute mobile telephone local call (off-peak, off-net) to a cellular network	The price per minute of an off-peak rate local call made from a mobile telephone with a prepaid or postpaid plan to a mobile telephone subscriber of another competing network. This indicator is calculated by dividing the revenue from off-peak rate mobile calls made off-net by prepaid subscribers by the number of minutes (traffic) used by prepaid mobile subscribers. Includes tax.
Average price of a 1-minute mobile telephone local call (peak, to fixed) to a fixed telephone network	The price per minute of a peak rate local call made from a mobile telephone with a prepaid or postpaid plan to a fixed telephone subscriber. This indicator is calculated by dividing the revenue from on-peak rate mobile calls made by prepaid subscribers to fixed networks by the number of minutes (traffic) used by prepaid mobile subscribers. Includes tax.
Average price of a 1-minute mobile telephone local call (off-peak, to fixed) to a fixed telephone network	The price per minute of an off-peak rate local call made from a mobile telephone with a prepaid or postpaid plan to a fixed telephone subscriber. This indicator is calculated by dividing the revenue from off-peak rate mobile calls made by prepaid subscribers to fixed networks by the number of minutes (traffic) used by prepaid mobile subscribers. Includes tax.
Average price of a 1-minute mobile telephone local call (peak, off-net) to a cellular network	The price per minute of a peak rate local call made from a mobile telephone with a prepaid or postpaid plan to a mobile telephone subscriber of another competing network. This indicator is calculated by dividing the revenue from on-peak rate mobile calls made by prepaid subscribers off-net by the number of minutes (traffic) used by prepaid mobile subscribers. Includes tax.
Average price of a 1-minute mobile telephone local call (weekend/evening, on-net) to a cellular network	The price per minute of a weekend/evening rate call made from a mobile telephone with a prepaid or postpaid plan to a mobile telephone subscriber of the same network. Must include tax. Otherwise, the applicable tax rate must be stated in a note. This indicator is calculated by dividing the revenue from weekend/evening rate mobile calls made by prepaid subscribers on-net by the number of minutes (traffic). Includes tax.
Average price of a 1-minute mobile telephone local call (weekend/evening, off-net) to a cellular network	The price per minute of a weekend/evening rate call made from a mobile telephone with a prepaid or postpaid plan to a mobile telephone subscriber of another competing network. This indicator is calculated by dividing the revenue from weekend/evening rate mobile calls made by prepaid subscribers off-net by the number of minutes (traffic). Includes tax.
Average price of a 1-minute mobile telephone local call (weekend/evening, to fixed) to a fixed telephone network	The price per minute of a weekend/evening rate call made from a mobile telephone with a prepaid or postpaid plan to a fixed telephone subscriber. This indicator is calculated by dividing the revenue from weekend/evening rate mobile calls made by prepaid subscribers to fixed networks by the number of minutes (traffic). Includes tax.

Indicator	Definition
Average price of SMS (on-net) for prepaid and postpaid mobile telephone subscribers	The price of sending a Short Message Service (SMS) message from a mobile telephone with a prepaid or postpaid plan to a mobile telephone subscriber of the same network. This indicator is calculated by dividing the revenue from SMS messages by the number of SMS messages sent on-net. Includes tax.
Average price of SMS (off-net) for prepaid and postpaid mobile telephone subscribers	The price of sending a Short Message Service (SMS) message from a mobile telephone with a prepaid or postpaid plan to a mobile telephone subscriber of the same network. This indicator is calculated by dividing the revenue from SMS messages by the number of SMS messages sent off-net. Includes tax.
Revenue from prepaid or postpaid mobile telephony services	Revenue obtained from prepaid or postpaid mobile telephony services. This indicator is calculated by adding the revenue from monthly subscriptions, the revenue from overage fees charged for extra minutes, and the revenue from other fees charged for the provision of mobile telephony services that do not stem from monthly subscriptions or overage fees, as is the case of fines for suspension and reconnection of service.
Revenue from prepaid or postpaid mobile voice traffic (on-net)	Revenue obtained from mobile voice traffic originating from a company's own mobile network (on-net) that is then redirected to a mobile telephone subscriber of the same network (on-net).*
Revenue from outbound prepaid or postpaid mobile voice traffic	Revenue obtained from mobile voice traffic originating from a company's own mobile network (on-net) that is then redirected to an off-net telephone subscriber (i.e.: to the company's own fixed network, to other fixed networks, to other mobile networks, or to other international networks).*
Revenue from monthly subscriptions or prepaid/postpaid minimum rate plans	Revenue obtained from the collection of recurring fees charged to mobile telephone subscribers for the provision of prepaid or postpaid telephone services.*
Revenue from overage fees charged to prepaid or postpaid mobile telephone subscribers	Revenue obtained from overage fees charged for extra minutes exceeding the limit of prepaid or postpaid minimum rate plans. Includes local and international call minutes that exceed the limit of the plan.*
Revenue from inbound prepaid or postpaid mobile voice traffic	Revenue obtained from mobile voice traffic originating off-net (i.e.: from a company's own mobile network, from other fixed networks, from other mobile networks, or from other international networks) that is then redirected to an on-net telephone subscriber (company's own fixed network).*
Revenue from international outbound prepaid or postpaid mobile voice traffic	Revenue obtained from mobile voice traffic originating from a company's own mobile network (on-net) that is then redirected to other off-net international networks.*
Revenue from international inbound prepaid or postpaid mobile voice traffic	Revenue obtained from traffic originating from an off-net international network that is then redirected to an on-net network (own mobile network).*
Revenue from SMS on-net messages sent by prepaid or postpaid mobile telephone subscribers	Revenue obtained from Short Message Service (SMS) messages sent by prepaid or postpaid mobile telephone subscribers in the same network.
Revenue from SMS off-net messages sent by prepaid or postpaid mobile telephone subscribers	Revenue obtained from Short Message Service (SMS) messages sent by prepaid or postpaid mobile telephone subscribers to other off-net subscribers in domestic and international networks.* *
Revenue from MMS on-net messages sent by prepaid or postpaid mobile telephone subscribers	Revenue obtained from Multimedia Message Service (MMS) messages sent by prepaid or postpaid mobile telephone subscribers in the same network. *

Indicator	Definition
Revenue from MMS off-net messages sent by prepaid or postpaid mobile telephone subscribers	Revenue obtained from Multimedia Message Service (MMS) messages sent by prepaid or postpaid mobile telephone subscribers to other off-net subscribers in domestic and international networks.
Revenue from MMS messages sent by prepaid or postpaid mobile telephone subscribers to domestic networks	Revenue obtained from Multimedia Message Service (MMS) messages sent to mobile telephone subscribers in domestic networks. Does not include messages sent via a computer to other mobile devices.*
Revenue from MMS messages sent by prepaid or postpaid mobile telephone subscribers to international networks	Revenue obtained from Multimedia Message Service (MMS) messages sent to mobile telephone subscribers in international networks. Does not include messages sent via a computer to other mobile devices. *
Revenue from SMS messages sent by prepaid or postpaid mobile telephone subscribers to domestic networks	Revenue obtained from Short Message Service (SMS) messages sent by mobile telephone subscribers to other subscribers in domestic networks.*
Revenue from SMS messages sent by prepaid or postpaid mobile telephone subscribers to international networks	Revenue obtained from Short Message Service (SMS) messages sent by mobile telephone subscribers to other subscribers in international networks.
Total revenue from MMS messages	Revenue obtained from Multimedia Message Service (MMS) messages sent to domestic and international networks. Does not include messages sent via a computer to other mobile devices.*
Revenue from outbound roaming telephone traffic (minutes)	Revenue obtained from a company's own mobile subscribers that make and receive calls when outside the country (outside home network), e.g.: when traveling abroad.*
Revenue from inbound roaming telephone traffic (minutes)	Revenue obtained from visiting (foreign) subscribers that make and receive calls within the country. This includes the revenue from visiting (foreign) subscribers earned by the network operators within the country.
Revenue from outbound SMS & MMS roaming traffic	Revenue obtained from a company's own mobile subscribers that send SMS and MMS messages when outside the country (outside home network).
Revenue from inbound SMS & MMS roaming traffic	Revenue obtained from visiting (foreign) subscribers that receive SMS and MMS messages within the country. This includes the revenue from visiting (foreign) subscribers earned by the network operators within the country.
Inbound roaming data traffic (TB)	Revenue obtained from visiting (foreign) subscribers that access the Internet within the country. This includes the revenue from visiting (foreign) subscribers earned by the network operators within the country.
Outbound roaming data traffic (TB)	Revenue obtained from a company's own mobile subscribers that access the Internet when outside the country (outside home network).
Wholesale revenue from mobile telephony services	Wholesale revenue obtained from the provision of fixed telephony services. This specifically refers to the revenue from call termination charges within a company's own mobile network. This indicator is calculated by adding the revenue from inbound traffic on a company's own mobile network.
Number of active mobile telephone subscriptions under individual plan or package deal categories	Mobile telephone subscriptions sold on an individual basis (not packaged with other services) and mobile telephone subscriptions sold alongside other telecommunication services as package deals.

Note: *The total gross revenue earned from the sale of telecommunication services by a provider offering services within the country; it does not include: taxes, devaluations, rebates, bonuses, discounts, canceled sales, and financial expenses, among others.

Source: SUTEL, General Directorate of Markets. Costa Rica, 2023.

Table 6. Costa Rica: Pay television service indicators, 2023

Indicador	Definición
Total number of multi-channel TV subscriptions	The number of multi-channel TV subscriptions that are terrestrially transmitted over a Hybrid Fiber-Coaxial (HFC) network. These networks support the provision of other telecommunication services.
Total number of multi-channel Direct to Home (DTH) satellite antenna TV subscriptions	The number of multi-channel TV subscriptions that are transmitted to a home satellite antenna that can receive television broadcasting directly from an operator's communications satellite.
Total number of multi-channel IPTV subscriptions	The number of multi-channel TV subscriptions that are transmitted via broadband connections using the IP protocol.
Total number of multi-channel TV subscriptions using the Multichannel Multipoint Distribution Service (MMDS)	The number of multi-channel TV subscriptions that are transmitted via the Multipoint Microwave Distribution Service (MMDS), whereby signals are wirelessly transmitted to the end user. This service supports the provision of other telecommunication services.
Revenue from TV subscription services (includes revenue from subscriptions, installations, basic plans and added value)	The total revenue earned from the provision of TV subscription services before any deductions (including taxes, returns, rebates, bonuses, discounts, and canceled sales, among others) by a provider offering services within the country.*
Number of active TV subscriptions under individual plan or package deal categories	TV subscriptions sold on an individual basis (not packaged with other services) and TV subscriptions sold alongside other telecommunication services as package deals.

Note: *The total gross revenue earned from the sale of telecommunication services by a provider offering services within the country; it does not include: taxes, devaluations, rebates, bonuses, discounts, canceled sales, and financial expenses, among others.
Source: SUTEL, General Directorate of Markets. Costa Rica, 2023.

Table 7. Costa Rica: General service indicators, 2023

Indicador	Definición
Total telecommunication staff	Total number of (full-time and outsourced*) staff employed by telecommunications network operators and service providers in the country for the provision of telecommunication services. Does not include personnel employed in national broadcasting networks, if said networks only provide traditional broadcasting services. *Includes outsourced personnel if and only if they are trained as specialists in the provision of telecommunication services [ITU].

Indicador	Definición
Total outsourced telecommunication staff	Total number of outsourced staff employed by telecommunications network operators and service providers in the country for the purpose of providing telecommunication services. It is worth noting that outsourced personnel must be trained as specialists to apply, otherwise the data will not form part of the indicator (i.e.: cleaning staff, marketing, security, etc.). Does not include personnel employed in national broadcasting networks, if said networks only provide traditional broadcasting services. In the event that the number of outsourced employees is unknown, please provide an approximate number of outsourced personnel per activity.
Female telecommunication staff	The number of (full-time and outsourced*) telecommunication staff that are female. *Includes outsourced personnel if and only if they are trained as specialists in the provision of telecommunication services.
Total semiannual investment in telecommunication services	This is the gross capital expenditure incurred over the last 6 months in connection with tangible and intangible assets, by a company that provides telecommunication services in the country, in the interest of acquiring and/or improving properties, factories and networks. **INCLUDES**: *The acquisition of non-tangible assets, such as: intellectual property, software, licenses and patents (see ID G8). *Expenses related to the acquisition of facilities, or from the expansion of preexisting facilities, that are expected to be used for long periods of time. **DOES NOT INCLUDE:** *Operating expenses from day-to-day activities. *Research and Development [R&D] expenses. *Radio frequency spectrum license fees (see ID G8). *Expenses from software and telecom equipment intended for internal use [ITU]. **NOTE:** In the event of amounts expressed in a currency other than colones, the amount shall be converted to colones using the exchange rate of the Central Bank of Costa Rica as reported at the close of each month during the fiscal year. In the event that the expense is shared in the provision of a service other than a telecommunication service, the corresponding share of expense shall be estimated. In the event that the expense is recorded as credit, the real value of the purchase shall be recorded.
Kilometers of optical fiber	The number of kilometers of fiber optic cables installed to date. **NOTE:** Does not include infrastructure intended for own use.
Number of active subscriptions sold under different models (individual plans and double, triple and quadruple packages)	The number of telecommunication service subscriptions sold on an individual basis (not packaged with other services) and subscriptions sold alongside other telecommunication services as package deals.

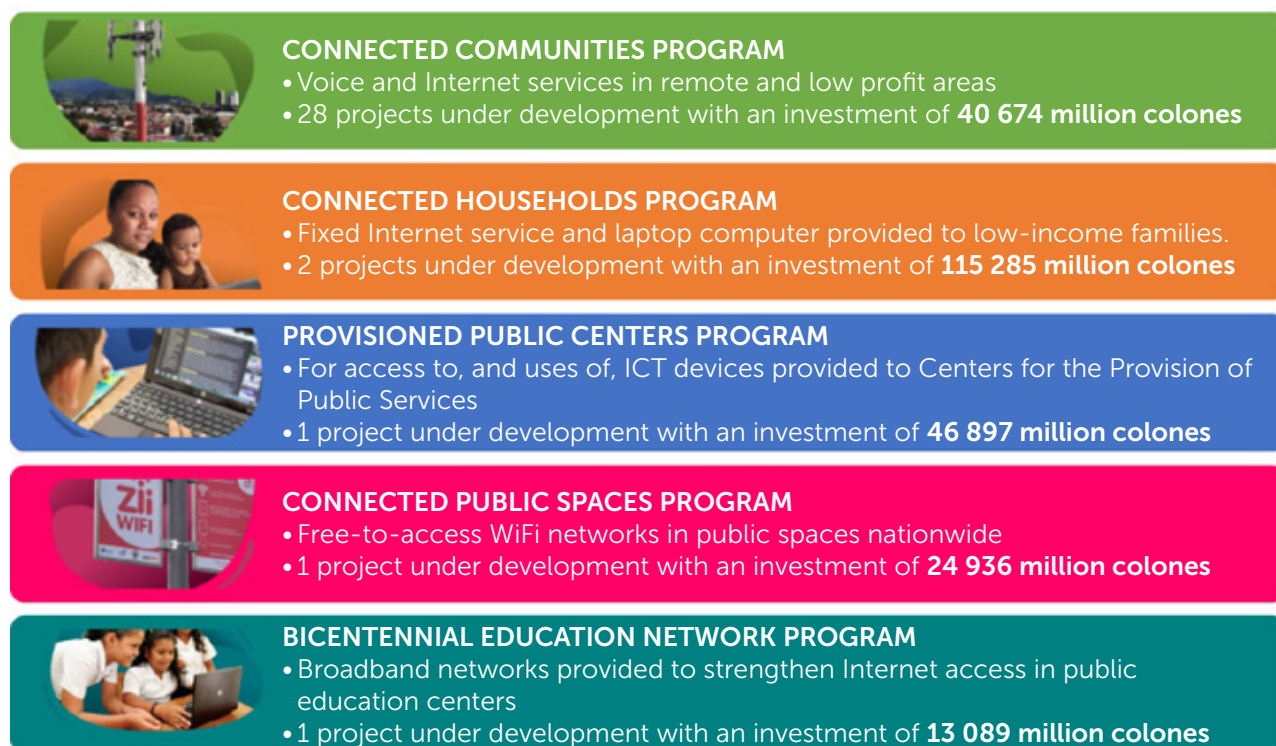Source: SUTEL, General Directorate of Markets. Costa Rica, 2023..

Methodology applied to the monitoring and evaluation system of FONATEL programs and projects

The General Telecommunications Act [Act No. 8642; articles 31 to 40, and Transitory Provision VI) authorizes SUTEL to develop projects that guarantee the access to, and the use of, telecommunication services by vulnerable populations, or by populations that reside in low economic areas. This is achieved through the use of resources from the National Telecommunications Fund [FONATEL], in pursuance with the objectives established in the aforementioned Act, and in accordance with the goals and priorities defined in the National Telecommunications Development Plan [PNDT].

In order to determine the scope of the programs and projects, which are being developed with FONATEL resources, regarding universal access, universal service, and solidarity, SUTEL created, on the basis of the goals established in the PNDT, the Annual Project and Program Plan [PAPyP as per its acronym in Spanish] to plan, organize, monitor and evaluate these programs and projects.

Five programs were financed with FONATEL resources in 2023. One of these program's projects is currently in the "in-planning" phase, while four others have projects in the "in-progress" phase, and two have projects in the "completed" phase[3]. These five programs together make up the 9 goals developed in furtherance of the 2022-2027 PNDT. Figure 6 lists all the programs under development with FONATEL resources.

Figure 6. Costa Rica: Portfolio of programs in development[4] with FONATEL resources in 2023

CONNECTED COMMUNITIES PROGRAM
- Voice and Internet services in remote and low profit areas
- 28 projects under development with an investment of **40 674 million colones**

CONNECTED HOUSEHOLDS PROGRAM
- Fixed Internet service and laptop computer provided to low-income families.
- 2 projects under development with an investment of **115 285 million colones**

PROVISIONED PUBLIC CENTERS PROGRAM
- For access to, and uses of, ICT devices provided to Centers for the Provision of Public Services
- 1 project under development with an investment of **46 897 million colones**

CONNECTED PUBLIC SPACES PROGRAM
- Free-to-access WiFi networks in public spaces nationwide
- 1 project under development with an investment of **24 936 million colones**

BICENTENNIAL EDUCATION NETWORK PROGRAM
- Broadband networks provided to strengthen Internet access in public education centers
- 1 project under development with an investment of **13 089 million colones**

Source: SUTEL, General Directorate of FONATEL, Costa Rica, 2023.

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[3]   The Provisioned Public Centers Program had one or more projects in the "in-planning" phase in 2023. The programs with projects in the "in-progress" phase are: the Connected Communities Program, the Connected Households Program, the Connected Public Spaces Program and the Bicentennial Education Network Program. The programs with projects in the "in-closing" phase are: the Provisioned Public Centers Program and the Connected Communities Program (Pacuarito Project and Roxana Project).

[4]   Includes all programs with projects, under development with FONATEL resources, in any phase of the development life cycle; namely: the "in-initiation", "in-planning", "in-progress", and "in-closing" phases.

It is worth mentioning that the development life cycle of a project in a FONATEL program consists of four phases, as detailed below:

a) **In-initiation:** the process of defining a new project, whereby its value and feasibility are measured. This involves the reception and evaluation of proposed initiatives, the prefeasibility study, the development of a pre-project outline, and the issuance of a development order [ODS as per its acronym in Spanish] or the filing of articles of incorporation for the implementation of the new project.

b) **In-planning:** the process of determining the scope of the project and defining the course of action required to achieve the proposed objectives. This involves the preparation of the forms required for the adjudication process, whereby the provider that will be responsible for the execution of the project is selected, the socioeconomic study, the development of the financial scheme, the development of the Project and Program plans, and the adjudication to the operator or service provider who wins the bid. This phase consists of the preparation of forms and the bidding/adjudication process.

- Formulation: this only includes projects in the "in-planning" phase; it involves everything from the preparation of the development order [ODS] to the preparation of the request for proposal [RFP] document.

- Bidding / adjudication: this only includes projects in the "in-planning" phase; it involves everything from the initiation of the bidding process to the conclusion of the adjudication process, whereby the winning bidder is selected.

c) **In-progress:** the process of executing or developing a project in accordance to the scope of work defined in the program and project plans (in-initiation phase), and the process of controlling and monitoring a project's progress and general performance (including payment management, qua-

lity control, risk and change management, and monitoring of product delivery). This phase starts once the project has been awarded to a network operator or service provider and ends once the project is successfully completed. This phase consists of the following two processes: execution/reception and production.

- Execution / Reception: this only includes projects in the "in-progress" phase; it involves everything from the initial development of the project, including the adjudication to the winning bidder, to the reception of the final product. Includes the reception and approval of infrastructure and equipment.

- Production: this only includes projects in the "in-progress" phase; specifically, projects in operation (provision of services). It involves everything from the first operation of the infrastructure to the completion of the contract.

d) **In-closing:** the process of completing and delivering a project. This involves the finalization and completion of contracts, and the preparation of the project closing documentation.

In the framework of the phases defined above, and as part of the control, monitoring and evaluation processes of the programs under development with FONATEL resources, two types of indicators are defined, developed, compiled and analyzed; namely: (i) operational indicators (which measure a project's progress), and (ii) assessment indicators (which estimate the effect a project will have on the target population, in addition to the perception that a beneficiary of the program may have). This report only covers the operational indicators of the programs with projects in the "In-progress" phase.

It should be noted that the general results pertaining to the Telecommunication Sector that are reported and analyzed in the sections corresponding to each type of service covered in this report include, implicitly, all the data for programs and projects financed with FONATEL resources up to the cut-off-date and, therefore, this data does not need to be included in order to have a complete view of the sector.

Operational indicators of FONATEL programs

Operational indicators measure the progress of goals set forth in the PNDT of each program, and the overall progress of each project. In other words, they provide information regarding the performance of the services provided, the development of infrastructure, and the provision of support devices and products[5], on the basis of each initiative and program developed with the National Telecommunications Fund [FONATEL] managed by SUTEL. The compilation and analysis of these indicators is carried out on a monthly basis via reports made by the trustee of the trust and the mana

gement units[6] of the pertinent programs and projects, in accordance with clause 14, section d.4, of the trust agreement.

Operational indicators are subdivided into four categories (see Figure 7), namely: (i) "achievement of goals" to monitor the progress of goals set forth in the PNDT in force; (ii) "management" to monitor the operational progress of the project; (iii) "beneficiaries" to quantify the populations that have benefited from the projects and programs; and (iv) "financial" to measure how well the Fund's resources were executed in the development of project and programs aimed at reducing the digital divide.

Figure 7. Costa Rica: FONATEL indicators in 2023
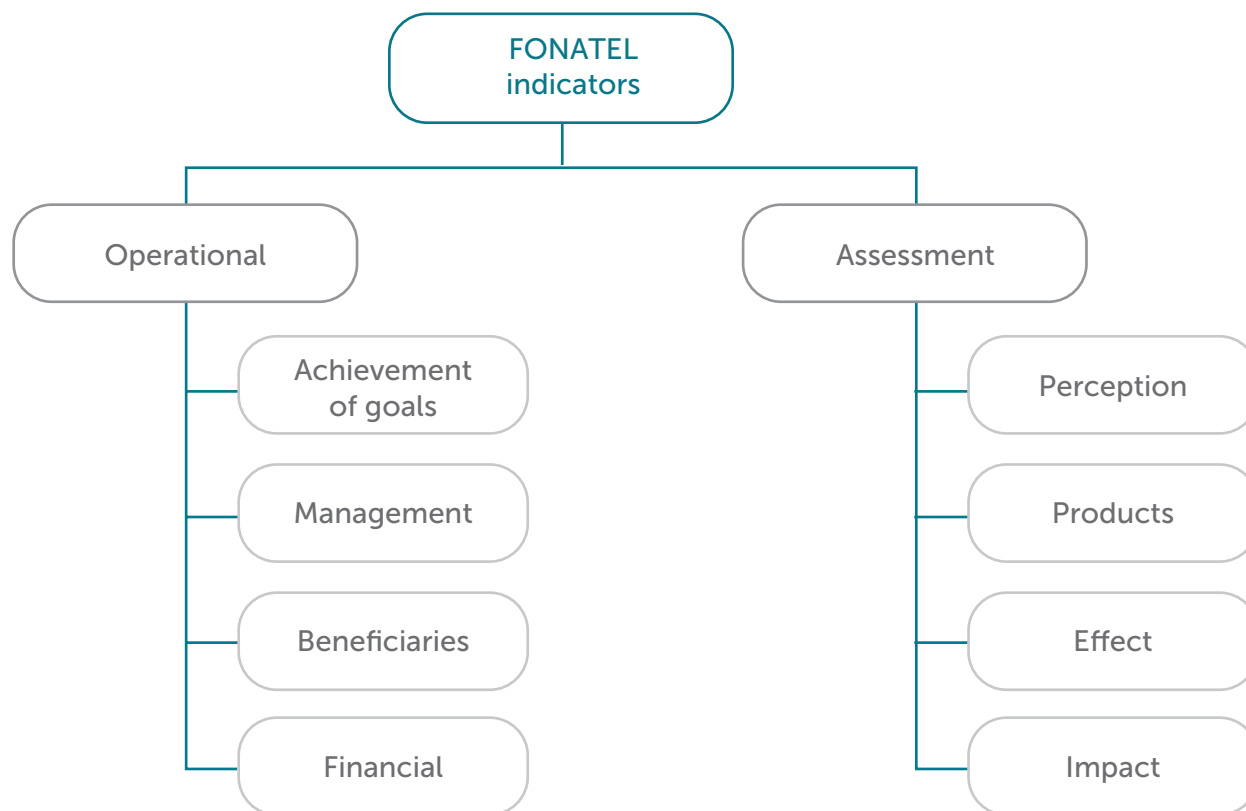
Fuente: SUTEL, Dirección General de FONATEL, Costa Rica, 2023.

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[5] Support products are defined as: devices, equipment and/or instruments that enable access to, and use of, ICTs and products designed to promote the autonomy of people with disabilities.

[6] Management Unit: an auxiliary body of the trust, comprised of a team of professionals or specialists hired by the trustee to provide support in the required technical areas pertaining to the projects and programs under development with trust funds. With respect to the programs in the "In-progress" phase, the management units are in charge of the following firms: Ernst & Young, Price Waterhouse Coopers, and the SPC-NAE consortium.

The Logical Framework Approach[7] and the Results Chain[8] methods were used in the compilation of the operational indicators to ensure that programs, projects, and their associated actions are well aligned with the objectives and goals of public policy, as established in the PNDT.

This methodology involves templates for recording information and a catalog of indicators developed in conjunction with the respective management units. The indicators' templates are completed by the management units and are sent on a monthly basis to the General Directorate of FONATEL by the trustee of the trust. The Directorate's technical team reviews the historic data, taking into account the specific details provided by the trustee in the monthly management reports of the programs and projects approved by SUTEL's board of directors, and in the monthly follow-up meetings with the trustee and the management units. Additional controls are then implemented, based on the visits made to sites that are covered and the information requests made by the institutions involved in the execution of the project.

In addition, the General Directorate of Markets verified the indicators in accordance with the provisions assigned by SUTEL's board of directors in pursuance with agreement 0-12-054-2021 (07336-SUTEL-SCS-2021), dated August 9th, 2021.

For the purposes of presentation and comprehension, the results of FONATEL indicators are analyzed in the two following groups:

- **Aggregate results:** results based on indicators that measure, in a general and aggregated manner, the joint execution of programs and projects financed and developed within the framework of FONATEL.

- **Results per program:** the performance results of each of the programs and projects financed with FONATEL; these results measure the status and progress of each of the projects under development.

The following is an excerpt from FONATEL's catalog of operational indicators.[9]

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[7]   The Logical Framework Matrix is a four-row by four-column instrument that summarizes the most important aspects of a project. Columns: summary of objective and activities, indicators (specific results to be achieved), means of verification, and assumptions (external factors involving risk). Rows: components of the Analytical Project Structure: objective, purpose, components/results and the activities required to produce Components/Results.
[8]   Results Chains provide a clear and logical definition of how a sequence of inputs, activities and outputs directly related to a project interact and enable the achievement of outcomes and effects.
[9]   The catalog of operational indicators, and their subdivisions, was validated in a joint process between the General Directorate of FONATEL and the General Directorate of Markets in order to guarantee the consistency of the definitions and the validity of the comparisons. These indicators were approved by SUTEL's board of directors by way of agreements No. 002-031-2020 and No. 003-031-2020 (notified by means of official letters No. 03396-Sutel-SCS-2020 and No. 03397-Sutel-SCS-2020 on April 20th, 2020), and by way of agreements No. 011-057-2020 and No. 013-057-2020 (notified by means of official letters No. 07324-Sutel-SCS-2020 and No. 07326-Sutel-SCS-2020 on August 18th, 2020).

Table 8. Costa Rica: Catalog of indicators for monitoring and evaluating FONATEL programs and projects in the "In-progress" phase, 2023

Grupo	Tipo de Indicador	Nombre del Indicador	Descripción del Indicador
Aggregate	Management	projects developed with FONATEL	Total number of projects developed with FONATEL resources per status and phase of development life cycle.
Aggregate	Management	districts with at least one program in development with FONATEL resources	Total number of districts with at least one project under development due to a program funded by FONATEL with (total or partial) connectivity to voice and data services, or with at least one household who has benefited from an Internet service subsidy and a device with which to use this service, or with a CPSP that has devices for accessing and using ICTs, or with a free Internet access zone.
Aggregate	Management	devices granted through programs developed with FONATEL resources to provide access to ICTs	Total number of devices distributed to Centers for the Provision of Public Services [CPSP], through FONATEL's Programs, to provide access to, and make use of, Information and Communications Technologies.
Aggregate	Management	Centers for the Provision of Public Services that have received benefits through FONATEL programs	Total number of Centers for the Provision of Public Services [CPSP] that have received benefits (fixed voice and data services and/or devices for accessing and using ICTs) through programs under development with FONATEL resources.
Aggregate	Management	households with access to voice and data services in districts where FONATEL programs are being developed	Total estimated number of households, in districts where FONATEL programs are being developed, with access to voice and data services.
Aggregate	Management	housing units with access to voice and data services in districts where FONATEL programs are being developed	Total estimated number of housing units, in districts where FONATEL programs are being developed, with access to voice and data services.
Aggregate	Beneficiary	inhabitants with access to voice and data services in districts where FONATEL programs are being developed	Total estimated number of inhabitants, in districts where FONATEL programs are being developed, with access to voice and data services.
Aggregate	Beneficiary	Total estimated number of inhabitants, in districts where FONATEL programs are being developed, with access to voice and data services.	Total number of residential fixed Internet subscriptions provided through FONATEL programs.
Aggregate	Financial	Equity of FONATEL	Total FONATEL resources received from the different sources of financing established in article 38 of the General Telecommunications Act. The sum of the Fund's assets and liabilities.

Grupo	Tipo de Indicador	Nombre del Indicador	Descripción del Indicador
Aggregate	Financial	Collected special parafiscal contributions	Total amount contributed to the Fund by the telecommunication service operators and providers; it represents 1.5 % of the gross income directly obtained from the operation of networks and the provision of telecommunication services.
Aggregate	Financial	Investment made by FONATEL	The sum total of the amounts executed by the Fund in the development of each of the programs and projects financed with FONATEL.
Program 1	Achievement of goal	Districts with (total or partial) connectivity to voice and data services as a result of the Connected Communities Program	Total number of districts with (total or partial) connectivity to voice and data services as a result of FONATEL's Connected Communities Program.
Program 1	Achievement of goal	Achievement of the goal established in the PNDT regarding districts with connectivity under the Connected Communities Program	Percentage of completion of the goal established in the National Telecommunications Development Plan [PNDT], within the framework of the Connected Communities Program, regarding the total number of districts with (total or partial) connectivity to voice and data services.
Program 1	Achievement of goal	Indigenous territories with (total or partial) connectivity to voice and data services as a result of the Connected Communities Program	Total number of indigenous territories with (total or partial) connectivity to voice and data services as a result of FONATEL's Connected Communities Program.
Program 1	Achievement of goal	Achievement of the goal established in the PNDT regarding indigenous territories with connectivity under the Connected Communities Program	Percentage of completion of the goal established in the National Telecommunications Development Plan [PNDT], within the framework of the Connected Communities Program, regarding the total number of indigenous territories with (total or partial) connectivity to voice and data services.
Program 1	Administrative	Total projects under the Connected Communities Program per project status	Total number of projects under FONATEL's Connected Communities Program per status and phase of development life cycle.
Program 1	Administrative	Total number of towers equipped with telecommunication infrastructure through the Connected Communities Program per construction status	Total number of towers equipped with telecommunication infrastructure, through FONATEL's Connected Communities Program, per construction status.
Program 1	Administrative	Centers for the Provision of Public Services that have been given Internet access through the Connected Communities Program per service status	Total number of Centers for the Provision of Public Services [CPSP] that have been given Internet access through FONATEL's Connected Communities Program per service status.

Grupo	Tipo de Indicador	Nombre del Indicador	Descripción del Indicador
Program 1	Beneficiary	Inhabitants with potential access to voice and data services, in districts with (total or partial) connectivity, due to the Connected Communities Program	Total number of inhabitants, in districts with (total or partial) connectivity, with potential access to voice and data services as a result of the projects in the "In-progress" phase of FONATEL's Connected Communities Program.
Program 1	Beneficiary	Active fixed Internet subscriptions provided through the Program Connected Communities	Total number of active residential fixed Internet subscriptions provided through FONATEL's Connected Communities Program.
Program 1	Beneficiary	Active fixed telephony subscriptions provided through the Connected Communities Program	Total number of active residential fixed telephony subscriptions (with at least one billable event during the last month of service, or with an ongoing service agreement with the operator) provided through FONATEL's Connected Communities Program.
Program 1	Beneficiary	Active mobile telephony subscriptions provided through the infrastructure made available by the Connected Communities Program	Total number of active mobile telephony subscriptions provided through the infrastructure made available by FONATEL's Connected Communities Program.
Program 1	Beneficiary	Amount of the population that has benefited from the Connected Communities Program	Total number of inhabitants in districts or indigenous territories with (total or partial) connectivity to voice and data services as a result of FONATEL's Connected Communities Program that have at least one active fixed and/or mobile telephony subscription.
Program 1	Financial	Investments made through the Connected Communities Program	The sum total of the amounts executed by the Fund in the financing and development of each of the projects under the Connected Communities Program.
Program 2	Management	households that were contacted through the Connected Households Program per detail status	Total number of households, registered in the Beneficiary Management System of FONATEL's Connected Households Program, that have been contacted by a telecommunication service provider, per detail status.
Program 2	Achievement of goal	households that have benefited from the Connected Households Program per status	Total number of households that have benefited from an Internet service subsidy and a device with which to use this service (including active and inactive devices), provided through FONATEL's Connected Households Program, per status of activity.
Program 2	Achievement of goal	Achievement of the goal established in the PNDT regarding households benefiting under the Connected Communities Program	Percentage of completion of the goal established in the current National Telecommunications Development Plan [PNDT], within the framework of the Connected Households Program, regarding the total number of households benefiting from an Internet service subsidy and a device with which to use this service.
Program 2	Management	Districts where the Connected Households Program is present	Total number of districts under FONATEL's Connected Households Program with at least one household benefiting from an Internet service subsidy and a device with which to use this service.

Grupo	Tipo de Indicador	Nombre del Indicador	Descripción del Indicador
Program 2	Management	Total projects under the Connected Households Program per project status	Total number of projects under FONATEL's Connected Households Program per status and phase of development life cycle.
Program 2	Beneficiary	Active Internet subscriptions subsidized through the Connected Households Program	Total number of Internet subscriptions (with active service) subsidized through FONATEL's Connected Households Program.
Program 2	Management	Net market penetration of residential fixed Internet services provided through the Connected Households Program	Percentage of total households nationwide that have, for the first time, subscribed to a residential fixed Internet service provided through FONATEL's Connected Households Program, and that continue to keep it active[10].
Program 2	Management	Percentage of total households that have benefited from the Connected Households Program	The percentage of total households in the country that have benefited from FONATEL's Connected Households Program.
Program 2	Beneficiary	population that has benefited from the Connected Communities Program	The percentage of the country's total population that has benefited from FONATEL's Connected Households Program (i.e.: from an Internet service subsidy and a device with which to use this service).
Program 2	Management	women-headed households that have benefited from the Connected Households Program	Total number of women-headed households that have benefited from an Internet service subsidy and a device with which to use this service (including active and inactive devices) provided through FONATEL's Connected Households Program.
Program 2	Management	Minors that have benefited from the Connected Households Program	Total number of underage children residing in households that have benefited from an Internet service subsidy and a device with which to use this service (including active and inactive devices) provided through FONATEL's Connected Households Program.
Program 2	Financial	Investments made through the Connected Households Program	The sum total of the amounts executed by the Fund in the financing and development of each of the projects under the Connected Households Program.
Program 3	Achievement of goal	devices delivered to CPSPs for accessing ICTs through the Provisioned Public Centers Program	Total number of devices distributed to Centers for the Provision of Public Services [CPSP], through FONATEL's Provisioned Public Centers Program, to provide access to, and make use of, Information and Communications Technologies.

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[10]   To calculate, divide the net active subsidized subscriptions by the total number of dwellings in the country as reported in the National Household Survey [ENAHO] published by the National Institute of Statistics and Censuses [INEC]. To calculate this indicator, the numerator must be divided by the number of dwellings to be consistent with the market penetration indicator, as defined by the International Telecommunication Union [ITU], which defines penetration as the fraction of the total market in which services have been successfully introduced. In this respect, a dwelling refers to the physical infrastructure in which the installation of services takes place, and which may include one or several households with access to the installed service. In addition, in the surveys conducted by INEC, telecommunication services are measured per dwelling.

Grupo	Tipo de Indicador	Nombre del Indicador	Descripción del Indicador
Program 3	Achievement of goal	Achievement of the goal established in the PNDT regarding the distribution of devices to CPSPs under the Connected Communities Program	Percentage of completion of the goal established in the National Telecommunications Development Plan [PNDT], within the framework of the Provisioned Public Centers Program, regarding the total number of devices distributed to Centers for the Provision of Public Services [CPSPs], to provide access to, and make use of, Information and Communications Technologies.
Program 3	Management	Achievement of the goal established in the RFP regarding the distribution of devices to CPSPs under the Connected Communities Program, per institution	Percentage of completion of the goal established in the Request For Proposal [RFP] documentation of the Provisioned Public Centers Program, regarding the total number of devices distributed to Centers for the Provision of Public Services [CPSPs], to provide access to, and make use of, Information and Communications Technologies, per institution.
Program 3	Management	Total projects under the Provisioned Public Centers Program per project status	Total number of projects under FONATEL's Provisioned Public Centers Program per status and phase of development life cycle.
Program 3	Management	Public Service Provision Centers that have benefited from the Provisioned Public Centers Program	Total number of Centers for the Provision of Public Services [CPSPs] that were provided devices, under FONATEL's Provisioned Public Centers Program, to access and make use of ICTs.
Program 3	Management	Districts where the Provisioned Public Centers Program is present	Total number of districts with at least one CPSP benefiting from FONATEL's Provisioned Public Centers Program.
Program 3	Financial	Investments made through the Provisioned Public Centers Program	The sum total of the amounts executed by the Fund in the financing and development of each of the projects under the Connected Communities Provisioned Public Centers Program.
Program 4	Achievement of goal	Free Internet access zones made available through the Connected Public Spaces Program per service status	Total number of free Internet access zones made available through FONATEL's Connected Public Spaces Program, per service status.
Program 4	Achievement of goal	Achievement of the goal established in the PNDT regarding free Internet access zones under the Connected Public Spaces Program	Percentage of completion of the goal established in the current National Telecommunications Development Plan [PNDT], within the framework of the Connected Public Spaces Program, regarding the total number of free Internet access zones in operation.
Program 4	Management	Percentage of progress made regarding free Internet access zones in operation under the Connected Public Spaces Program	Percentage of completion of the goal established in the Request For Proposal [RFP] documentation of FONATEL's Connected Public Spaces Program regarding the total number of free Internet access zones in operation.
Program 4	Management	Access points installed in free Internet access zones made available through the Connected Public Spaces Program, per status	Total number of access points [AP] installed in free Internet access zones made available through FONATEL's Connected Public Spaces Program, per status.

Grupo	Tipo de Indicador	Nombre del Indicador	Descripción del Indicador
Program 4	Management	Total projects under the Connected Public Spaces Program per project status	Total number of projects under FONATEL's Connected Public Spaces Program per status and phase of development life cycle.
Program 4	Management	Districts where the Connected Public Spaces Program is present	Total number of districts with coverage under FONATEL's Connected Public Spaces Program with at least one free Internet access zone in operation.
Program 4	Management	Unique devices that connected to the free wireless Internet network provided through the Connected Public Spaces Program	Cumulative Total number of devices (with unique MAC addresses) that connected to the free wireless Internet network provided through the Connected Public Spaces Program.
Program 4	Management	Total number of sessions initiated by users in free Internet access zones made available through the Connected Public Spaces Program	Cumulative Total number of sessions initiated by users in free Internet access zones made available through FONATEL's Connected Public Spaces Program.
Program 4	Management	Total hours of network usage in free Internet access zones made available through the Connected Public Spaces Program	Cumulative Total hours of network usage by users in Wifi networks in free Internet access zones made available through FONATEL's Connected Public Spaces Program.
Program 4	Management	Total data traffic in free Internet access zones made available through the Connected Public Spaces Program	Cumulative Total monthly data consumption, in GB, by users in free Internet access zones made available through FONATEL's Connected Public Spaces Program.
Program 4	Financial	Investments made through the Connected Public Spaces Program	The sum total of the amounts executed by the Fund in the financing and development of each of the projects under the Connected Public Spaces Program.
Program 5	Achievement of goal	Achievement of the goal established in the PNDT regarding progress under the Bicentennial Education Network Program	Percentage of completion of the goal established in the current National Telecommunications Development Plan [PNDT], as per the latest goal management update, within the framework of the Bicentennial Education Network Program, regarding the progress of FONATEL's area of focus.
Program 5	Achievement of goal	Progress of FONATEL's area of focus under the Bicentennial Education Network Program	Percentage of completion of FONATEL's area of focus under the Bicentennial Education Network Program.
Program 5	Management	Education Centers scheduled for service	Total number of education centers, assigned to FONATEL's area of focus, that have been scheduled for service under the Bicentennial Education Network Program.
Program 5	Management	Education Centers visited by a contractor	Total number of education centers, assigned to FONATEL's area of focus, with a technical requirement assessment in-progress for the installation of the networks and equipment.

Grupo	Tipo de Indicador	Nombre del Indicador	Descripción del Indicador
Program 5	Management	Education Centers with completed technical requirement assessments for installation	Total number of education centers, assigned to FONATEL's area of focus, with a completed technical requirement assessment for the installation of the networks and equipment.
Program 5	Management	Education Centers with a proposed solution under review by the Management Unit	Total number of education centers, assigned to FONATEL's area of focus, wherein the contractor has provided the Management Unit with a design or sketch of the internal network and equipment installation proposal (solution).
Program 5	Management	Education Centers with a solution fully approved by the director	Total number of education centers, assigned to FONATEL's area of focus, with a fully approved design or sketch of the internal network and equipment installation proposal (solution).
Program 5	Management	Education Centers with connectivity and internal networks	Total number of education centers, assigned to FONATEL's area of focus, wherein the contractor has installed and configured the data links and WAN Internet connectivity (layer 1), the passive and electromechanical infrastructure of the internal LAN network (layer 2), and the active equipment of the internal LAN network (layer 3a).
Program 5	Management	Education Centers connected to the Bicentennial Education Network	Total number of education centers, assigned to FONATEL's area of focus, wherein the contractor has completed the project to the satisfaction of the Management Unit and the institution's director, and is therefore considered to be fully connected to the Bicentennial Education Network.
Program 5	Management	Districts where the Bicentennial Education Network Program is present	Total number of districts with at least one education center benefiting from FONATEL's Bicentennial Education Network Program.
Program 5	Management	Students in education centers connected to the Bicentennial Education Network	Total number of students enrolled in education centers, assigned to FONATEL's area of focus, that have been connected to the Bicentennial Education Network to the satisfaction of the Management Unit and the institution's director.
Program 5	Financial	Investment made through the Bicentennial Education Network Program	The sum total of the amounts executed by the Fund in the financing and development of each of the projects under the Bicentennial Education Network Program.

Source: SUTEL, General Directorate of FONATEL, Costa Rica. 2023.

METHODOLOGY FOR EVALUATING THE QUALITY AND PERFORMANCE OF NETWORKS

Methodology used to evaluate the quality of fixed Internet services

Included providers

The national measurement system of fixed Internet services uses equipment installed nationwide to evaluate the quality of the services provided by the operators with the largest domestic market share, and the highest concentration of users[11]. Above all, the evaluation needs to include information from the four largest fixed Internet service providers, which account for more than 90 % of the total subscriptions; these providers are:

- "Instituto Costarricense de Electricidad," under its commercial brand **Kölbi**.

- "Liberty Telecomunicaciones de Costa Rica Liberty S. A.," under its commercial brand **Liberty**.

- "Telecable S.A.", under its commercial brand **Telecable**.

- "Millicom Cable de Costa Rica S.A.", under its commercial brand **Tigo**.

Evaluated services

Internet service providers offer a wide variety of connectivity options; these are predominantly classified by the speed of the service provided.

Evaluation of the fixed Internet service quality indicators is achieved by measuring the most prominent services; in particular, the services with the largest number of active users per provider. In some cases, however, a specific Internet speed may not be available in a particular location. In such cases, the service with the closest Internet speed and highest number of active users shall be the evaluated service.

The services in this report are, for the most part, of a residential nature, as these are the most predominant nationwide and, therefore, the most representative of Internet services across the country. In addition, in view of the provisions of the RPCS, an evaluation of only residential services sufficiently reflects the quality of the Internet services provided nationwide.

Evaluated services are provided through different types of technologies; namely: i) copper, using ADSL technologies; ii) coaxial, using DOCSIS technologies; and iii) optical fiber, using FTTH or GPON networks. Evaluations are carried out by using ping and http tests to assess the operator's Internet service performance. This makes them largely independent of the type of technology used to provide a service to the end user and, therefore, allows for these services to be evaluated regardless of the technology used for its provision.

The results shown in this report were obtained from quality assessments conducted on a total of 255 active Internet subscriptions across the seven provinces nationwide, which are simultaneously evaluated 24-hours a day through the measurement probe system described in the following section. The number of Internet services used to assess each operator is shown in Table 9.

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[11]   In pursuance of SUTEL's obligation to inspect, assigned in accordance with article 73, paragraph k, of the Public Utilities Regulatory Authority Act [Act No. 7593], the evaluation of the fixed Internet service quality shall focus on operators with nationwide coverage and significant market share, in order for the results to be representative of the quality of the service provided nationwide.

.Table 9. Costa Rica: Number of services evaluated per operator

Operator	San José	Alajuela	Cartago	Heredia	Guanacaste	Puntarenas	Limón	Total per operator
Kölbi	26	17	13	10	9	6	4	85
Liberty Telecomunicaciones de Costa Rica Ly S.A.	24	13	6	10	8	6	1	68
Telecable	22	5	7	11	1	1	-	47
Tigo	12	12	10	10	6	3	2	55
Total per province	**84**	**47**	**36**	**41**	**24**	**16**	**7**	**255**

Source: SUTEL, General Directorate of Quality. Costa Rica, 2023.

It should be noted that the number of services used to assess each operator is sufficiently representative as they exceed the minimum number of sites or measurements required in accordance with the methodology approved by SUTEL, via Resolution No. RCS-019-2018019, which was published in the official gazette "La Gaceta" No. 42 on February 27th, 2018.

Equipment used to conduct the quality evaluations

Each Internet service is evaluated via measurement probes; a specialized device (hardware and software) that is purposefully built for conducting quality evaluations. The measurement probes and the data measurement and processing servers are a part of a coordinated system for conducting quality evaluations nationwide.

The use of measurement probes is recognized by the International Telecommunication Union [ITU] as a potential option for measuring the quality of a service in accordance with ITU-T E.812 Amendment 1 (09/2020) Appendix III[12], and ITU-T E.806 Recommendation (06/2019)[13]. In the matter of using measurement probes, the latest ITU recommendation specifically refers to measurement probes as a means of performing unattended tests, and highlights the following: "Una-

ttended tests can provide historical end-to-end quality of service [QoS] results in near real-time, and can be used to collect granular data that can help detect QoS degradations."

Evaluated quality indicators

The three indicators defined in Chapter Seven of the RPCS (published in the Official Gazette "La Gaceta" No. 36 on Friday, February 17th, 2017) require evaluation. These indicators are:

- International/local latency
- Ratio of measured throughput to provisioned throughput

Each of these indicators are described below.

A continuación, se detalla en qué consiste cada uno de estos indicadores

- **International/local latency**

The latency indicator is evaluated by conducting ping tests, whereby the time it takes to send 100 ICMP Echo Request packets, and receive 100 ICMP Echo Reply packets, is measured. The result of the ping test is the average value of the response time of 100 different responses.

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12   Document available in: https://www.itu.int/rec/T-REC-E.812/es
13   Document available in: https://www.itu.int/rec/T-REC-E.806/es

The international latency indicator is evaluated by conducting ping tests against a dedicated server in Florida, USA, in the NAP of the Americas IXP and Data Center.

Each measurement probe performs at least one ping measurement every 20 minutes, and keeps taking measurements 24x7.

- **Ratio of measured throughput to provisioned throughput**

The ratio of data throughput to provisioned throughput is determined by transferring files via HTTP protocol during a period of at least 10 seconds. A separate measurement is taken for data download (HTTP Download) and data upload (HTTP Upload).

The data throughput results are compared against the provisioned throughput for each Internet service to determine the ratio of measured throughput to provisioned throughput.

Each measurement probe performs at least one HTTP measurement every 20 minutes and keeps taking measurements 24x7.

Methodology used to evaluate the quality of mobile voice and data services

Included providers

The quality of the mobile voice and data services is determined via field measurements of the country's three mobile network operators. These operators are:

- "Instituto Costarricense de Electricidad," under its commercial brand **Kölbi**.

- "Liberty Telecomunicaciones de Costa Rica Liberty S. A.," under its commercial brand **Liberty**.

- "Claro CR Telecomunicaciones," under its commercial brand **Claro**.

Measurement system

The measurement system used by SUTEL in 2023 consisted of a series of measurement probes fitted into vehicles that travel across the country over the course of the year. Said measurement system additionally consists of robust control and measurement servers that serve as a counterpart to the remote equipment; enabling SUTEL to collect, record and process large amounts of data.

The use of measurement probes is recognized by the International Telecommunication Union [ITU] as a potential option for measuring the quality of a service in accordance with Recommendation No. ITU-T E.806 (06/2019), which is titled "Measurement campaigns, follow-up systems and sampling methodologies for monitoring the quality of service in mobile networks."

The measurement probes that evaluate the quality of the mobile services are fitted into vehicles that travel across the country, thereby acting as a type of drive test, in sets of three, one per operator, to guarantee that the measurements are taken simultaneously and, therefore, can serve as a fair basis of comparison for the three operators under evaluation.

Evaluated quality indicators

In regard to data-based services across mobile networks, the same exact indicators used to evaluate the quality of fixed services are measured for comparison, which were described above.

In regard to voice-based services across mobile networks, however, the indicators described in Chapter Five and Six of the **Service Provision and Quality Regulations**, titled "Voice Service Indicators" and "Mobile Service Indicators according to the current service provision and quality regulations" respectively, are measured for comparison. These indicators are:

- Mobile service coverage
- Percentage of unsuccessful calls
- Percentage of dropped calls
- Call set-up time
- Voice call quality of telephone services

In regard to data-based services across mobile networks, the three indicators described in Chapter Seven, titled "Internet Service Indicators according to the current service provision and quality regulations," are measured for comparison; namely: local latency, international latency, and data throughput. These indicators, and how they are measured, were described above.

The mobile service coverage indicator, and the other voice service performance indicators, are described below.

- **Mobile service coverage**

The mobile service coverage indicator is evaluated by comparing the signal strength levels measured in the field against the signal strength levels of the mobile services reported by the operators. This comparison is made to determine what percentage of the measurements made in the field are actually consistent with coverage measurements reported by the operator.

To evaluate this indicator, signal strength data is collected from 2G networks [Received Signal Strength, abbreviated to RxLev Full], 3G networks [Received Signal Code Power, abbreviated to RSCP], and 4G networks [Reference Signal Received Power, abbreviated to RSRP]. The subsequent results are then compared against the coverage measurements reported by the operators to SUTEL.

- **Percentage of unsuccessful calls**

The percentage of unsuccessful calls indicator is the ratio of the total number of unsuccessful calls to the total number of valid call attempts during a given period.

To evaluate this indicator, test calls are made to auto-answer numbers and the network's call set-up time is recorded. If the call is entirely unsuccessful, or if the call set-up time exceeds 10 seconds, the call attempt is considered unsuccessful.

- **Percentage of dropped calls**

The percentage of dropped calls indicator is the ratio of the total number of successful calls that have been assigned a communication channel that are then dropped or interrupted before proper termination by the user, to the total number of successful calls; in these cases, the cause of the early termination is the operator's network.

To evaluate this indicator, test calls are made to auto-answer numbers and, once the call is successful, held for a period of 90 seconds. If the call is interrupted by the operator's network before the 90 seconds have elapsed, the call is considered dropped.

- **Call set-up time**

The call set-up time indicator is the time it takes a network, from the moment the information required to set-up the call is received (i.e.: when the initiation of the call signal is received by the user's network), to the moment until the caller receives a busy tone, dial tone, or answer signal.

To evaluate this indicator, test calls are made to auto-answer numbers and the network's call set-up time, in seconds, is recorded.

- **Voice call quality of telephone services**

The voice call quality of telephone services indicator is a percentage that compares the characteristics of an emitted signal (sound and voice) to the characteristics of the signal received in a telephone communication.

To evaluate this indicator, calls are made from a measurement probe to a dedicated voice server specifically set up for this purpose. This evaluation is conducted via test calls and the POLQA algorithm (Recommendation No. ITU-T P.863), which uses a high-quality standard voice file that meets the specifications established by the ITU. The voice call quality is scored on a MOS scale with a range of 1-5, where 1 is the lowest possible quality and 5 is the highest possible quality.

Methodology used to evaluate the quality of the experience perceived by mobile Internet subscribers

Included providers

The three mobile service providers authorized to operate in the country are included. Namely:

- "Instituto Costarricense de Electricidad," under its commercial brand **Kölbi**.
- "Liberty Telecomunicaciones de Costa Rica Liberty S. A.," under its commercial brand **Liberty**.
- "Claro CR Telecomunicaciones," under its commercial brand **Claro**.

Methodology for evaluating the quality of the experience perceived by users

The experience perceived by mobile telephone users is evaluated through the use of the Opensignal application, which users have the option to voluntarily install and use to determine the status or quality of a mobile service at any given time.

The Opensignal application is available, free of charge, for download on the Google Play and Apple Store storefronts; thereby enabling Opensignal to conduct user experience quality studies in accordance with their agreement with SUTEL.

The application captures data on the quality of service provided outdoors and indoors, exactly as experienced by users, under a wide variety of situations. The data obtained reflects the level of service directly experienced by a given user on his or her smartphone device.

This data is recorded from measurements directly carried out by users, and from measurements that are automatically carried out by the application. Most of the data is obtained from automated measurements that are performed at random intervals to capture the user's experience at specific moments in time. This approach on measuring the user's experience does not require a dedicated test server. It instead measures the end-to-end experience from the terminal device to a content delivery network [CDN], such as Google, Akamai and Amazon.

Given that this application is voluntarily installed by users, the number of smartphones that use this app may vary over time, as it wholly depends on users installing the application on their mobile devices over an extended period of time.

Methodology for evaluating the commercial offers of telecommunication services

Considering that consumer preferences are constantly evolving over time, a qualitative analysis was carried out on the changes exhibited in terms of composition and characteristics of the commercial offers provided, for mobile and fixed telecommunication services, in 2022 and 2023. The ultimate goal is to understand and record the user demand, and the industry's response to such demand, based on sector's offerings.

In regard to mobile telecommunication services (voice calls, SMS and mobile data), an analysis was carried out with respect to all postpaid plans and prepaid bundles provided by authorized network operators from December 2022 to December 2023. This information was recorded via the "Mi Comparador" web tool[14].

In regard to fixed telecommunication services (fixed Internet, fixed telephony and pay TV), a comparison is made with respect to the bundle packages offered by the leading network operators from December 2022 to December 2023, specially given that these operators account for 88 % of the total subscriptions in 2023.

The qualitative analysis involves identifying the differences in offerings in terms of the bundling of services, amount of data available, channels, speeds, free applications, and applications with unlimited data, among others. This analysis reflects the changes in consumer trends nationwide, and the way in which commercial offers have adapted to meet consumer expectations over time.

Methodology for calculating the mobile telecommunications price index

The index is used to monitor the pricing trends of services purchased by mobile telecommunication subscribers.

Monitoring is based on a series of technical criteria, of a statistical and economic nature, established during the development of a general or national index, or on a series of sub-indexes per payment plan.

It should be noted that to calculate the index, and the different degrees of openness, no adjustments are made in terms of mobile data quality. Moreover, it should also be noted that voice and SMS services are considered homogeneous services, as the different operators show a similar level of performance and quality among them due to the similarities in the telecommunication infrastructure used for the provision of services. Other observations of note regarding the calculation of the price index::

- Does not include mobile Internet services provided via a Datacard.
- Does not include prepaid promotional offers targeted at specific market segments, such as "double recharge values for mobile numbers ending in 1".
- Does not include mobile telecommunication services bundled with other services.

It should also be noted that, given that the telecommunication sector is one of the most dynamic and ever-changing industries from a technological and consumer behavior perspective, this methodology must be constantly updated and improved. For this reason, to the extent that changes are introduced, a reasonable effort is made to preserve the comparability of historical data, together with the appropriate caveats and limitations.

The methodology is described below:

- **Methodology for postpaid plans:**

The following prices are analyzed, per operator *(i)*, on monthly basis:

- **plPTi,c,pl,m -** Unit price[15] per component (on-net voice, off-net voice, on-net SMS, off-net SMS, and

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14   "Mi Comparador" is a web tool developed by SUTEL that compares plans and commercial offers for telephony, Internet and television services from different devices; this web tool can be accessed by visiting the following website: https://micomparador.sutel.go.cr/

15   Unit Price: to calculate the unit price, the value of each plan is weighted per service (i.e.: on-net and off-net voice, on-net and off-net data, and on-net and off-net SMS), in accordance with the weight reported for each service component by the operator with regard to the revenue from postpaid subscriptions as of July 2017 (reference month). The resulting calculations are then divided by the number of minutes, messages, and maximum available speed for each plan (in GB), to obtain the price of each service component per unit of measure.

mobile data) for each of the plans included in the analysis. Each plan that is included (pl) must represent at least 80 % of the monthly revenue from postpaid subscriptions per operator. The analysis includes plans that are currently commercially available, and plans that are not be available to new subscribers but maintain active subscriptions.

- $plPT_{i,c,pl,m_1}$ → Overage price per component.

Per operator (*i*) and month of analysis **(m_1)**, the unit price for each component (c) is calculated for every postpaid plan included in the analysis (c) → **($plPT_{i,c,pl,m_1}$)**. The resulting calculations are then averaged to determine the average unit price per component in accordance with the information provided by the operator for each plan → **($PMedplPT_{i,c,m_1}$)**

Consequently, to calculate the individual price per component for each operator in **m_1** that is subject to an overage price **(pePT)**, a weighted average must first be calculated that includes: (a) the average unit price of each component **($PMedplPT_{i,c,m_1}$)** weighted by the relative weight of the revenue generated from subscriptions versus the total revenue[16] earned by each operator **(α_{i,m_1})** and (b) the overage price of each component **($pePT_{i,c,m_1}$)** weighted by the relative weight of the revenue generated by overage fees versus the total revenue from postpaid subscriptions **(β_{i,m_1})**. Then, with the resulting calculations above, it is possible to calculate, per operator in **m_1** the individual price per component **(PPT_{i,c,m_1})**

Once the above is obtained, it is possible to calculate in **m_1** the relative change in the individual price per component by operator with respect to July 2017 **($\Delta PPT_{i,c,m_1}$)**. These results, in turn, are weighted by the monthly share that each component represents in relation to the operator's revenue from postpaid subscriptions **($ʊPT_{i,c,m_1}$)**[17], thereby obtaining a price index for postpaid

plans for each service provider in the market **($\mu PT_{i,m_1}$)**.

Finally, once the price index per operator **($\mu PT_{i,m_1}$)** is weighted by the monthly share that each operator represents in relation to the total revenue from postpaid subscriptions **($\text{þ}PT_{i,m_1}$)**[18], then it is possible to calculate the monthly price index for postpaid plans nationwide **($ĬPT_{m_1}$)**.

Formulas for calculating the postpaid plans' price index:

$$(1)\ PMedplPT_{i,c,m_1} = \frac{\sum_{npl=1}^{npl} plPT_{i,c,pl,m_1}}{npl_{i,c,m_1}}$$

$$(2)\ PPT_{i,c,m_1} = \alpha_{i,m_1} * PMedplPT_{i,c,m_1} + \beta_{i,m_1} * pePT_{i,c,m_1}$$

$$(3)\ \Delta PPT_{i,c,m_1} = \frac{PPT_{i,c,m_1}}{PPT_{i,c,m_0}}$$

$$(4)\ \mu PT_{i,m_1} = \sum_{c=1}^{5} \Delta PPT_{i,c,m_1} * ʊPT_{i,c,m_1}$$

$$(5)\ ĬPT_{m_1} = \sum_{i=1}^{3} \mu PT_{i,m_1} * \text{þ}PT_{i,m_1}$$

$$(6)\ ĬPT_{c,m_1} = \Delta PPT_{i,c,m_1} * \text{þ}PT_{i,m_1}$$

Nomenclature

i= Service providers, where 1= Kölbi, 2 = Movistar and 3= Claro

m_0 = Reference month, July 2017

m_1 = Month of analysis

c = Components, 1= on-net voice, 2= off-net voice, 3= on-net SMS, 4= off-net SMS, and 5 = mobile data.

PT= Postpaid

pl= The plan(s) included in the analysis for each operator; starting with 1 and ending with z

z= The total number of plans included in the analysis for each operator in m_1

$npl_{i,c,m}$ = The number of plans per operator i that were included and consist of a component under analysis in **m_1**

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[16] Total revenue from postpaid subscriptions= Minimum revenue (monthly revenue from package costs) + Revenue from overage fees
[17] For each i in m, it is satisfied that $\sum_{c=1}^{5} ʊPT_c = 1$
[18] Donde para cada i en m1 se cumple que $\sum_{i=1}^{3} \text{þ}PT_i = 1$

- **Methodology for prepaid plans**

There are three types of prices per component that apply to prepaid subscribers, namely: package pricing ($paqPR_{i,c,paq,m_1}$), promotional pricing ($prPR_{i,c,pr,m_1}$) and recharge plan pricing ($recPR_{i,c,m_1}$).

The methodology for calculating the aforementioned prices is presented below:

1. To calculate the average monthly unit price per package by operator ($\mathbf{paqPR_{i,c,paq,m_1}}$), the same exact methodology for calculating the unit price of postpaid plans is used, the only exception being that all the prepaid packages offered in m_1 are included, thereby obtaining ($\mathbf{PMedprPR_{i,c,m_1}}$).

2. Precios de mercado de cada componente por operador en m_1 ($\mathbf{recPR_{i,c,m_1}}$), these prices are predetermined by the operators.

3. In regard to promotions offered by operator in m_1 ($\mathbf{prPR_{i,c,pr,m_1}}$) the specific details of each commercial offer are analyzed to estimate the price per component for every promotion, in addition to any international reference information available, such as the data consumption of mobile applications[19] (Facebook, WhatsApp, Waze and Youtube, among others), and any information requested of the operators, such as the average consumption of minutes, data and unlimited messages per user. Once the price per component in each promotion for every operator has been obtained, these results are then averaged to determine the average individual promotional price per component and operator ($\mathbf{PMedprPR_{i,c,m_1}}$).

Once the above is obtained, the results of the three previous prices in m_1 are weighted by the share that each revenue source represents in relation to the operator's revenue from prepaid subscriptions during the reference month[20], (weight of the revenue from recharge plan pricing per operator i), (weight of the revenue from package pricing per operator i) and (weight of the revenue from promotional pricing per operator i), thereby calculating for every operator the individual price per component ($\mathbf{PPR_{i,c,m_1}}$).

Once the above is obtained, it is possible to calculate in m_1 the relative change in the individual price per component by operator with respect to July 2017 ($\mathbf{\Delta PPR_{i,c,m_1}}$). These results, in turn, are weighted by the monthly share that each component represents in relation to the operator's revenue from prepaid subscriptions ($\mathbf{\eth PR_{i,c,m_1}}$)[21], thereby obtaining a price index for prepaid plans for each service provider in the market in a given month ($\mathbf{\mu PR_{i,m_1}}$).

Finally, once the price index per operator ($\mathbf{\mu PR_{i,m_1}}$) is weighted by the monthly share that each operator represents in relation to the total revenue from prepaid subscriptions in the month of analysis ($\mathbf{\thorn PR_{i,m_1}}$)[22], then it is possible to calculate the monthly price index for prepaid plans nationwide($\mathbf{\tilde{I}PR_{m_1}}$).

Formulas for calculating the prepaid plans' price index:

$$(7)\ PMedprPR_{i,c,m_1} = \frac{\sum_{npr=1}^{npr} prPR_{i,c,pr,m_1}}{npr_{i,c,m_1}}$$

$$(8)\ PPR_{i,c,m_1} = wrec_i * recPR_{i,c,m_1} + wpaq_i * PMedpaqPR_{i,c,m_1 i,c,m_1} + wpr_i * PMedprPR_{i,c,m_1 i,c,m_1}$$

$$(9)\ \Delta PPR_{i,c,m_1} = \frac{PPR_{i,c,m_1}}{PPR_{i,c,m_0}}$$

$$(10)\ \mu PR_{i,m_1} = \sum_{c=1}^{5} \Delta PPR_{i,c,m_1} * \eth PR_{i,c,m_1}$$

$$(11)\ \tilde{I}PR_{m_1} = \sum_{i=1}^{5} \mu PR_{i,m_1} * \thorn PR_{i,m_1}$$

$$(12)\ \tilde{I}PR_{c,m_1} = \Delta PPR_{i,c,m_1} * \thorn PR_{i,m_1}$$

Nomenclature

i = Service providers: 1= Kölbi, 2= Movistar, 3= Claro, 4= Tuyomóvil y 5= Fullmóvil

m_0 = Reference month, July 2017

m_1 = Month of analysis

c = Components, 1= on-net voice, 2= off-net voice, 3= on-net SMS, 4= off-net SMS, and 5 = mobile data.

PR= Prepaid

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[19] ENTEL, a Chilean Telecommunications Company. www.entel.cl/calculadora-datos/
[20] SUTEL was only able to obtain information regarding this indicator for the reference month.
[21] For each i in m_1, it is satisfied that $\sum_{c=1}^{5}\eth PR_c=1$
[22] For each i in m_1, it is satisfied that $\sum_{i=1}^{5}\thorn PR_i=1$

npr_{i,c,m_1}= The number of plans per operator i that were included and consist of a component under analysis in m_1

pr= Every prepaid plan promotion offered by operator i in **i** para m_1 starting with 1 and ending with £

£ = Total promotions offered by **i** in m_1

paq = Every package offered by operator **i** in from m_1 1 to ɳ

ɳ= Total packages offered by **i** para m_1

rec= Price of a recharge per unit of consumption for every component (voice minutes, SMS or GB) offered by the operator **i** in m_1

- **National Index ($\tilde{I}NAL_{m_1}$)**

For m_1 the postpaid ($\tilde{I}PT_{m_1}$) and prepaid ($\tilde{I}PR_{m_1}$) indexes are weighted by the relative weight that each payment option represents in relation to the total revenue from mobile telecommunication services, to wit: πPT_{m_1}[23] (weight of the postpaid payment option) and πPR (weight of the prepaid payment option)[24].

Formulas for calculating the national price index:

$$\tilde{I}NAL_{m_1} = \pi PT_{m1} * \tilde{I}PT_{m_1} + \pi PR_{m1} * \tilde{I}PR_{m_1}$$

Nomenclature

m_1 = Month of analysis

Methodology for calculating the fixed Internet price index

Residential Internet in households is increasingly common and has, in many cases, become indispensable for daily life. This is evidenced by the fact that the total number of households with Internet subscriptions rose from 60.2 % in 2015 [source: INEC] to 86.34 % in 2019 [source: INEC].

Furthermore, the data presented in this report shows that fixed Internet subscriptions grew by 8.38 % in 2021 in relation to 2020, reaching a total of 1,000,000 subscriptions in 2021.

It should be noted that in December 2017[25], SUTEL declared that this service was being provided under fair competitive conditions and, from then on, the prices were determined by the market's supply and demand.

In view of the above, there is a clear need for a solution that can measure the variation in prices per gigabyte of speed[26], to provide SUTEL with an additional decision-making tool, given that the regulations do not specify a price ceiling, as had been the case from the opening of the market until that date.

The Fixed Internet Price Index [IPIF as per its acronym in Spanish] of the retail market measures the variations in price per unit of subscribed speed in Costa Rican households as of July 2018; this allows SUTEL to analyze the market trends associated to these services.

To calculate IPIF, the following must be taken into account:

- This analysis only includes the four operators with the largest market share (i.e.: Kölbi, Tigo, Liberty Servicios Fijos LY S. A., and Telecable), which together account for 95% of the total subscriptions. Even though there are a total of 18 operators that provide fixed Internet services nationwide, the remaining operators only represent between 0 % and 1 % of the market share. As such, given that any commercial activity that these operators may undertake will not significantly affect the results of the price index, they are not included in the analysis.

- The analysis only includes commercial offers targeted at households (residential services) that are provided under a single service contract (not bundled with other services).

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[23] The sum of the revenue from prepaid subscriptions and the revenue from postpaid subscriptions earned during the month of analysis..

[24] It is satisfied that **πPTm + πPRm = 1**

[25] SUTEL (2016). "An assessment of the retail market for residential fixed Internet services, an analysis of the level of competition in said market, and a declaration of the most relevant operators and imposed obligations" (RCS-258-2016). Retrieved from: https://www.sutel. go.cr/sutel/resoluciones?-field_tipo_documento_tid=All&=Aplicar

[26] Since the Internet has unlimited data, commercial offers are presented in terms of the subscribed speed.

- The type of technology through which the operator provides the Internet service (xDSL, HFC, FTTx or wireless) is not relevant for the purposes of this calculation. In regard to the operators' perception of competitors in the market, "this analysis only includes price as obtaining a better price is the primary influencing factor in the end consumer's purchase decision, and not a better quality of service" (according to report RCS-258-2016). Furthermore, given that fixed Internet services have similar characteristics, levels of quality, and pricing, all technologies are considered to be part of the same relevant market for the purposes of this report. As such, the key influencing factor in the end consumer's purchase decision is the Internet speed that they require.

- These operators offer their customers a wide range of Internet speeds. However, given that the level of quality and the amount of data consumption in households is significantly lower than in businesses, this report does not include all the available speeds in the market. For the purposes of this analysis, a maximum speed of up to 100 Mbps will be taken into consideration for each operator. This decision is predicated on the fact that, in regard to residential fixed Internet services, most operators offer a maximum speed of up to 100 Mbps. Moreover, considering the household spending results reported in the 2013 National Survey of Household Income and Expenditures [ENIGH as per its acronym in Spanish], and the relative weight of the spending structure, if said results were to be extrapolated to 2018, household spending on communication services would fluctuate between 13 000 and 64 000 colones at different quintiles of household income, with an average of 36 000 colones. These results were then compared to the average value of packages that offer more than 100 Mbps, which amount to a value of more than 50,000 colones. With this context, it is very unlikely that a household would purchase a speed that is greater than 100 Mbps, as this far exceeds the estimated average household spending on communication services reported in the ENIGH.

- The commercial offers that account for 80 % of the total fixed Internet subscriptions per operator were selected for analysis in this report. Furthermore, this analysis includes plans that are currently commercially available, and plans that are not be available to new subscribers but maintain active subscriptions.

- The prices under analysis only reflect the cost of the fixed Internet service and do not include the cost of the modem or the installation.

- The reference month is July 2018.

Indicator Calculations:

1. To calculate the unit price, the price of the offer is divided by the number of Mbps provided in the commercial offer under analysis.

$$PIF_{i,v,m_1} = \frac{PIF_{i,v,m_1}}{Cant\ Mbps_{v,i,m_1}}$$

2. To calculate the average unit price per operator, every unit price of each operator **(i)** in the month of analysis is weighted by the share it represents of the revenue earned in the reference month.

$$PMedIF_{i,m_1} = \sum_{v=1}^{v=n} PIF_{i,v,m1} \cdot \delta_{i,v,m_1}$$

3. To calculate the national average price, a weighted average is calculated by using the share that each operator represents in relation to the total revenue from fixed Internet services in the month of analysis.

$$PIF_{m_1} = PMedIF_{i,m_1} \cdot \beta IF_{i,m_1}$$

4. Finally, once the relative percentage change of national prices in the reference month is obtained, it is possible to calculate the monthly price index for fixed Internet services nationwide.

$$\tilde{IIF}_{m_1} = \Delta PIF_{i,v,m_1} = \frac{PIF_{m_1}}{PIF_{m_0}}$$

According to conventional theory, price indicators should be weighted on the basis of household spending in goods and services. For the purposes of this analysis, however, since the results of household spending with respect to fixed Internet services are not available, the revenue earned by the operators for said services is used instead.

Nomenclature:

Cant= number of megabytes.

IF= Fixed Internet

i= Service providers, where 1= Kölbi, 2= Tigo, 3= Liberty Servicios Fijos LY S. A., & 4= Telecable

m_0= reference month

m_1= month of analysis

n= number of packages of a given operator **(i)** that were selected in the month of analysis **(m1)**

v= speed of commercial offer

Methodology for calculating the international call price index

One of SUTEL's objectives is the implementation of methodologies that measure how prices behave in the telecommunications market. In furtherance of the foregoing, the need for a tool that can monitor the price of international calls was identified.

This service has shown a decline in revenue due to the adoption of technologies such as Internet calls and other platform-based solutions. However, it continues to serve a significant market niche to such an extent that the different mobile and fixed telephony operators continue to provide this service.

This methodology measures how prices behave in the residential sector with respect to mobile and fixed telephony prices.

This service accounts for 5 % of the total revenue from fixed telephony services, and 3.8 % of the total revenue from mobile telephony services, which explains why monitoring this service is so important.

International call services are currently provided by 15 operators, and have potential access to over 8 million lines.

On account of the above, the international call price index for fixed and mobile telephony services in the retail market measures the variations in price per minute of calls made to different destinations as of July 2020; this allows SUTEL to analyze the market trends associated to these services in terms of price.

To calculate this index, the following must be taken into account:

1. The operators with the largest market share with respect to outbound international call traffic are Kölbi (fixed and mobile services), Claro and Liberty Telecomunicaciones de Costa Rica LY S. A., which together represent 86 % of the total traffic of the 15 operators that provide international call services. Given that the remaining operators only accounts for approximately 14 % of the market share, not including this data will not significantly affect the results.

2. After consulting the operators, the countries with the highest outbound traffic originating within national territory (and which account for at least 80 % of the total) are determined on a monthly basis. Consequently, the five most significant destinations are determined in accordance with the total traffic perceived by the aforementioned three operators.

3. An analysis is then conducted with regard to the fixed telephony services provided by Kölbi to determine the price per minute at the household level, and then with regard to the mobile telephony

services provided by the mobile network operators to determine the price per minute of calls made to the countries and destinations determined in accordance to Item No.2 above.

4. The analysis only includes the prices of services targeted at households (residential fixed telephony services) and mobile users, and that are provided under a single service contract (not bundled with other services).

5. The unit price per international call minute is not considered within the analysis of postpaid plans because operators do not differentiate between destinations. These minutes count towards the total minutes provided by the different subscription plans regardless of whether they are national or international call minutes, as is the case with operators that offer minutes to other countries within their local network.

6. Postpaid and prepaid packages that specifically focus on the provision of international minutes are not included in the month of analysis because operators do not classify minutes in accordance with their destinations. It is therefore assumed that any minute of usage in this report refers to domestic minutes, since the minutes of the different packages are charged as domestic minutes regardless of the destination.

7. The overage price of postpaid and prepaid plans may be used depending on the international destination of the calls made.

8. The prices under analysis only reflect the cost of the international call service and do not include the cost of the modem (VoIP) or the installation.

9. The month of reference is July 2021 (reference month).

10. Only the price of calls made through fixed and mobile networks are included in the analysis; the price of calls made through other platforms, such as Skype or Gmail, are not taken into account.

11. The weight of the international call packages is calculated in terms of the price per minute of postpaid and prepaid plans for each operator in July 2020.

Index Calculations:

1. The five most significant (international) destinations are determined in accordance with the traffic perceived by each operator per type of telephony service (whether it is a fixed telephony service, or a prepaid or postpaid mobile telephony service).

2. The market price offered by each operator is then calculated, per type of telephony service (whether it is a fixed telephony service, or a prepaid or postpaid mobile telephony service), for each of the destinations.

$$PMI_{i,n=A,m_1} = PI_{i,A,m_1,TF} * \beta TF_{i,m_1} + PI_{i,A,m_1,Post} * \beta Post_{i,m_1} + PI_{i,A,m_1,prep} * \beta Prep_{i,m_1}$$

The price of calls made to these destinations is then weighted by the share of revenue that they represent in relation to the total revenue earned per type of telephony service.

3. The weighted price per operator is then calculated for each of the destinations.

$$PMI_{i,m_1} = PI_{i,A,m_1} * \beta_{i,A,m_1} + PI_{i,B,m_1} * \beta_{i,B,m_1} + PI_{i,C,m_1} * \beta_{i,C,m_1} + PI_{i,D,m_1} * \beta_{i,D,m_1} + PI_{i,E,m_1} * \beta_{i,E,m_1}$$

The price per operator is then weighted by the share of revenue that they represent in relation to the total revenue earned by destination.

4. The average price for the reference month is estimated by calculating the weighted sum of the prices per operator obtained in Item No.3 above.

$$PMI_{m_1} = PMI_{1,m_1} * \beta_{1,m_1} + PMI_{2,m_1} * \beta_{2,m_1} + PMI_{3,m_1} * \beta_{3,m_1}$$

5. Finally, once the relative percentage change of national prices in the reference month is obtained (ΔPMI_{m_1}), it is possible to calculate the monthly price index for international call services nationwide (ΓIM_{m_1}).

$$\tilde{I}IMI_{m_1} = \Delta PMI_{m_1} = \frac{PMI_{m_1}}{PMI_{m_0}}$$

Nomenclature:

MI= international minute.

i= service providers, where 1= Kölbi, 2= Claro, 3= Telefónica.

m_0= reference month.

m_1= month of analysis.

n_1= number of destinations of a given operator **(i)** that were selected in the month of analysis (m_1); A; B; C; D y E.

GENERAL DEVELOPMENTS IN THE SECTOR

2023

The telecommunications market generated 732 363 million colones in 2023

Commercial offers of telecommunication services in 2023

By the end of 2023, a total of 169 telecommunication operators and service providers were duly registered and had been granted a valid license to operate (even though some of them were still in the pre-operational stage), which showed an increase of 6 operators and providers in relation to 2022. It should also be noted that the market continues to show strong signs of momentum, as 22 new companies were granted a license to provide telecommunication services. Therefore, despite a number of withdrawals and terminations of licensing agreements, the total number of network operators and service providers available to users increased in relation to the previous year. With this in mind, it should also be noted that in 2023 the economic activity of the sector continued to grow in relation to the years in which the market was affected by the outbreak of the COVID-19 pandemic, and in fact, since then, many more companies have ventured into the provision of new telecommunication services. Moreover, it is evident that the market is undergoing a commercial restructuring where the tastes and preferences of users and the commercial offers provided by network operators and service providers are converging.

Regarding the number of operators that reported information during the analysis period for the services that they provide, 100 % of operators actively engaged in the provision of fixed telephony services, mobile telephony services, and pay TV subscription services reported information, while only 72 % of operators actively engaged in the provision of data transfer services reported information. On the subject of fixed data transfer services, the behavior recorded is consistent with previous years since the operators that reported information have the largest market shares and account for 94.1 % of the market. For that reason, the general conclusions with regard to this sector remain unchanged. Moreover, the remaining 28 % include companies that are either actively engaged in the provision of other services, or that are in the initial or pre-operational stages with regard to the provision of data transfer services. As such, even though these companies may be classified as commercially active, they do not provide information about data transfer services.

BEHAVIOR OF REVENUE IN THE TELECOMMUNICATIONS SECTOR

The market reported 732 363 million colones of revenue in 2023, which represents a nominal increase of 0.2 % in relation to 2022. With regard to the last five years, however, data shows a contraction of the market and revealed other factors that may affect the sector, such as the country's economic adjustments during the last three years and the residual effects of the outbreak of the COVID-19 pandemic in early 2020. This decline is consistent with the growth shown by the national production activities during this period, which showed a decrease in growth in 2023 in relation to 2022.

Moreover, it should be noted that the change in the revenue generated is the result of not only the growth in the volume of services provided in the sector (subscribers and traffic), but of the effect that competition has had in the setting of prices, which have shown a downward trend in recent years. These effects are not expected to occur simultaneously, and it is likely that, in a dynamic analysis, any increase shown in the demand (volume) may be the result of price reductions. The analysis conducted in this report, however, is static and therefore does not take these effects into account, which may occur when there is a lag in the market.

On the other hand, the ratio of total income to Gross Domestic Product, at market prices, revealed an increase of 1.8 % in 2023 in relation to 2022, and that this indicator has remained largely unchanged[27] over the course of the past five years (see Graph 2).

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[27] It should be noted that, in 2018, the Central Bank of Costa Rica changed the base year used to calculate the GDP. Therefore, starting in 2018, the base year used to calculate the GDP will be 2012.

In regard to the revenue generated per type of service (see Graph 3), fixed telephony services (POTS & VoIP), mobile telephony services (voice and SMS), and dedicated line services generally showed a downward trend for the fourth consecutive year. The behavior of the mobile telephony services is particularly noteworthy, which fell by 1.8 %. This, however, was not the case for all Internet services (fixed and mobile Internet), which showed an increase of 2.8 %, while dedicated line services fell by 11.7 % in relation to 2022.

The behavior in 2023 is consistent with the behavior in 2022, where revenue from data transfer services (fixed and mobile Internet) was three times as much as the revenue from mobile telephony services; the former being the service with the highest relative weight in terms of revenue earned. This supports the changes observed in the types of services used by present telecom users (more data and less voice call services).

An analysis of each individual service reveals the following:

Mobile telephony

Voice traffic and SMS services generated 180 803 million colones in revenue in 2023, which represents a decrease of 1.8 % in relation to 2022. As seen in Graph 3, the 2019-2023 period showed an average annual growth of -5.85 %. Of the total revenue reported from mobile telephony services, 98.1 % of the revenue came from voice traffic, while the remaining 1.9 % came from SMS messaging. This percentage weight is consistent with the results obtained in 2022 (where 96.8 % of the revenue came from voice traffic and 3.2 % from SMS messaging).

Fixed telephony (POTS & VoIP)

Fixed telephony services (POTS & VoIP) generated 29 694 million colones in revenue in 2023, which re-

presents a decrease of 8.7 % in relation to 2022. This service has shown a downward trend in recent years as the demand has decreased, particularly in regard to POTS, which becomes evident when analyzing the average growth rate for the 2019-2023 period, which fell by an average of 16.07 % per year (see Graph 3).

Plain old telephone service [POTS]

The revenue from plain old telephone services has shown a downward trend over the various analysis periods. The revenue from this service has decreased by 33.7 % over the last year, and has shown a negative annual growth rate of 20.24 % from 2019 to 2023. The relative weight of this service, in terms of overall fixed telephony, remains unchanged in relation to 2022 at 71 %.

Fixed VoIP telephony

The revenue from fixed VoIP telephony services showed a downward trend from 2019 to 2022. In 2023, however, it exhibited an increase of 28.9 % in relation to 2022. The average annual growth rate since 2019 is 3.57%. The relative weight of this service, in terms of overall basic telephony, remains unchanged in relation to 2023 at 26,6 %[28].

Internet (fixed and mobile Internet)

In regard to Internet services, revenue has shown an upward trend with an average annual growth rate of 3.10 % from 2019 to 2023. This service generated 481 334 million colones in revenue in 2023, which represents an increase of 2.8 % in relation to 2022. It should be noted that revenue from wired fixed Internet services accounts for 41.21 % of the total, while mobile Internet services account for 58 %[29] of the total. The annual growth rates for this last year, in terms of the revenue generated by these services in 2023, were -2% and 6.7%, respectively, in relation to 2022.

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[28] The percentage share of the revenue from fixed telephony is as follows: POTS 72 %, VoIP 26 %, and public telephony services 2 %.
[29] The remaining 0.75 % came from wireless fixed Internet services..

Dedicated lines

The revenue from dedicated line services reached 40 531 million colones in 2023, which represents a decrease of 11.7 % in relation to the previous year. An annual growth rate of -4.9 % was reported from 2019 to 2023. This indicator shows that income has a fluctuation problem over time, characterized by a pattern of peaks and troughs.

An analysis of the percentage weights for the revenue from each service in relation to the total revenue generated by the sector reveals two potential scenarios. In one scenario, the revenue from mobile telephony and mobile Internet services (mobile network) is added under the same revenue category, followed by fixed Internet, POTS and VoIP telephony services and, ultimately, dedicated line services (see Graph 4). In the other scenario, the revenue from fixed Internet and mobile Internet services is added under the same revenue category, followed by mobile telephony (voice only), POTS and VoIP telephony services and, ultimately, dedicated line services (see Graph 5).

In the first scenario, mobile telephony and mobile Internet services (mobile telecommunications) account for 63 % of the total revenue generated in 2023. This percentage share has shown a downward trend over the years: it was reported to be 65 % in 2019, 63% in 2020, and 61% in 2021 and 2022. In 2023, however, it showed an upward trend. Fixed Internet services placed second in 2023 with 28 %, followed by dedicated line services with 5 %, and POTS and VoIP with 4 %.

Moreover, in the second scenario, fixed and mobile Internet services accounted for 66 % of the revenue, followed by mobile telephony services (voice only), which accounted for 25 % of the revenue, showing that consumer preference between these two services is increasing in relation to 2022, where the percentage shares were 64 % and 25 %, respectively. Finally, comparably to the first scenario, dedicated line services accounted for 5 % of the revenue in 2023, while fixed telephony services accounted for 4 % of the revenue. In this scenario, mobile telephony and Internet services together accounted for 91% of the total revenue generated by the sector.

BEHAVIOR OF SUBSCRIPTIONS IN THE TELECOMMUNICATIONS SECTOR

An important aspect to analyze in the telecommunications market is the behavior of subscriptions to the different services due to their role in the sector's growth. This behavior is summarized in Table 12, which shows the degree of market penetration for each service, in terms of number of inhabitants or dwellings, during the analysis period (2019-2023).

Mobile telephony

There were 7 443 281 active mobile telephony subscriptions in 2023. 4 259 124 of these were prepaid subscriptions, while the remaining 3 184 157 were postpaid subscriptions, representing 57 % and 43 % of the total, respectively. This service showed a downward trend in 2023 in relation to 2022, falling by 432 882 subscriptions. Upon analyzing the payment plans separately, it is clear that this reduction is most notably affecting prepaid subscriptions, which reported 614 604 fewer lines, while the opposite is true for postpaid subscriptions, which reported 181 722 additional lines.

> The penetration of this service fell to 141 % in 2023, which represents a ten-percentage-point decrease in relation to 2022.

Fixed telephony (POTS & VoIP)

In regard to fixed telephony services, the number of subscriptions show a considerable change in the form of an upward trend, rising from 488 930 in 2022 to 629 531 in 2023, which represent an increase of 140 601 subscriptions (38 %). The market penetration for this service in 2023, in terms of the population and the total number of households, is 12 % and 35 %, respectively. This represents an increase of 3 and 7 percentage points in relation to the previous year.

A separate analysis of POTS and VoIP services shows that this reduction is most notably affecting POTS, where subscriptions fell by 48 431 subscriptions in relation to 2022 (-12 %), while the opposite is true of VoIP services, which increased by 140 601 subscriptions (241 %) in relation to 2022. This behavior is evidenced in the "fixed telephony" section of this report.

A separate analysis of the penetration of these services, in 2023, showed that POTS has a penetration of 7 % in terms of the population and 20 % in terms of dwellings, while VoIP has a penetration of 5 % and 15 %, respectively.

Plain old telephone service [POTS]

Subscriptions to plain old telephone service [POTS] have been in decline for the last five years. 362 023 subscriptions were reported in 2023, a decrease of 209 785 in relation to 2019 (571 808), which represents an annual growth rate of -8.74 %.

Fixed VoIP telephony

In 2022, fixed VoIP telephony services continue to show an upward trend that is consistent with recent years. 267 508 subscriptions were reported in 2023, an increase of 189 032 in relation to 2022, which represents a 32.83 % growth rate from 2019 to 2022.

Internet access (includes mobile Internet access)

Fixed and mobile Internet service subscriptions show an upward trend in relation to 2022. 6 333 378 subscriptions were reported in 2023, an increase of 225 763 subscriptions in relation to the previous year. This increase can be further analyzed by breaking it down per type of subscription (i.e.: wired fixed Internet, wireless fixed Internet, and mobile Internet services). As a result, wired fixed Internet subscriptions showed an increase of 4 % (44 637 subscriptions), while wireless fixed Internet subscriptions decreased by 383 subscriptions, and mobile Internet subscriptions increased by 181 509 subscriptions.

Dedicated lines

Dedicated line subscriptions have shown an irregular behavior over the analysis period. In 2023, however, subscriptions increased by 2159 in relation to 2022. This change resulted in a 12 % increase in connections, which represents a total of 19 453 subscriptions in 2023. 2020 reported the highest number of subscriptions in the last 5 years, with 23 682 total subscriptions.

Bundling of services

In order to properly monitor the commercialization of telecommunication services, a number of indicators were developed to keep track of any changes in the supply of such services. For that reason, since 2019, work began on the measurement of bundled subscriptions.

For measurement purposes, the term "bundling" refers to a combination of telecommunication services, which have been made available as a commercial offer that includes two or more of the following services: fixed telephony, mobile telephony, fixed Internet, and/or pay TV services, bundled in a single package and billed in a single invoice with an individual price for the combination of services included in the bundled package. These combinations of services are, in addition, offered under terms and conditions that would otherwise not apply if purchased separately.

To start with, an analysis is conducted to determine the number of subscriptions under a bundled package versus a single service contract. In regard to fixed Internet subscriptions, there is a clear customer preference to purchase this service as a bundled package

with other services, as it represents 59 % of the total bundled subscriptions reported in 2023. This is shown in Graph 6.

In the case of fixed telephony services, which include both POTS and VoIP, the number of POTS subscriptions bundled with other services was 28 %, while VoIP was 96 % (see Graphs 7 and 8).

Pay TV subscriptions accounted for 73 % of the total bundled subscriptions (see Graph 9).

It should be noted that, in 2023, no operator or provider sold any mobile telephony subscriptions bundled with other telecommunication services.

It is therefore important to identify which package has the highest number of subscriptions to determine the consumer habits of users. Graph 10 shows that packages that bundle fixed Internet services and TV subscription services are the most popular, followed by triple bundle packages that offer fixed Internet services, TV subscription services, and fixed VoIP services. The following most popular bundled package is fixed Internet services bundled with fixed VoIP services, followed by fixed VoIP services bundled with TV subscription services.

Kilometers of fiber

It is clear that to achieve higher Internet speeds, and provide better telecommunication services, a change in the technology employed is required. For that reason, the number of kilometers of optical fiber in operation have been monitored in recent years. As shown in Graph 11, the number of kilometers of optical fiber in operation increased from 112 938 kilometers in 2019, to 203 414 kilometers in 2023, which represents a significant increase for this indicator (80.1 % during that period). This represents an increase of 6.2 % in relation to 2022.

TOTAL INVESTMENT

The total investment in the Telecommunications Sector has remained largely unchanged in recent years. This indicator fell to 0.3 % of the GDP in 2023, whereas in 2022 it represented 0.4 % of the GDP. This is a relatively small decrease, however, which suggests that the telecommunications market continues to contract and is still being affected by the country's economic performance. An analysis of the total investment expressed as a share of gross capital formation[30] confirmed previous findings, as this ratio fell from 1.82 % in 2022 to 1.78 % in 2023. Costa Rica is currently in the process of completing an Invitation to Bid [ITB] process to award the radio-electric spectrum required to implement 5G networks to the winning bidders, which could lead to a deferral or slowdown in investment spending over the coming years. The deployment of this new technology, however, could also lead to an even greater commercialization of new services and, therefore, a potential increase in investment spending in the near future.

NUMBER OF HUMAN RESOURCES UNDER EMPLOYMENT

In regard to the number of human resources directly associated with telecommunication services, the number of personnel hired in 2023 fell by 494 employees, which represents a decrease of -5 % in relation to 2022 (see Graph 14). Upon comparing the human resource employed in the sector to the country's workforce, results show that the behavior is consistent with the data reported in 2022, and that the indicator has remained stable throughout the analysis period (see Graph 15). In regard to the sector's workforce and the total population, Graph 16 shows that there has been little to no change over time, reflecting a slight decrease in relation to the previous year.

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[30] Includes all expenditures that represent the addition of new durable goods to preexisting fixed assets, less the net sales of similar second-hand goods by the industries, public governments, and private non-profit agencies that provide services to households.

Upon analyzing the Telecommunications Sector's female workforce in 2023, results show a decrease of 10 % in relation to 2022, and a cumulative growth rate of -0.2 % in relation to 2019.

Demand Indicators

Over the years, the Superintendency of Telecommunications has developed a series of indicators to measure and assess the supply of different telecommunication services. This year, a subset of information was prepared on the basis of certain demand indicators along with the data collected via the ICT section of the National Household Survey [ENAHO] in 2019 and 2023. These indicators reveal any and all changes in the market penetration of the different telecommunication services provided to the population.

A table with the historical information recorded in the last five years was designed and prepared and, in 2019 and 2023, an analytical comparison of the ICT Section's indicators was carried out. Refer to Table 13 for a detailed breakdown.

The market penetration of these demand indicators is determined by means of a survey, namely: the National Household Survey [ENAHO]. Whereas the penetration determined in other sections of this report is determined via administrative records.

On the one hand, an analysis of the attachment rate of the different telecommunication services, in terms of the percentage of dwellings that have acquired said services, revealed that the penetration of fixed telephony service has decreased year-over-year, falling from 30 % in 2019 to 19 % in 2023. On the other hand, the attachment rate of mobile telephony services has exceeded 95 % in recent years, reaching a market penetration of 97 % in 2023. Likewise, this analysis revealed that approximately 90 % of all mobile telephony subscribers have both postpaid and prepaid telephony plans.

Conversely, cable and pay TV subscriptions have decreased, falling from 88 % in 2019 to 60 % in 2023.

In regard to Internet services, the percentage of dwellings with Internet service has reached a market penetration of over 80 % in the last five years, and if compared to the percentage of users who are of 5 years of age or older, this indicator also exceeds 80 %.

An analysis of the devices that users use the most to connect to the Internet revealed that consumer trends show a preference for mobility, as the percentage of users who prefer to use a mobile phone increased from 59.7 % in 2019 to 97 % in 2023.

Amongst the places used most to connect to the Internet where the users' homes, the workplace, and study centers.

Finally, this section concludes with an analysis of the most popular Internet activities. Users connected to the Internet the most for personal communication and social interaction, followed by searching and finding information, and Internet content consumption. In addition, it should be noted that government and corporate communications rose from 15 % in 2019 to 49 % in 2023.

Graph 1. Costa Rica: Total revenue generated by the Telecommunications Sector in 2019-2023
(yearly figures in millions of colones and in percentage of variation)

Year	Millions of colones	Variation rate
2019	765 469	0.5 %
2020	729 200	-4.7 %
2021	731 357	0.3 %
2022	730 898	-0.1 %
2023	732 363	0.2 %

● Millions of colones　— — Variation rate
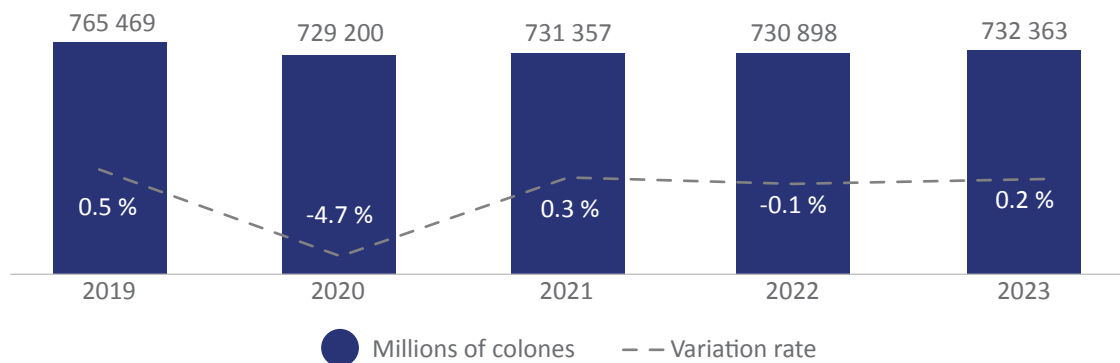
Source: SUTEL, General Directorate of Markets. Costa Rica, 2023.

Graph 2. Costa Rica: Total revenue generated by the Telecommunications Sector expressed as a share of GDP[1] in 2019-2023
(yearly figures in percentage terms)

Year	Share of GDP
2019	2.1 %
2020	2.1 %
2021	2.0 %
2022	1.9 %
2023	1.8 %
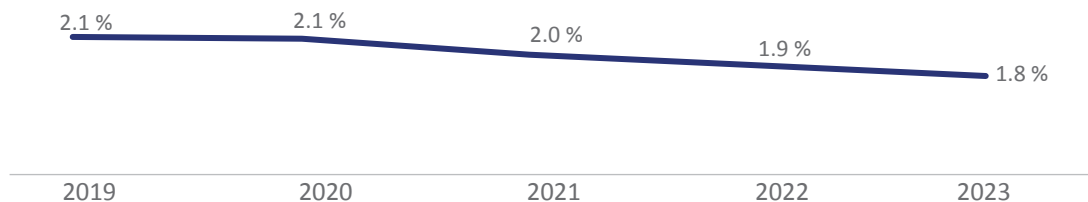
Note: [1]/The gross domestic product was measured with current market prices.
Source: SUTEL, General Directorate of Markets & Central Bank of Costa Rica [BCCR]. Costa Rica, 2023.

Graph 3. Costa Rica: Total revenue generated by the Telecommunications Sector per type of service in 2019-2023
(yearly figures in millions of colones)

Type of service	2019	2020	2021	2022	2023
Internet access (includes mobile Internet access)	426 003	426 237	447 224	468 290	481 334
Mobile telephony (voice, messaging, and outbound roaming)	230 143	205 942	191 460	184 158	180 803
Plain old telephone service [POTS] & VoIP telephony	59 830	49 326	53 886	45 915	40 531
Dedicated lines	49 492	47 695	38 787	32 535	29 694

━━ Mobile telephony (voice, messaging, and outbound roaming)　•••• Internet access (includes mobile Internet access)
– – Plain old telephone service [POTS] & VoIP telephony　– – Dedicated lines

Note: POTS and VoIP telephony includes the revenue from Public Telephony services.
Source: SUTEL, General Directorate of Markets. Costa Rica, 2023.

Graph 4. Costa Rica: Total revenue generated by the Telecommunications Sector per type of service in 2019-2023
(yearly figures in percentage terms)

	2019	2020	2021	2022	2023
	6 %	7 %	7 %	6 %	5 %
	21 %	23 %	27 %	28 %	28 %
	8 %	7 %	5 %	5 %	4 %
	65 %	63 %	61 %	61 %	63 %

● Mobile telecommunications ● Plain old telephone service [POTS] & VoIP telephony
● Fixed Internet access ● Dedicated lines
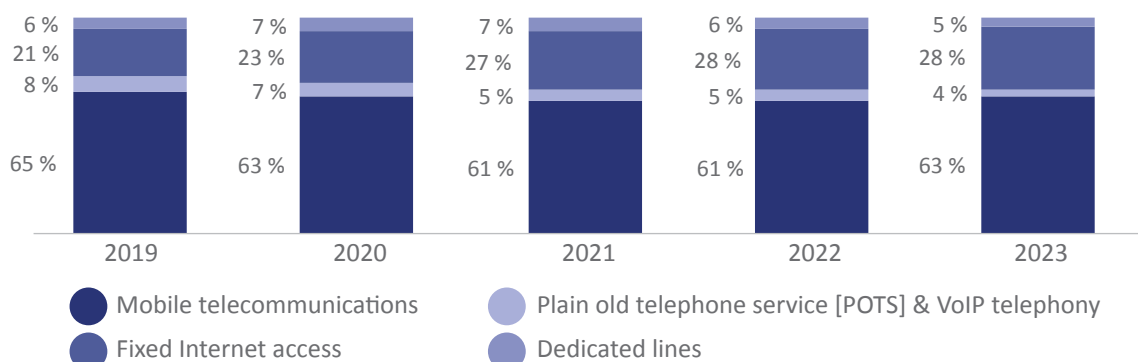
Notes: Revenue from mobile telecommunication services includes mobile telephony, outbound roaming and mobile Internet. POTS and VoIP telephony includes the revenue from Public Telephony services.
Source: SUTEL, General Directorate of Markets. Costa Rica, 2023.

Graph 5. Costa Rica: Total revenue generated by the Telecommunications Sector per type of service in 2019-2023
(yearly figures in percentage terms)

	2019	2020	2021	2022	2023
	6 %	7 %	8 %	7 %	5 %
	8 %	6 %	5 %	4 %	4 %
	56 %	58 %	61 %	64 %	66 %
	30 %	28 %	26 %	25 %	25 %

● Mobile telephony (voice, messaging, and outbound roaming) ● Internet access (includes mobile Internet access)
● Plain old telephone service [POTS] & VoIP telephony ● Dedicated lines
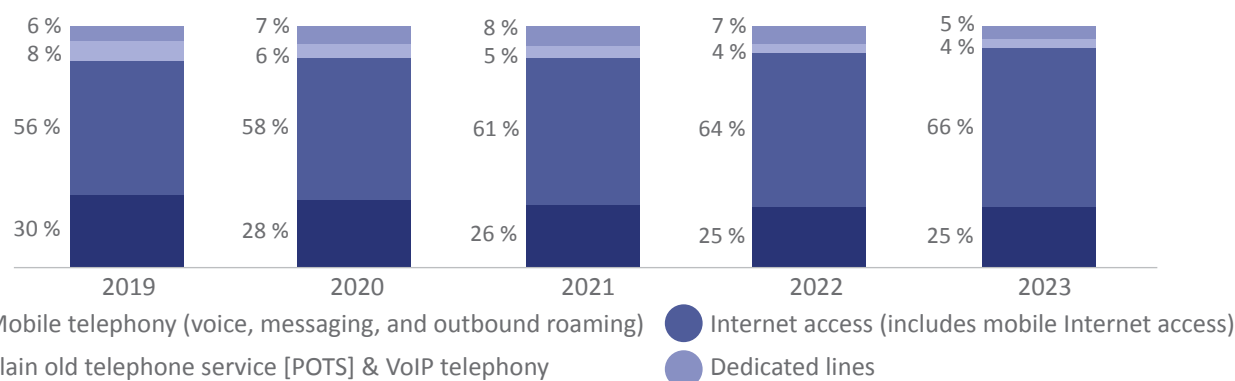
Note: POTS and VoIP telephony includes the revenue from Public Telephony services.
Source: SUTEL, General Directorate of Markets. Costa Rica, 2023.

Graph 6. Costa Rica: Distribution of fixed Internet subscriptions under single service contract or bundled with other services. 2019-2023

	2019	2020	2021	2022	2023
	67 %	63 %	60 %	58 %	59 %
	33 %	37 %	40 %	42 %	41 %

● Fixed Internet (Single) ● Fixed Internet (Bundled)
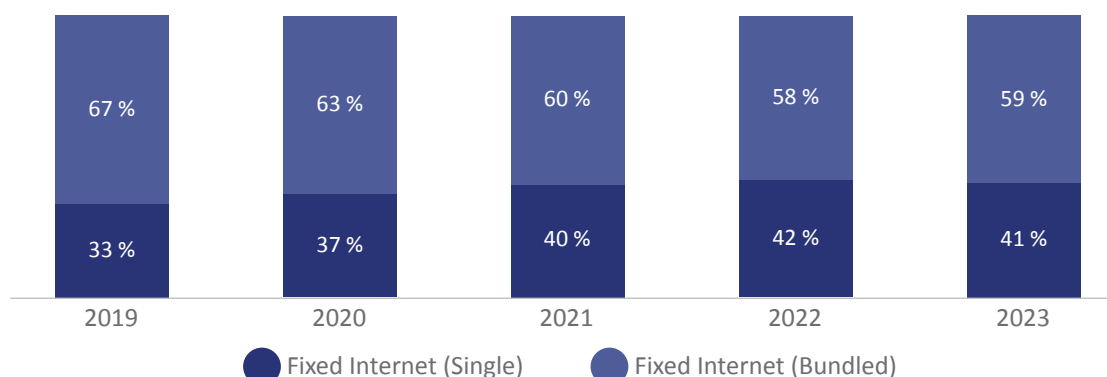
Source: SUTEL, General Directorate of Markets. Costa Rica, 2023.

Graph 7. Costa Rica: Distribution of fixed telephone VoIP subscriptions under single service contract or bundled with other services. 2019-2023

Year	Fixed Telephone VoIP (Bundled)	Fixed Telephone VoIP (Single)
2019	82 %	18 %
2020	80 %	20 %
2021	79 %	21 %
2022	85 %	15 %
2023	96 %	4 %

● Fixed Telephone VoIP (Single)   ● Fixed Telephone VoIP (Bundled)
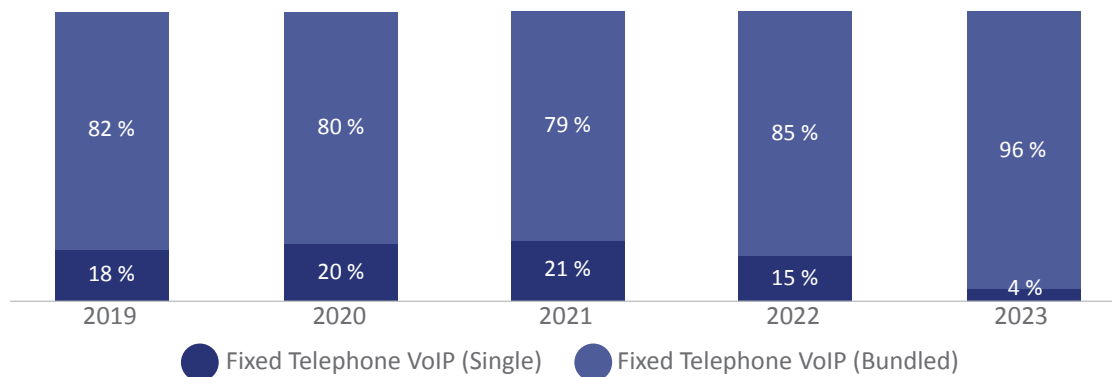
Source: SUTEL, General Directorate of Markets. Costa Rica, 2023.

Graph 8. Costa Rica: Distribution of Plain Old Telephone Service [POTS] subscriptions under single service contract or bundled with other services. 2019-2023

Year	POTS (Bundled)	POTS (Single)
2019	26 %	74 %
2020	28 %	72 %
2021	29 %	71 %
2022	28 %	72 %
2023	28 %	72 %

● POTS (Single)   ● POTS (Bundled)
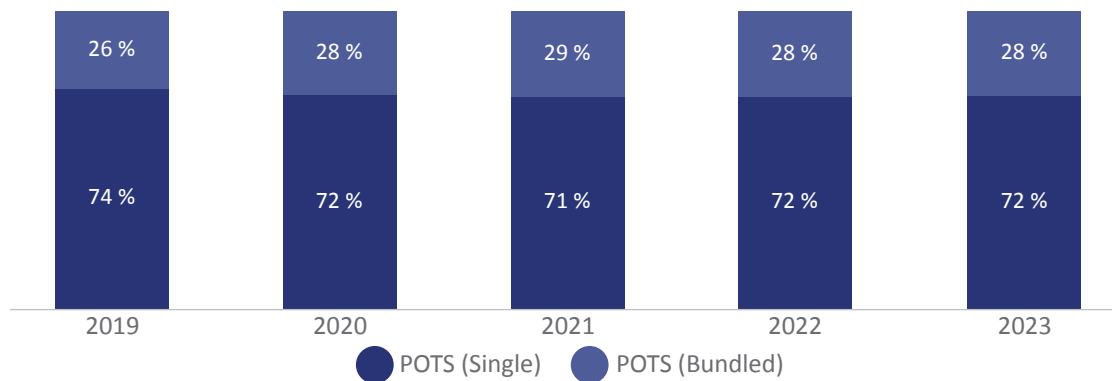
Source: SUTEL, General Directorate of Markets, Costa Rica, 2023.

Graph 9. Costa Rica: Distribution of TV subscriptions under single service contract or bundled with other services. 2019-2023

Year	TV (Bundled)	TV (Single)
2019	59 %	41 %
2020	69 %	31 %
2021	68 %	32 %
2022	64 %	36 %
2023	73 %	27 %

● TV (Single)   ● TV (Bundled)
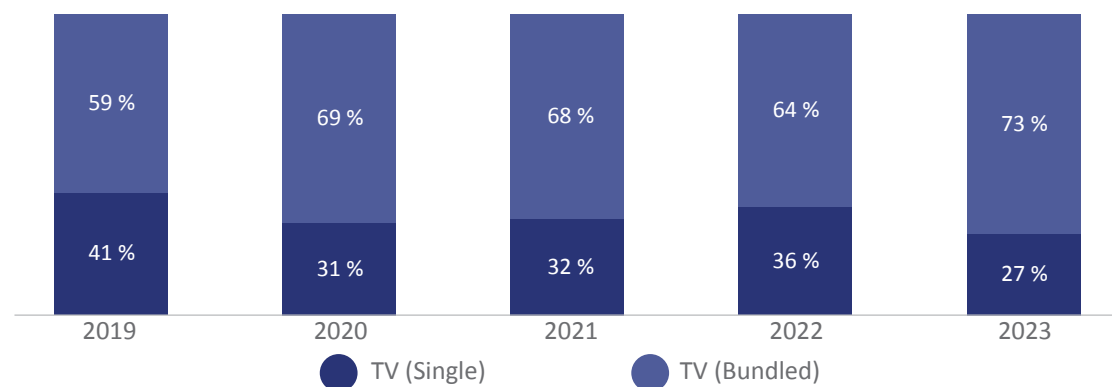
Source: SUTEL, General Directorate of Markets. Costa Rica, 2023.

Graph 10. Costa Rica: Number of subscriptions per type of telecommunication service package in 2019-2023

Fixed Internet-Fixed Telephone VoIP: 7327, 6525, 5725, 8133, 20535

Fixed Internet-TV: 358 454, 398 201, 493 505, 503 898, 497 261

Fixed VoIP Telephony-TV: 1115, 997, 735, 559, 281

TV-Fixed Internet-Fixed VoIP Telephony: 34 921, 33 968, 46 923, 65 612, 62 856

● 2019   ○ 2020   ● 2021   ● 2022   ● 2023
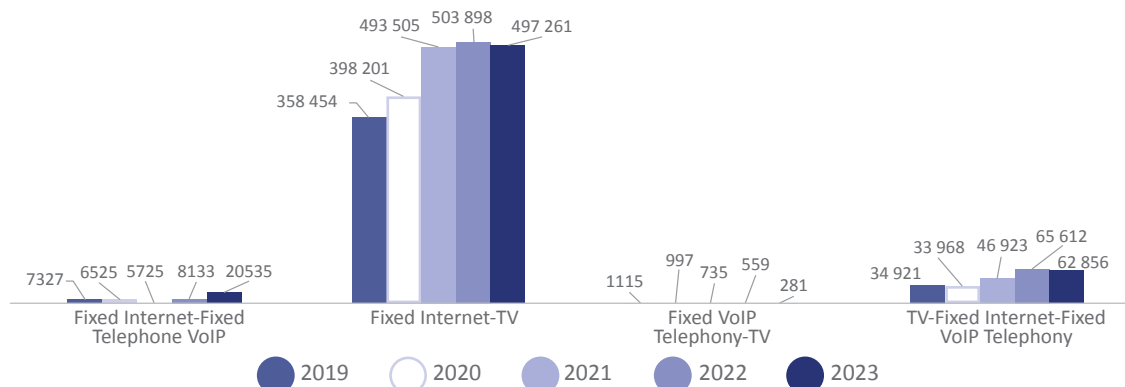
Source: SUTEL, General Directorate of Markets. Costa Rica, 2023..

Graph 11. Costa Rica: Number of kilometers of optical fiber in operation in 2019-2023

2019	2020	2021	2022	2023
112 938	176 203	186 287	191 589	203 414
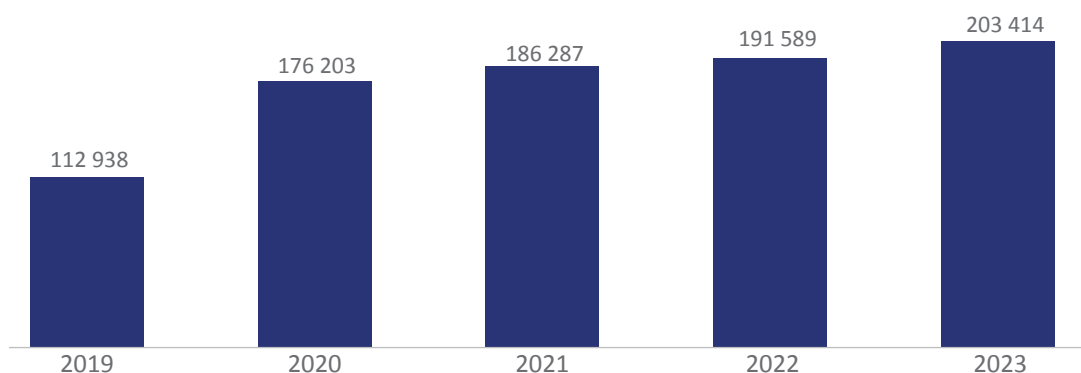
Source: SUTEL, General Directorate of Markets. Costa Rica, 2023.

Graph 12. Costa Rica: Total investment made in the Telecommunications Sector expressed as a share of GDP[1] in 2019-2023
(yearly figures in percentage terms)

2019: 0.6 %   2020: 0.2 %   2021: 0.6 %   2022: 0.4 %   2023: 0.3 %
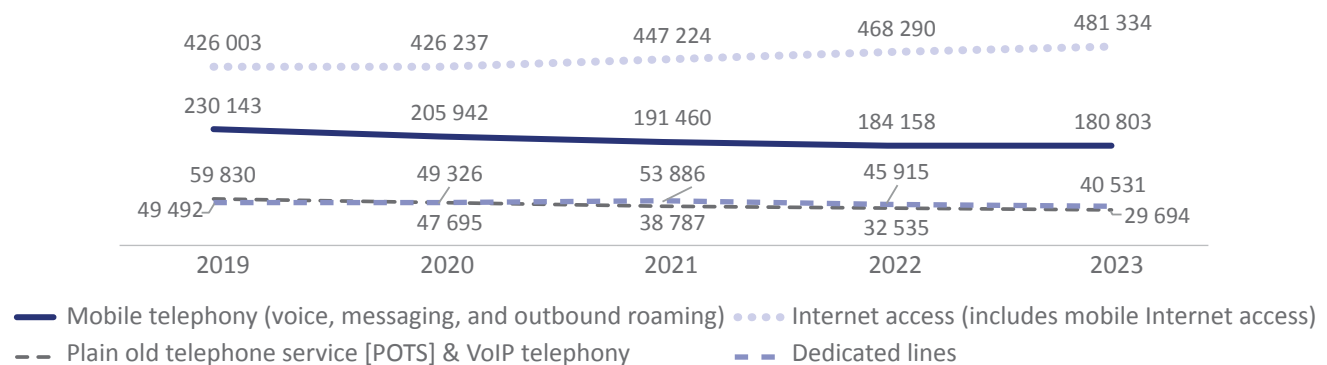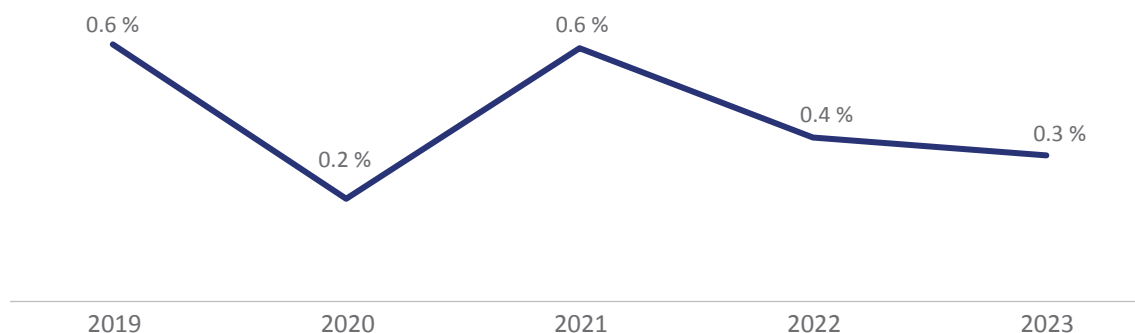
Note: [1]/The gross domestic product was measured with current market prices.

Source: SUTEL, General Directorate of Markets. Costa Rica, 2023.

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Graph 13. Costa Rica: Total investment made in the Telecommunications Sector expressed as a share of Gross Capital Formation in 2019-2023

(yearly figures in percentage terms)

	2019	2020	2021	2022	2023
	4.17 %	1.69 %	0.53 %	1.82 %	1.78 %
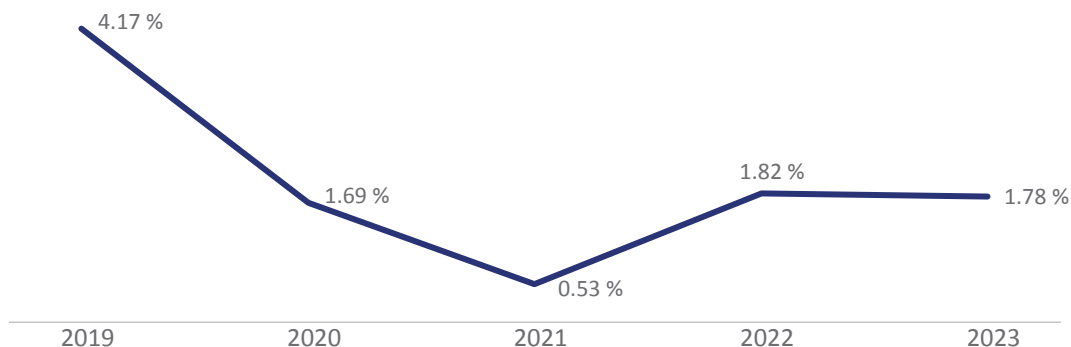
Source: SUTEL, General Directorate of Markets. Costa Rica, 2023.

Graph 14. Costa Rica: Telecommunications Sector's Workforce in 2019-2023
(yearly figures)

	2019	2020	2021	2022	2023
People	10 761	10 994	10 795	10 305	9811
Variation rate	-9 %	2 %	-2 %	-5 %	-5 %

● People   ─── Variation rate
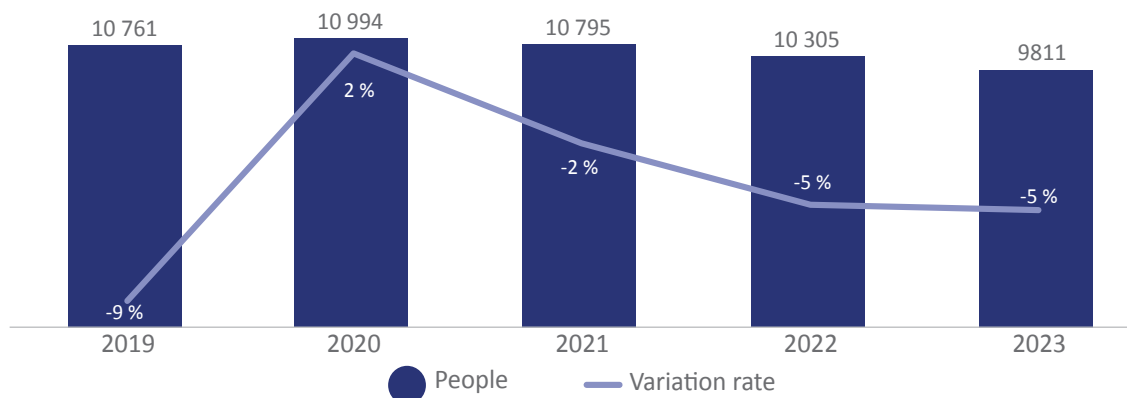
Source: SUTEL, General Directorate of Markets. Costa Rica, 2023.

Graph 15. Costa Rica: Percentage of the Telecommunications Sector's workforce in relation to the economically active population in 2019-2023
(Yearly figures in percentage terms)

	2019	2020	2021	2022	2023
	0.44 %	0.46 %	0.44 %	0.42 %	0.43 %
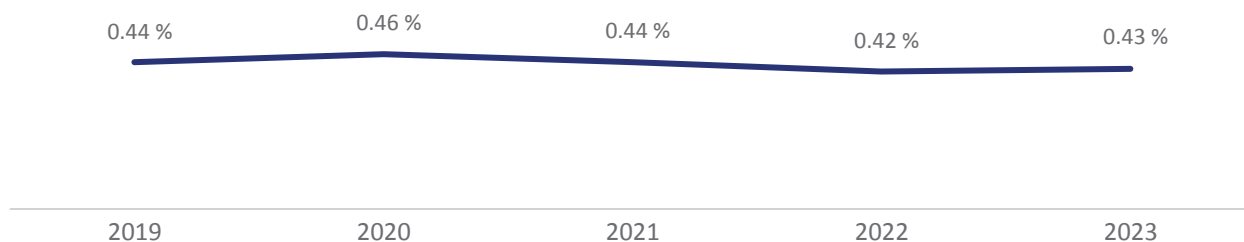
Source: SUTEL, General Directorate of Markets. Costa Rica, 2023.

Graph 16. Costa Rica: Proportion of the Telecommunications Sector's workforce in relation to the economically active population in 2019-2023
(yearly figures in percentage terms)

0.21 %	0.22 %	0.21 %	0.20 %	0.19 %
2019	2020	2021	2022	2023
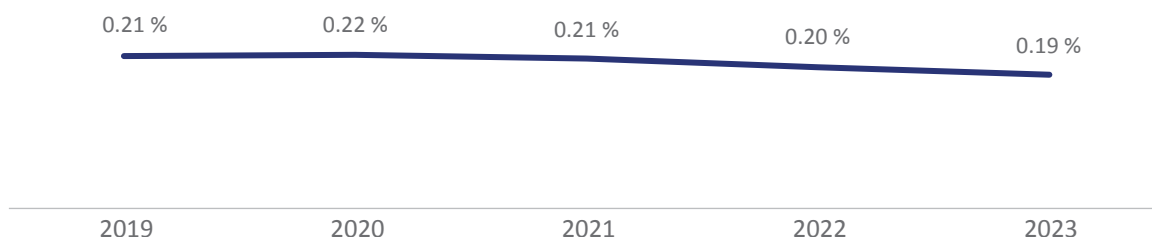
Source: SUTEL, General Directorate of Markets. Costa Rica, 2023.

Graph 17. Costa Rica: Telecommunications Sector's Female Workforce in 2019-2023

3244	3279	3227	3578	3196
2019	2020	2021	2022	2023
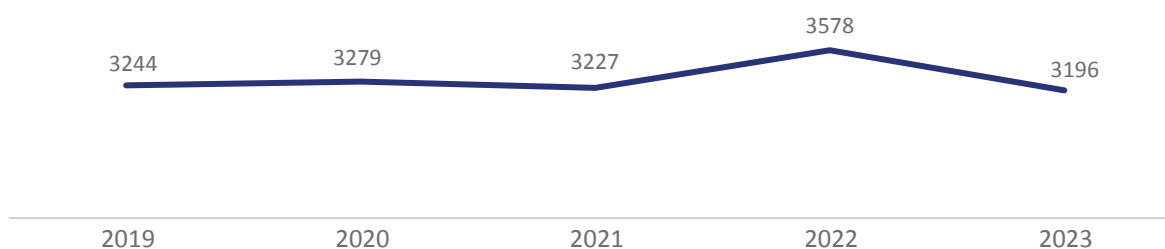
Source: SUTEL, General Directorate of Markets. Costa Rica, 2023.

Table 10. Costa Rica: Number of telecom operators and service providers in 2019-2023

Indicator	2019	2020	2021	2022	2023
Total number of licensed companies	148	158	187	163	169
Indicator response rate	77 %	77 %	86 %	83 %	82 %

Source: SUTEL, General Directorate of Markets. Costa Rica, 2023.

Table 11. Costa Rica: Percentage of companies per service in 2019-2023

Service	2019	2020	2021	2022	2023
Fixed telephony	100 %	100 %	100 %	100 %	100 %
Mobile telephony	100 %	100 %	100 %	100 %	100 %
Data transfer*	68 %	60 %	58 %	65 %	72 %
Pay television	100 %	100 %	100 %	100 %	100 %

* The operators with the largest market share have been contributing market data over the years, thereby ensuring the comparability of the statistics. The three operators with the largest market share in fixed Internet services account for approximately 95 % of the market share year on year, while the remaining seven operators account for the outstanding 5 %.

Source: SUTEL, General Directorate of Markets. Costa Rica, 2023.

Table 12. Costa Rica: Summary of the Costa Rican Telecommunications Sector's key performance indicators in 2019-2023

Indicator	2019	2020	2021	2022	2023
Sector's aggregate data					
Total revenue (in millions of colones)*	765 469	729 200	731 357	730 898	732 363
Total revenue/GDP (in percentage terms)	2,11 %	2,09 %	1,96 %	1,88 %	1,79 %
Total investment/GDP (in percentage terms)	0,58 %	0,23 %	0,6 %	0,4 %	0,3 %
Total human resource employed	10 761	10 991	10 795	10 305	9811
Total number of human resources under employment/ Total economically active population	0.44 %	0.46 %	0.44 %	0.42 %	0.43 %
Fixed telephony					
Total Subscriptions	636 504	556 617	500 550	488 930	629 531
Total subscriptions/100 inhabitants	13 %	11 %	10 %	9 %	12 %
Total subscriptions/100 households	40 %	35 %	30 %	28 %	35 %
Total Plain Old Telephone Service [POTS] Subscriptions	571 808	504 276	443 684	410 454	362 023
Total POTS subscriptions/100 inhabitants	11 %	10 %	8,6 %	7,9 %	6,9 %
Total POTS subscriptions/100 households	36 %	32 %	27 %	24 %	20 %
Total VoIP subscriptions	64 696	52 341	56 866	78 476	267 508
Total number of public payphones	3798	3265	2905	2683	2454

Indicator	2019	2020	2021	2022	2023
Mobile telephony					
Total Subscriptions	7 309 970	7 512 370	7 834 435	7 876 163	7 443 281
Prepaid subscriptions	4 892 208	5 005 892	5 139 500	4 873 728	4 259 124
Postpaid subscriptions	2 417 762	2 506 478	2 694 935	3 002 435	3 184 157
Total subscriptions/100 inhabitants	144.52 %	147 %	152 %	151 %	141 %
Prepaid subscriptions/Total subscriptions	67 %	67 %	66 %	62 %	57 %
Postpaid subscriptions/Total subscriptions	33 %	33 %	34 %	38 %	43 %
Data transfer					
Total Internet subscriptions	5 553 963	5 729 424	5 963 705	6 107 615	6 333 378
Total number of fixed Internet service subscriptions	904 734	992 725	1 058 767	1 105 670	1 149 924
Total number of fixed (wired) Internet service subscriptions	900 276	986 673	1 053 097	1 098 532	1 143 169
Total number of fixed (wireless) Internet service subscriptions	4458	6052	5670	7138	6755
Total mobile Internet subscriptions	4 649 229	4 736 699	4 904 938	5 001 945	5 183 454
Total fixed Internet service subscriptions/100 inhabitants	18 %	19,4 %	20,5 %	21,2 %	21,9 %
Total fixed Internet service subscriptions/100 households	57 %	63 %	64 %	64 %	65 %
Total mobile Internet service subscriptions/100 inhabitants	92 %	93 %	95 %	96 %	99 %
Total mobile Internet service subscriptions/ Total mobile telephony subscriptions	64 %	63 %	63 %	64 %	70 %
Total number of dedicated line connections	22 921	23 682	18 025	17 294	19 453
Televisión por suscripción					
Pay television	874 088	866 593	848 950	831 579	819 064
Total subscriptions/100 inhabitants	17 %	17 %	16 %	16 %	15 %
Total subscriptions/100 households	55 %	55 %	51 %	48 %	46 %
Reference indicators					
Total population	5 058 007	5 111 238	5 163 038	5 213 362	5 262 225
Gross Domestic Product at current market price (in millions of colones)**	36 279 504	34 893 724	37 256 836	38 843 177	40 938 205
Total households	**1 578 161**	**1 581 585**	**1 650 361**	**1 722 602**	**1 778 254**

Notes:
* Does not include revenue from TV subscription services.
**In 2018, BCCR changed the base year used to calculate the GDP to 2012.

Source: SUTEL, General Directorate of Markets, INEC & BCCR. Costa Rica, 2023.

Table 13. Costa Rica: Demand indicators for telecom services in 2019-2023

Indicadores	2019	2020	2021	2022	2023
Percentage of households with fixed telephone subscriptions	30 %	28 %	24 %	22 %	19 %
Percentage of households with cellular telephone subscriptions	96 %	96 %	96 %	97 %	97 %
Percentage of households with Internet subscriptions	86 %	85 %	81 %	83 %	82 %
Percentage of households with pay TV subscriptions	71 %	71 %	71 %	69 %	60 %
Percentage of the population with cellular telephone subscriptions	88 %	90 %	90 %	90 %	89 %
Percentage of the population aged 5 years and older that used the Internet in the last three months	81 %	81 %	83 %	83 %	85 %
Number of mobile telephony lines per gender of respondent (postpaid)	1.007				1.002
Number of mobile telephony lines per gender of respondent (prepaid)	1.006				0.997
Devices that users use the most to connect to the Internet (first mention)					
Laptop computer	32.2 %				1.0 %
Desktop computer	7.4 %				0.0 %
Mobile phone	59.7 %				97.0 %
Tablet	0.5 %				1.0 %
TV	0.1 %				1.0 %
Video game console	0.0 %				0.0 %
Places that (name) used the most to connect to the Internet in the last three months					
Study centers	17.0 %				11.0 %
Workplace	29.8 %				24.0 %
Home	51.9 %				60.0 %
Internet cafés. libraries. videoclubs	0.0 %				0.0 %
House of a family member or acquaintance	0.8 %				0.0 %
Free Internet access center	0.5 %				0.0 %
While traveling (in transport or on foot)	0.1 %				0.0 %
Any location while using mobile data					4.0 %
Other					1.0 %
Most popular Internet activities					
Cloud-based content/computing	13.8 %				23.4 %
Internet content creation	2.2 %				4.0 %
Internet content consumption	79.6 %				66.3 %
Self-promotion / work-related	6.4 %				2.4 %
Education and learning	14.6 %				17.5 %
E-commerce. trades and transactions	16.2 %				23.0 %
Personal communication / social interaction	95.3 %				87.5 %
Government / corporate communications	15.0 %				49.0 %
Searching and finding information	74.7 %				73.7 %

Source: National Household Survey [ENAHO as per its acronym in Spanish], INEC. Costa Rica, 2023

STATISTICS OF THE GENERAL DIRECTORATE OF COMPETITION IN 2023

Table 14. Costa Rica: Relevant actions taken in defense and promotion of competition in the telecommunications sector in 2023

Topic	Total	Scope	Summary
Special competition/ antitrust proceedings	1	ESPH	On March 27th, 2023, the Board of Directors of SUTEL declared, via resolution RCS-074-2023[31], that ESPH was responsible of engaging in abuse of dominance in the form of exclusive agreements and refusal to deal agreements.
Advocacy measures (infrastructure)	2	Promotion of competition in condominiums and buildings with shared infrastructure	1. Guidelines to Promote Competition in the Provision of Telecommunications Services in Condominium and buildings with Common Infrastructure for Network Deployment. 2. Manual of best practices for the deployment of telecommunication networks in business and commercial properties with shared infrastructure.
Merger Notifications analyzed	1	Liberty Telecomunicaciones de Costa Rica LY S. A. - Itellum Comunicaciones Costa Rica, S. R. L. The absorption by Liberty Telecomunicaciones de Costa Rica LY S.A. of a competitor's customer portfolio, within two relevant markets, namely: 1) fixed business Internet service market; and 2) data transfer market. Such transaction was considered to be a horizontal merger.	This concentration was approved in first phase without any commitments, on November 30th via resolution RCS-288-2023.
Market research studies	2	Analysis of the competition conditions of pipeline infrastructure market and substitute infrastructure within the country. Identification of barriers that could potentially affect the deployment of telecommunications networks and infrastructure at a local level, and prevent or restrict the entry of new competitors or the expansion of incumbent companies. Provide tools designed to promote the development of 5G services at a municipal level by fostering competition and offering investment incentives.	1. Market research study on pipeline infrastructure and its impact on competition. 2. Market research study on the municipal regime and regulations and its impact on the deployment of infrastructure required for 5G networks.

Source: SUTEL, General Directorate of Competition, 2023.

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[31] SUTEL (2023). "Torres de Heredia" Condominium & ESPH S.A. Retrieved on February 16th, 2023, from: https://www.sutel.go.cr/sites/_default/files/rcs-074-2023_esph.pdf

1 SPECIAL ANTITRUST PROCEEDING AGAINST ESPH ["EMPRESA DE SERVICIOS PÚBLICOS DE HEREDIA"]

On March 27th, 2023, the Board of Directors of SUTEL declared, via resolution RCS-074-2023[32], that "Empresa de Servicios Públicos de Heredia" [ESPH] was responsible of engaging in abuse of dominance, in the "Torres de Heredia" Condominium, in the form of exclusivity agreements and refusal to deal, in accordance with Article 54, paragraphs b) and d), of the General Telecommunications Act. Consequently, a fine was imposed amounting to 0.79 % (zero-point seventy-nine percent) of ESPH's gross income for the 2021 fiscal year.

A complaint was filed before SUTEL regarding the apparent infringement of the General Telecommunications Act in 2020, which led to the initiation of the preliminary investigation stage of the competition special procedure. After the decision stage was finalized, ESPH was found responsible of engaging in abuse of dominance, particularly in refusal to deal and exclusivity agreements, thereby preventing other service providers from operating within the "Torres de Heredia" Condominium from 2017 to January 2022, making ESPH the only option available for residential Internet.

ESPH received at least two requests between September 2019 and January 2022 from service providers that sought access to the condominium infrastructure in order to deploy their networks. These requests were expressly denied by ESPH administrators. Service providers were denied access to the building´s infrastructure, after following a series of steps and processes that were never resolved and instead delayed the deployment of other networks and the provision of services. Any third party seeking to provide telecommunication services to the residents, had to do so through ESPH's fiber optic network without conceding any other option. This meant that third parties would have to spend between 67% and 79% of the fee charged to the end user, in order to cover the cost of using ESPH's network, thereby creating an untenable situation that excluded other competitors.

At the time of these events, the only network available within the building complex belonged to ESPH. This created two markets, a wholesale market for the leasing of ESPH's fiber optic network, and a retail market for the commercialization of fixed services to end users. The actions taken by ESPH and the condominium's administration restricted other service providers to a single access mechanism (i.e.: the existing network). This made the network an essential commodity that was indispensable for third parties that sought to provide their services. By preventing access to other network operators and service providers, an exclusivity situation was created, without the need to resort to exclusivity agreement clauses or right-of-use clauses regarding access to infrastructure. It was concluded that ESPH had engaged in implicit refusal to deal practices by charging an excessively high price for an essential commodity, that made it impossible to compete at the retail level.

Exclusivity agreements, especially in condominium properties, can be detrimental to end users as they may, under certain circumstances, restrict or distort competition in a given market by excluding the competition and limiting the users' right to choose the service provider that best suits their needs.

2 ADVOCACY MEASURES TAKEN TO PROMOTE COMPETITION IN ACCESS TO PROPPERTIES WITH SHARED INFRASTRUCTURE

Problems concerning access to properties or buildings with shared infrastructure, such as condominiums, have been on the rise in recent years. A series of advocacy measures have been taken regarding competition law in furtherance of promoting better competitive conditions within the industry.

As part of the competition promotion and advocacy measures taken in 2023 regarding shared telecommunications infrastructure, the two following documents were developed and released:

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[32] SUTEL (2023). "Torres de Heredia" Condominium & ESPH S.A. Retrieved on February 16th, 2023, from: https://www.sutel.go.cr/sites/ default/files/ rcs-074-2023_esph.pdf

2.1- Guidelines to Promote Competition in the Provision of Telecommunications Services in Condominium Regulations with shared Infrastructure for Network Deployment[33]

These guidelines were specifically designed for administrators and professionals entrusted with the elaboration of regulations for condominium properties, which are subject to the Condominium Property Regulation Act [Act 7933], and are intended to foster a competitive environment, for the forthcoming deployment of telecommunication networks, to the benefit of all parties involved.

The guidelines suggest posing a series of questions in order to determine whether a given regulation has the potential of restricting competition or if there are less restrictive alternatives for achieving the desired outcome. In addition, the guidelines provide examples of anti-competitive wording in internal regulations, such as: restrictions on the procurement of telecommunication services on the part of the administration or restrictions on the procurement and installation of telecommunication devices for aesthetic reasons. The guidelines also provide examples of favorable regulations that promote competition, in addition to a series of recommendations aimed at enhancing transparency.

2.2- Manual of best practices for the deployment of telecommunication networks in business and commercial properties with shared infrastructure[34]

This manual was created in 2023. It contains guidelines for developers, administrators, network operators and telecom service providers, and commercial and business customers owners of properties of a business or commercial with the aim of complementing the regulatory framework and encouraging the deployment of networks.

3 MERGERS AND ACQUISITIONS THAT WERE NOTIFIED AND ANALYZED

In August 2023, the Superintendency of Telecommunications, as the sector's competition authority, received a merger authorization request, filed by "Liberty Telecomunicaciones de Costa Rica LY, S.A."[35]. This transaction sought to purchase the portfolio of business customers of another service provider under the name of "Itellum Comunicaciones Costa Rica, S.R.L.", regarding the fixed Internet services, dedicated links, and MLPS networks. It also involved the termination of a contract signed with a wholesale telecommunications operator.

The proposed transaction would involve two relevant markets, namely: 1) the fixed business Internet service market; and 2) the data transfer market; such a transaction would be considered a horizontal merger.

Upon further analysis, and in accordance with SUTEL's Guidelines for Merger Analysis, it was determined that the transaction would not generate any negative foreseeable effects at a horizontal level on the market and that the notification fell in line with the principles of good notification procedure. Consequently, via opinion 013-2023, the Commission for the Promotion of Competition [COPROCOM] as the national competition authority, found that there was sufficient evidence to grant authorization.

In accordance with the merger analysis procedure outlined in Chapter V, Title III, of Act 9736, ratified by resolution RCS-288-2023 on November 30th, 2023, the Board of Directors of SUTEL approved the merger authorization request in the first stage of the process without imposing any conditions.

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[33] SUTEL (2023). Guidelines to Promote Competition in the Provision of Telecommunications Services in Real Estate Regulations with Common Infrastructure for Network Deployment. Retrieved on February 16th, 2023, from: https://www.sutel.go.cr/sites/default/files/lineamientos_para_reglamentos_condominales_vf.pdf

[34] SUTEL (2023). Best Practices for the Deployment of Telecommunication Networks in Business and Commercial Properties with Shared Infrastructure. Retrieved on February 16th, 2023, from: https://www.sutel.go.cr/sites/default/files/lineamientos_para_el_despliegue_de_redes_de_infraestructura_de_uso_comun_vf.pdf

[35] https://www.sutel.go.cr/pagina/casos-concentraciones

4 MARKET RESEARCH STUDIES

4.1- Market research study on pipeline infrastructure and its impact on competition[36]

The study analyzed the competition conditions of the pipeline infrastructure market and of alternative infrastructure, if any, that exists within the national market. The study found that pipeline infrastructure is insufficient and often located near urban areas, with the majority of ownership concentrated in a single company, the Costa Rican Institute of Electricity [ICE as per its acronym in Spanish].

The competitive conditions of the pipeline infrastructure and alternative infrastructure markets within the country, were adversely affected to some extent by the following: lack of incentives offered for development of additional infrastructure and the concessioning of the existing one, in addition to the lingering response of the competent authorities involved in some of these procedures.

The study also found the need to: (i) consider regulatory alternatives in light of the potential rigidity of supply and the increasing demand for pipeline infrastructure; (ii) promote the advantages that are associated with the development of this infrastructure; and (iii) improve the traffic capacity by deploying new technologies.

The study posts a series of recommendations with different time frames (short and long term); in the short term, the study suggests a review of the obligations regarding the disaggregation of public telecommunication networks, the standardization of norms and municipal licensing that regulate the installation of pipelines in public thoroughfares, the standardization of

authorizations granted by the Ministry of Public Works and Transport [MOPT] for the installation of pipelines in public thoroughfares under its jurisdiction, the publication of information related to the pipeline infrastructure built by districts in SUTEL's official web page, the advocacy of municipal regulations that promote the installation of fiber optic cables through microtrenching and the promulgation of regulations that allow for the installation of multiple pipelines in: free trade zones, condominiums, shopping centers, and industrial parks. Lastly, the study also recommends improving SUTEL's response time with respect to the resolution of conflicts arising from the use of this type of infrastructure.

In the long term, the study recommends improving the criteria for infrastructure sharing by subjecting the charges to replicability tests on an ongoing basis.

4.2- Market research study on the municipal regime and its impact on the deployment of infrastructure required for 5G networks[37]

The purpose was to identify the different barriers that could potentially affect the deployment of telecommunications infrastructure at a local level as well as preventing or restricting potential new competitors entry or the expansion of incumbent companies. The study also sought to provide tools designed to promote 5G services at a municipal level by fostering competition and offering investment incentives.

The recommendations mainly focus on the importance of simplifying, clarifying and standardizing the restrictions established by regulations. In addition, the study found that elements of discretion or uncertainty within the regulations and licensing processes undermine the network operators' incentives to invest in new infrastructure.

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[36] SUTEL (2023). Market research study on pipeline infrastructure and its impact on competition. Retrieved on February 16th, 2023, from: https://www.sutel.go.cr/sites/default/files/estudio_de_mercado_sobre_la_infraestructura_de_ductos_y_su_impacto_en_la_competencia_del_mercado_final_1_0.pdf

[37] SUTEL (2023). Market research study on the municipal regime and its impact on the deployment of infrastructure required for 5G networks. Retrieved on February 16th, 2023, from: https://www.sutel.go.cr/sites/default/files/estudio_mercado_barreras_despliegue_infraestructura_5g_1.pdf

Some of the indicators reveal both a degree of consistency among municipalities, while others reveal varying degrees of disparity, with some regulations showing significant deviations from the reference framework. This highlights the need to establish a national standard and the importance of improving response time of the municipalities. Lastly, the study identified and scrutinized elements established in the regulations that create imbalances in favor of incumbent companies in Costa Rica.

The study proposed a series of recommendations that should be taken by the MICITT and the Coordination Commission with respect to the installation or expansion of the telecommunications infrastructure to eliminate barriers affecting the deployment of the telecommunications infrastructure.

> FIXED
TELEPHONY

2023

Subscriptions

Fixed telephony subscriptions (POTS & VoIP) showed a different behavior to what has been observed in recent years, falling from 636 504 subscriptions in 2019 to 629 531 subscriptions by year's end in 2023 (1.10 %). This trend was more pronounced during the last year of analysis due to an increase of 140 601 subscriptions, which represented an annual growth rate of 28.76 %. Making this the first year in which the usual trend underwent a significant change since the opening of the telecommunications market in Costa Rica (see Graph 18).

It should be noted that this shift in the usual reported trends began in September 2023, in terms of the number of subscriptions, the traffic, and the revenue generated, and in particular with regard to Voice over Internet Protocol [VoIP] services, and was brought about by an improvement in the information available regarding measurement requirements, and in the reporting process for these indicators on the part of the Costa Rican Institute of Electricity.

That being the case, Graph 19 shows the evolution of VoIP subscriptions over the last five years, reflecting a shift in trends by the end of 2020 and an increase by the end of 2023, and reaching 267 508 subscriptions by year's end.

As for the percentage shares of this service for each of these technologies, the share ratios between them have remained fairly uneven despite a steady increase in the percentage share of VoIP subscriptions. Due to the increase reported in 2023, however, this ratio increased from 1 in 10 in 2019 to 4.2 out of every 10 fixed telephony subscriptions (see Graph 20).

An analysis of the fixed telephony subscriptions per quarter, from 2022 to 2023, shows that subscriptions to this service have steadily declined over the first six of the eight total quarters that comprise the period of analysis. This decline largely stemmed from the decrease in POTS subscriptions and the evolution of VoIP subscriptions during the latter half of the year. An average quarterly growth rate of 3.49 % was reported over these two years (see Table 33 in the Appendix).

Conversely, when analyzing the existing level of market concentration in terms of the provision of fixed telephony services, which include POTS and VoIP, ICE's position as incumbent operator must be emphasized and reiterated, given the provision of this service through the former of these technologies. As such, the Herfindahl-Hirschman Index [HHI] for 2023 reached a value of 7065 points, which represents an improvement of 114 points in relation to 2022 (which reported 7179 points). This result, however, is not substantially different from the estimate (8771 points) made on November 23rd, 2016 via resolution RCS-261-2016, during the first assessment of the fixed telephony retail market.

As stated in the aforementioned resolution (RCS-261-2016), the HHI shows, as a market structure indicator, that the recent influx of new competitors in the Costa Rican fixed telephony market has had a slight impact on the recomposition of market quotas, driven specifically by the dynamic behavior exhibited by VoIP telephony services.

The penetration of plain old telephone services, which is the ratio of the total POTS subscriptions to the total population in the country, has shown a downward trend nationwide, falling from 11.3 % in 2019 to 6.9 % in 2023 (see Graph 21). Conversely, the market penetration of Voice over Internet Protocol [VoIP] services in 2023,

> **corroborates the above, as it increased from 12.8 subscriptions per every 1000 inhabitants in 2019 to 50.8 subscriptions per every 1000 inhabitants in 2023**

(see Graph 22). The penetration of fixed telephony services has shown a downward trend, largely due to the behavior of the plain old telephone services, and fell from 12.6 % in 2019 to 12 % in 2023, as shown in Graph 23, per every 100 inhabitants.

In regard to the market share of VoIP services per operator, and the evolution of this service over the last two years, Graphs 24 and 25 show that the operator with the largest share in 2023 was the "Instituto Costarricense de Electricidad" [Kölbi] with 60.5 % of the market share. Moreover, in both of these two years, "Liberty Servicios Fijos LY Sociedad Anónima" [Liberty], "Millicom Cable Costa Rica S.A." [TIGO], and "Telecable, S.A." [Telecable] continue to rank within the leading network operators that provide this service.

Considering that fixed telephony services include public payphones, it is important to analyze the number of public payphones, and how their availability has changed, during the five-year period in question. Graph 26 shows a decrease in the number of public payphones, which fell from 3798 payphones in 2019 to 2454 payphones in 2023. This confirms the continuing downward trend shown since 2013, as stated in previous reports, given that the results show a decrease of 9 % in 2023 in relation to 2022, and a decrease of 35 % in relation to 2019.

Traffic

Fixed network telephone traffic continues to decline, falling from 1871 million minutes in 2019 to 808 million minutes in 2023, which represents an average annual reduction of 19.5 %. When analyzing the behavior during the previous year, the reduction reported (282 million minutes) represents a decrease of 25.9 % (see Graph 27).

In contrast, however, VoIP telephony traffic continues to show a steady growth rate. As such, VoIP minutes increased from 241 million minutes in 2019 to 242 million minutes in 2023. An analysis of the growth rate over the last year, however, shows an increase of 43 million minutes by year's end, which represents an increase of 21.6 % in relation to 2022 (see Graph 28).

An analysis of the traffic per quarter, from Q1 in 2022 to Q4 in 2023, confirms the downward trend in the telephone traffic of fixed telephony services, which has been continuously declining prior to the eight quarters

in question, largely due to the reduction over time of traffic over the POTS network (see Graph 29). Similarly, a breakdown of the quarterly figures for both of these services from 2019 to 2023 is shown in Tables 37 and 39 (see Appendix).

In regard to the percentage share of telephone traffic reported by operators engaged in the provision of VoIP services, five operators accounted for 78.8 % of the total traffic in 2022, to wit (in alphabetical order): "Call My Way S. A." [Call my Way], "Liberty Servicios Fijos LY Sociedad Anónima" [Liberty], "R & H International Telecom Services S. A." [R&H], "Telecable, S. A." [Telecable], & "Millicom Cable Costa Rica S. A." [TIGO]. In 2023, however, these same operators accounted for 79.6 % of the total traffic in the following rank order (alphabetically): "Call My Way S.A." [Call My Way], "Instituto Costarricense de Electricidad" [Kölbi], "Liberty Servicios Fijos LY Sociedad Anónima" [Liberty], "Telecable, S. A." [Telecable], & "Millicom Cable Costa Rica S. A." [TIGO]. This increase in the operators' percentage share is attributable to Kölbi's records and its percentage share of the total traffic for this service (see Graphs 30 and 31).

In regard to the evolution of outbound domestic fixed telephony traffic to fixed and mobile networks in 2019-2023, it appears –as in previous years– that outbound traffic to mobile networks continues to show a downward trend. Outbound traffic to fixed networks, however, shows significant fluctuations, but with an overall downward trend in the last five years. Particularly in 2023, which reported an increase of 260 233 minutes in relation to 2022 (see Graph 32).

On the other hand, total inbound fixed telephony traffic showed an average annual reduction of 8.3% from 2019 to 2023. In particular, traffic fell from 9935 million minutes in 2022 to 9150 million minutes in 2023, reflecting a decrease of 7.9 % (see Graph 33).

In regard to international fixed telephony traffic in 2019-2023, inbound and outbound traffic shows a downward trend, falling from 810 thousand to 424 thousand inbound minutes, and from 301 thousand to 169 thousand outbound minutes, which represent a decrease of 47.0 % and 43.7 %, respectively. In the last year under analysis, total traffic fell from 659 thousand minutes in 2022 to 593 thousand minutes in 2023, which represents a decrease of 2.3 % in inbound international traffic, and a decrease of 24.9 % in outbound international traffic (see Graph 34).

Finally, an estimate of the average traffic per subscriber is obtained from the service's traffic analysis. Plain old telephone service subscribers averaged 2849 minutes of traffic in 2019, falling to 1563 minutes in 2023, which represents an annual reduction of 45.1 % for the period. VoIP services are in a similar situation, where the average annual traffic per user decreased from 3730 minutes in 2019 to 903 minutes in 2023, which represents an average annual reduction of 75.8 %, caused largely by the decrease of 69.6 % during the last year (see Graph 35).

Revenue

The revenue generated by the provision of fixed telephony services, much like the number of subscriptions and the amount of telephone traffic, has shown a downward trend from 2019 to 2023. Fixed telephony services, for example, generated 58 996 million colones in revenue in 2019, and fell to 28 986 million colones in revenue in 2023. This represents a decrease of 50.9 % for the period and an annual average reduction of 16.8 % (see Graph 36).

Compared to plain old telephone services [POTS], however, VoIP technology has shown a markedly different behavior in terms of revenue. Specifically,

> the revenue earned from this service has increased over time, rising from 6856 million colones in 2019 to 7888 million colones in 2023.

In regard to 2023, however, revenue increased by 1818 million colones in relation to 2022, which represents an increase of 29.9 % (see Graph 37).

A quarterly breakdown of the revenue generated by the provision of this service over the last two years reveals that the revenue from fixed telephony services shows a fluctuating quarterly trend. Falling by 1318 million colones from Q1 2022 to Q1 2023 (16 %), and increasing by 1156 million colones (15 %) from Q4 2022 to Q4 2023 (see Graph 38).

In regard to the revenue from international fixed telephony traffic in 2019-2023, inbound and outbound traffic shows a downward trend. Corroborating the above, revenue from inbound traffic fell from 407 million colones to 181 million colones, which represents a decrease of 55 % over the five-year period under analysis. Similarly, revenue from outbound traffic fell from 1869 million colones to 425 million colones from 2019 to 2023, which represents a decrease of 77 %. In particular, over the last year, revenue from inbound traffic decreased by 34 %, while the revenue from outbound traffic decreased by 29 % (see Graph 39).

In the same manner, the average revenue per user [ARPU] is estimated by comparing the revenue to the number of subscribers. The average revenue per user, in 2023, was 58 277 for plain old telephone services, and 29 487 for VoIP services, which represents a decrease of 7 % and 61.9 %, respectively, in relation to 2022 (see Graph 40 and Table 44 in the Appendix).

Graph 41 shows the average revenue per minute of plain old telephone service users and VoIP service users, confirming the above. From 2019 to 2023, the average revenue per minute for plain old telephone services showed an upward trend, rising from 32 colones to 37 colones per minute, as did the average revenue per minute for VoIP services, which increased from 28 colones to 33 colones per minute. Moreover, as of January 2023, the Board of Directors of the Superintendency of Telecommunications agreed[38] to set a new cap or maximum rate for the fixed telephony retail market (POTS & VoIP).

Graph 18. Costa Rica: Plain old telephone service [POTS] & VoIP telephony subscriptions in 2019-2023
(yearly figures)

636 504   556 617   500 550   488 930   629 531

2019   2020   2021   2022   2023
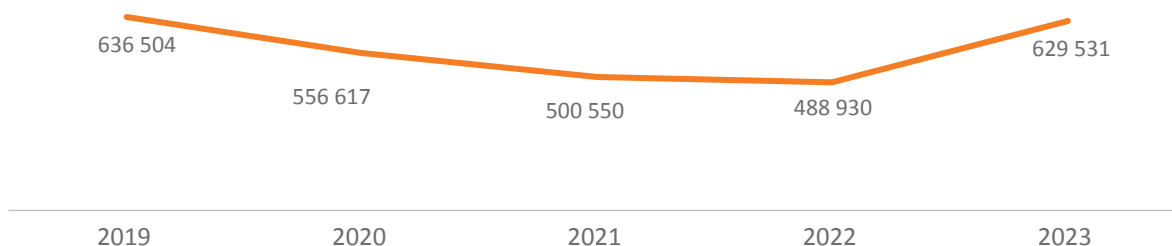
Source: SUTEL, General Directorate of Markets, Costa Rica, 2023.

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38   Resolution RCS-330-2022 was published in scope 7 of the Official Gazette "La Gaceta" No. 8 on January 18th, 2023.

Graph 19. Costa Rica: VoIP subscribers in 2019-2023
(yearly figures)

	2019	2020	2021	2022	2023
	64 696	52 341	56 866	78 476	267 508
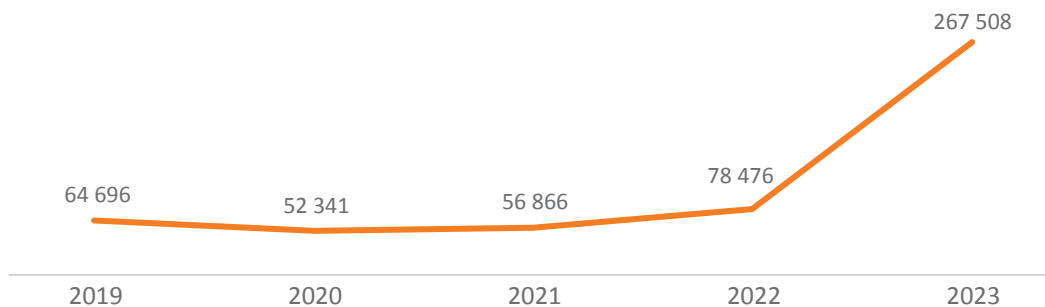
Source: SUTEL, General Directorate of Markets. Costa Rica, 2023.

Graph 20. Costa Rica: Percentage of Plain Old Telephone Service [POTS] & VoIP telephony subscriptions in 2019-2023
(yearly figures)

	2019	2020	2021	2022	2023
VoIP	10,2 %	9,4 %	11,4 %	16,1 %	42,5 %
POTS	89,8 %	90,6 %	88,6 %	83,9 %	57,5 %

● Plain old telephone service [POTS]   ● VoIP
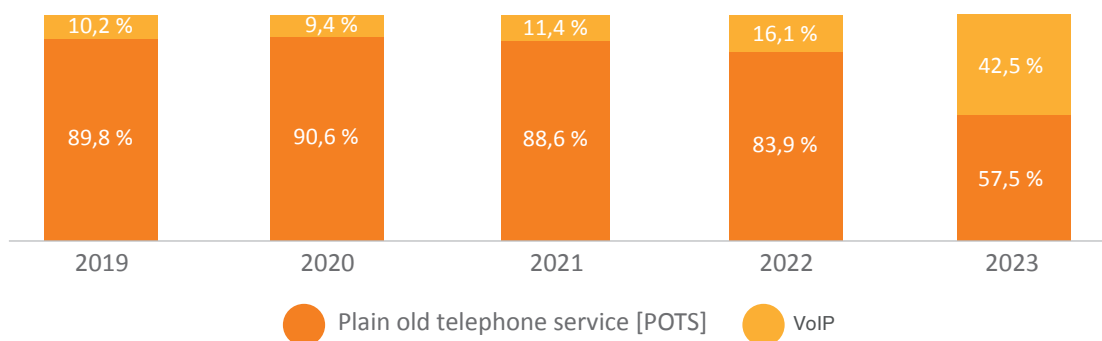
Source: SUTEL, General Directorate of Markets. Costa Rica, 2023.

Graph 21. Costa Rica: Market penetration of Plain Old Telephone Service [POTS] in 2019-2023
(subscriptions per 100 inhabitants)

	2019	2020	2021	2022	2023
	11,3	9,9	8,6	7,9	6,9
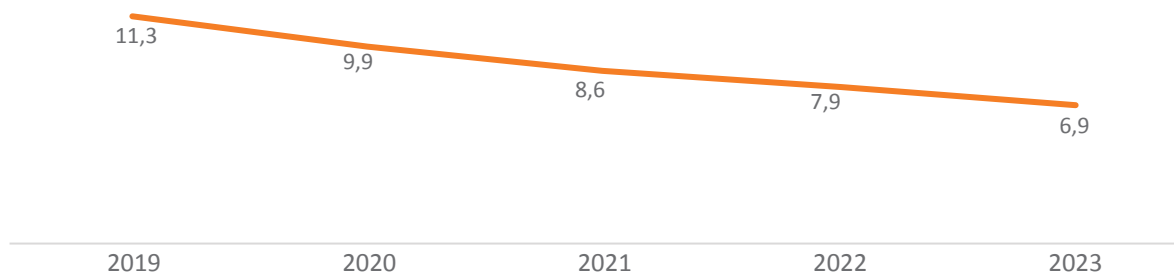
Source: SUTEL, General Directorate of Markets. Costa Rica, 2023.

Graph 22. Costa Rica: Market penetration of VoIP telephony services in 2019-2023
(subscriptions per 1000 inhabitants)

2019	2020	2021	2022	2023
12,8	10,2	11	15,1	50,8
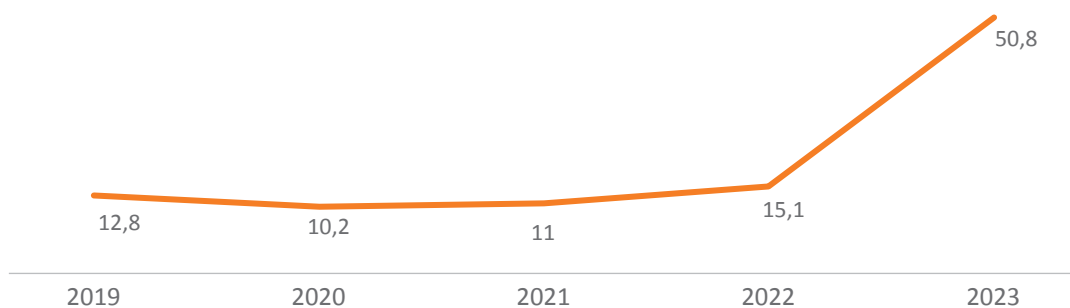
Source: SUTEL, General Directorate of Markets. Costa Rica, 2023.

Graph 23. Costa Rica: Market penetration of fixed telephony services in 2019-2023
(subscriptions per 100 inhabitants)

2019	2020	2021	2022	2023
12,6	10,9	9,7	9,4	12
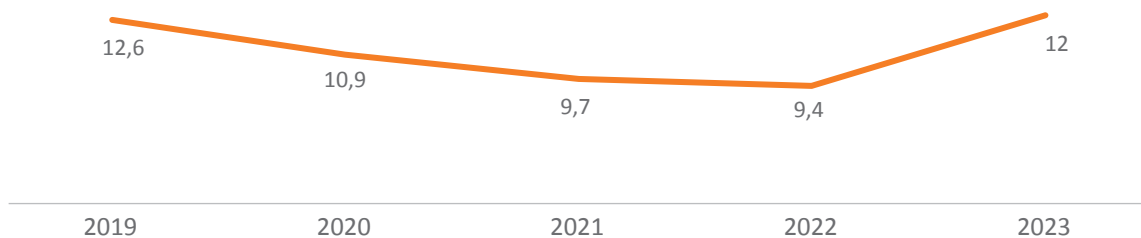
Source: SUTEL, General Directorate of Markets. Costa Rica, 2023.

Graph 24. Costa Rica: Market share of VoIP subscribers per operator in December 2022
(figures in percentage terms)

- Liberty: 70,1 %
- Millicom Cable Costa Rica, S. A. (Tigo): 10,9 %
- Telecable, S. A.: 8,2 %
- R & H, S.A: 3,9 %
- Call My Way, S. A.: 2,7 %
- Others: 4,3 %
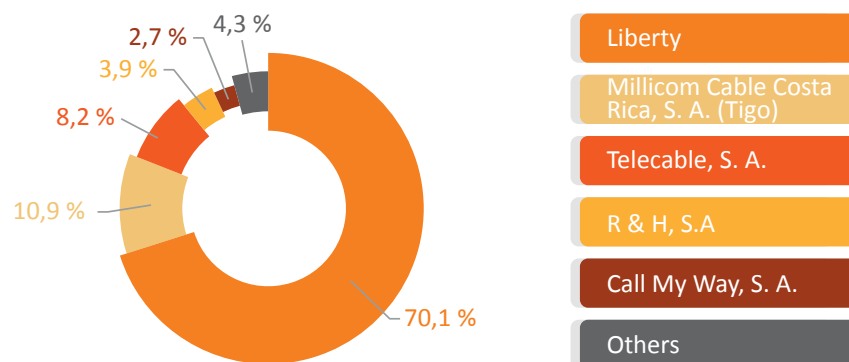
Source: SUTEL, General Directorate of Markets. Costa Rica, 2023.

Graph 25. Costa Rica: Market share of VoIP subscribers per operator in December 2023
(figures in percentage terms)

- Ice (Kolbi) — 60,5 %
- Liberty — 27,3 %
- Millicom Cable Costa Rica S.A. (Tigo) — 5,2 %
- Telecable, S.A. — 2,7 %
- R & H International Telecom Services S.A. — 1,3 %
- Others — 2 %
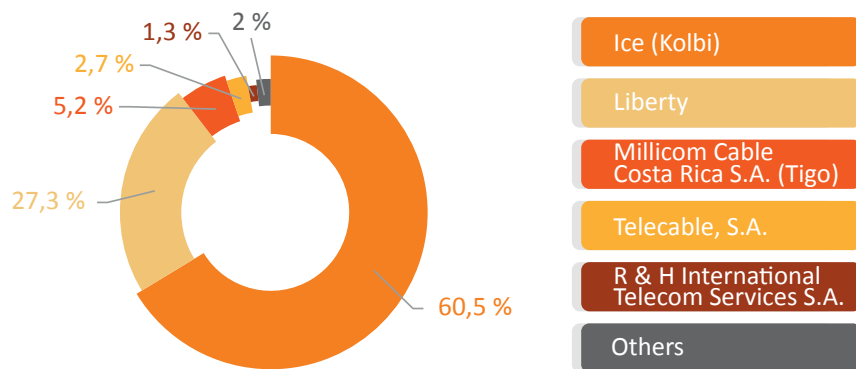
Source: SUTEL, General Directorate of Markets. Costa Rica, 2023.

Graph 26. Costa Rica: Number of public payphones in operation in 2019-2023
(yearly figures)

2019	2020	2021	2022	2023
3798	3265	2905	2683	2454
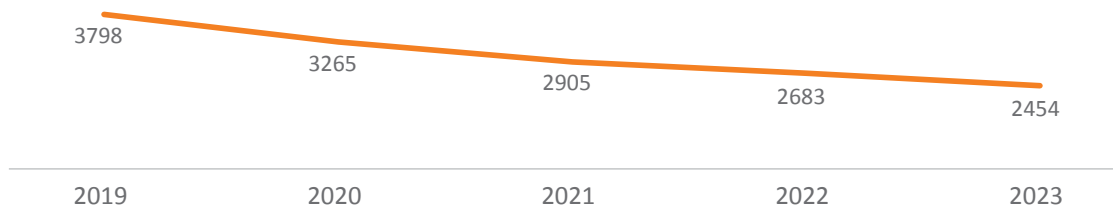
Source: SUTEL, General Directorate of Markets. Costa Rica, 2023.

Graph 27. Costa Rica: Fixed telephony traffic in 2019-2023
(millions of minutes per year)

2019	2020	2021	2022	2023
1871	1647	1353	1089	808
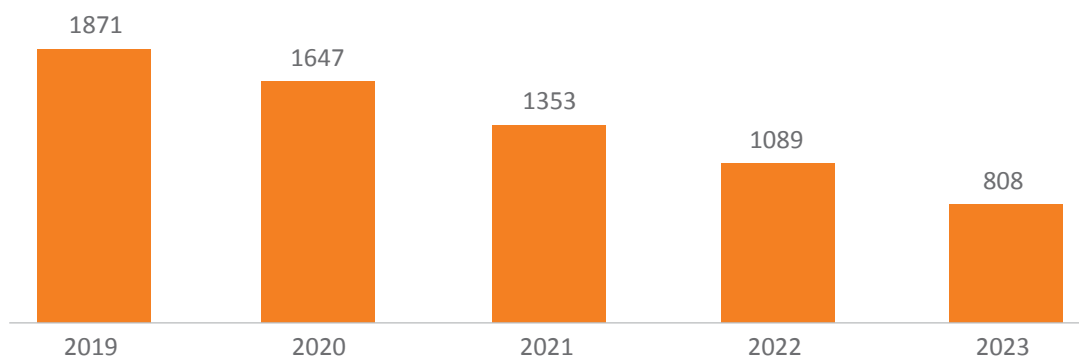
Source: SUTEL, General Directorate of Markets. Costa Rica, 2023.

Graph 28. Costa Rica: VoIP telephony traffic in 2019-2023
(millions of minutes per year)

241 183 177 199 242

2019   2020   2021   2022   2023
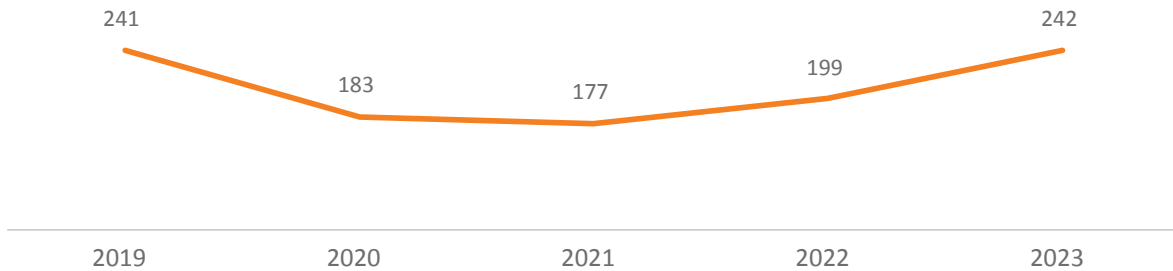
Source: SUTEL, General Directorate of Markets. Costa Rica, 2023.

Graph 29. Costa Rica: Fixed telephony traffic in 2022-2023
(quarterly figures in millions of minutes)

	Q1	Q2	Q3	Q4
2022	298	296	257	239
2023	218	204	196	190

● 2022   ● 2023
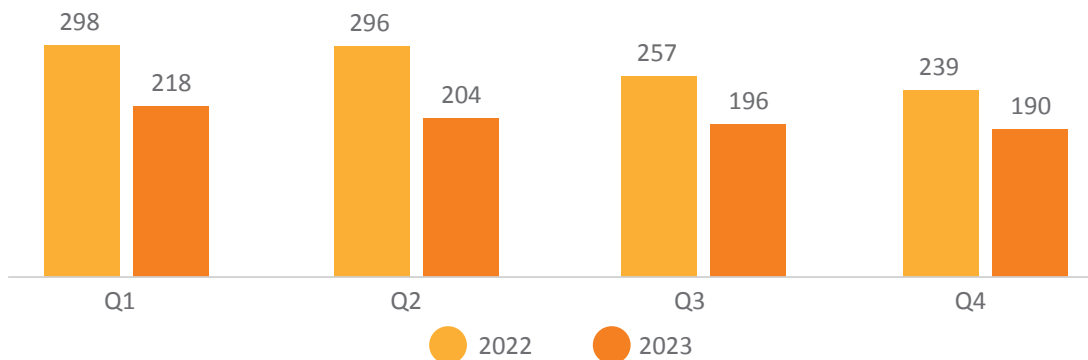
Source: SUTEL, General Directorate of Markets. Costa Rica, 2023.

Graph 30. Costa Rica: Market share of VoIP telephony traffic per service provider in 2022
(Figures in percentage terms)

21,2 %

78,8 %

Five largest operators

Remaining operators
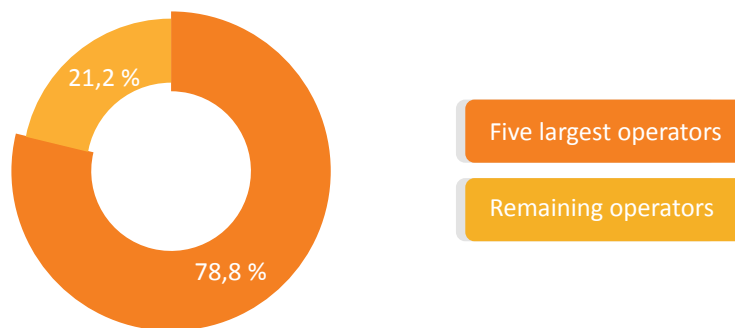
Source: SUTEL, General Directorate of Markets. Costa Rica, 2023.

Graph 31. Costa Rica: Market share of VoIP telephony traffic per service provider in 2023
(Figures in percentage terms)

20,4 %

79,6 %

Five largest operators

Remaining operators
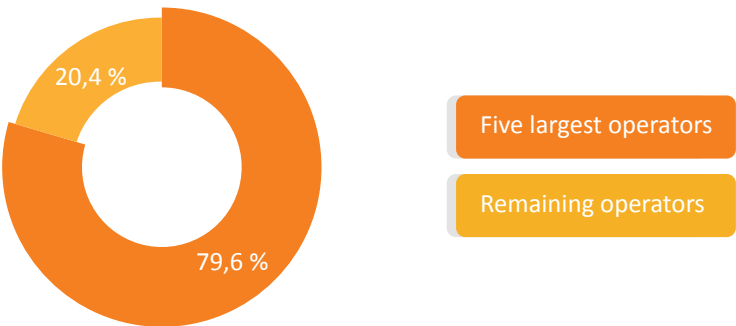
Source: SUTEL, General Directorate of Markets. Costa Rica, 2023.

Graph 32. Costa Rica: Outbound domestic fixed telephony traffic to fixed and mobile networks in 2019-2023
(yearly figures in thousands of minutes)

	2019	2020	2021	2022	2023
Mobile Networks	8593	7766	6601	5303	4187
Fixed Networks	1244	911	756	895	635

●●●● Fixed Networks ━━━ Mobile Networks
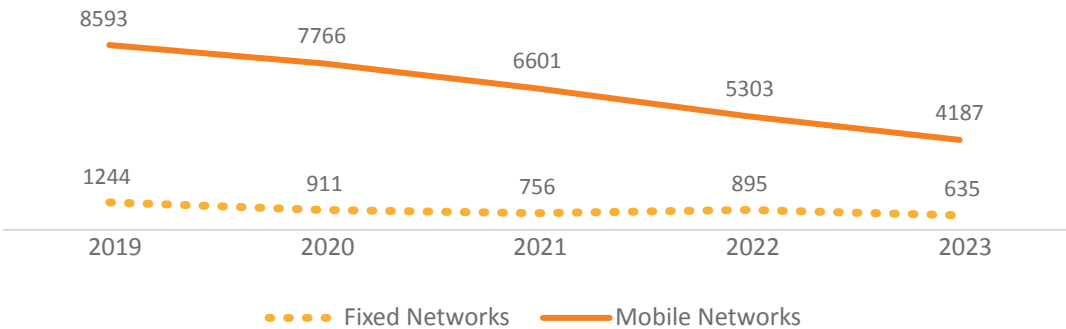
Source: SUTEL, General Directorate of Markets. Costa Rica, 2023.

Graph 33. Costa Rica: Total inbound fixed telephony traffic in 2019-2023
(yearly figures in thousands of minutes)

2019	2020	2021	2022	2023
12 931	12 864	11 708	9935	9150
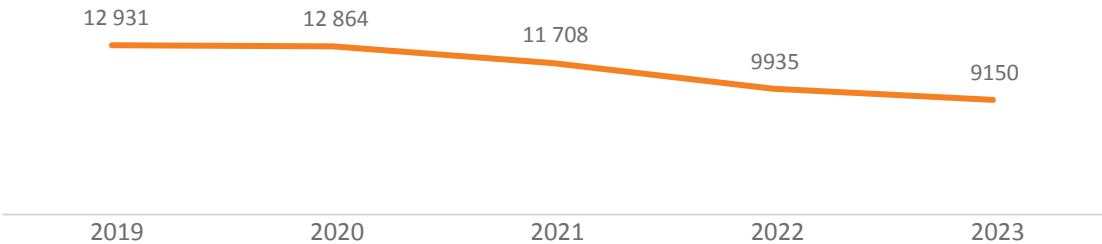
Source: SUTEL, General Directorate of Markets. Costa Rica, 2023.

Graph 34. Costa Rica: International fixed telephony traffic per type in 2019-2023
(yearly figures in thousands of minutes)

Inbound: 810 (2019), 676 (2020), 572 (2021), 434 (2022), 424 (2023)
Outbound: 301 (2019), 224 (2020), 217 (2021), 225 (2022), 169 (2023)

Legend: Inbound, Outbound
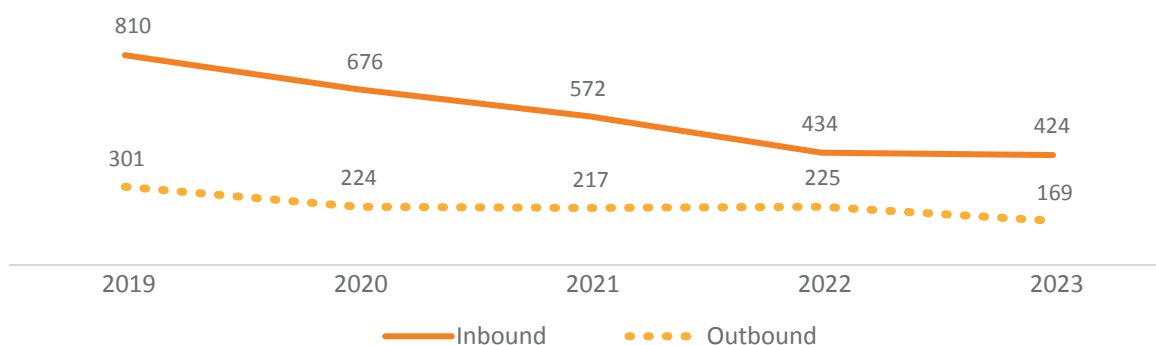
Source: SUTEL, General Directorate of Markets. Costa Rica, 2023.

Graph 35. Costa Rica: Average traffic per fixed telephony subscriber by type of connection (i.e.: POTS & VoIP) in 2019-2023
(figures in minutes)

VoIP: 3730 (2019), 3501 (2020), 3117 (2021), 2531 (2022), 903 (2023)
POTS: 2846 (2019), 2902 (2020), 2651 (2021), 2170 (2022), 1563 (2023)

Legend: POTS, VoIP
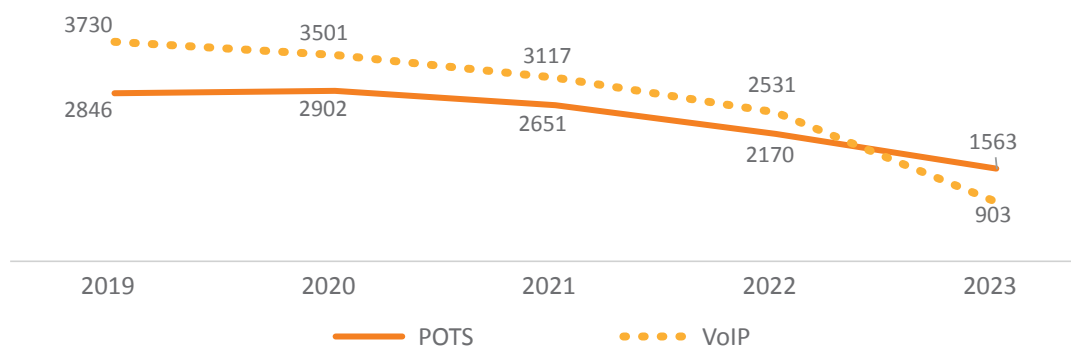
Source: SUTEL, General Directorate of Markets. Costa Rica, 2023.

Graph 36. Costa Rica: Revenue from fixed telephony services in 2019-2023
(figures in millions of colones)

58 996 (2019), 46 884 (2020), 37 982 (2021), 31 791 (2022), 28 896 (2023)
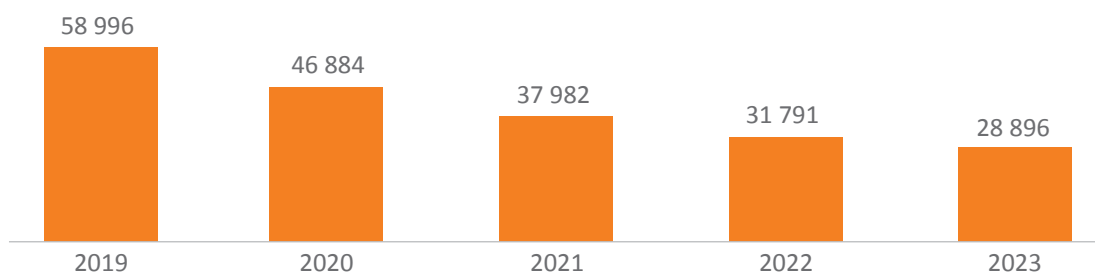
Note: This includes revenue from POTS and VoIP.
Source: SUTEL, General Directorate of Markets. Costa Rica, 2023
.

Graph 37. Costa Rica: Revenue from VoIP telephony services in 2019-2023
(figures in millions of colones)

2019	2020	2021	2022	2023
6856	6261	6205	6070	7888
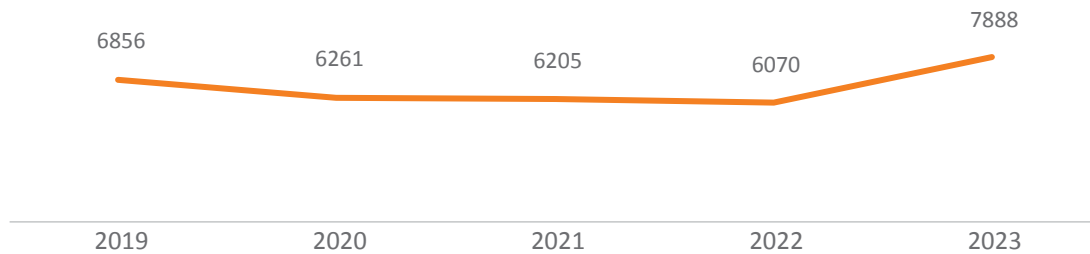
Source: SUTEL, General Directorate of Markets. Costa Rica, 2023.

Graph 38. Costa Rica: Revenue from fixed telephony services in 2022-2023
(quarterly figures in millions of colones)

	Q1	Q2	Q3	Q4
2022	8370	8138	7808	7474
2023	7052	6765	6538	8631

● 2022 ● 2023
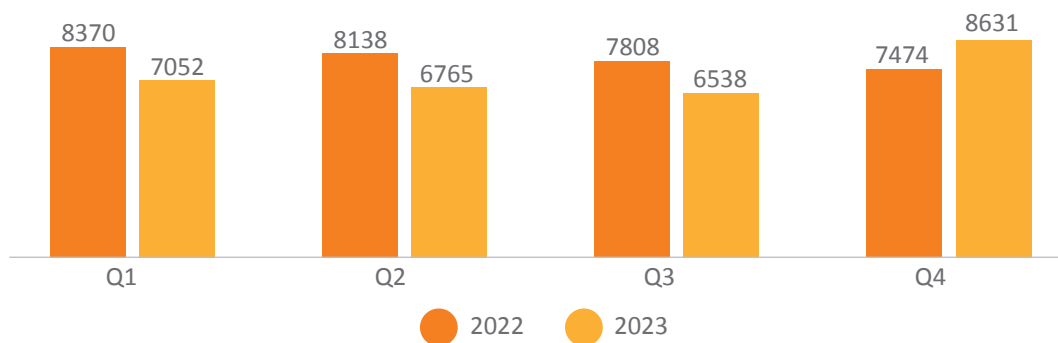
Source: SUTEL, General Directorate of Markets. Costa Rica, 2023.

Graph 39. Costa Rica: Revenue from international fixed telephony per type of service in 2019-2023
(yearly figures in colones)

	2019	2020	2021	2022	2023
Revenue from outbound international traffic	1869	1139	769	593	425
Revenue from inbound international traffic	407	401	415	276	181

•••• Revenue from outbound international traffic ——— Revenue from inbound international traffic
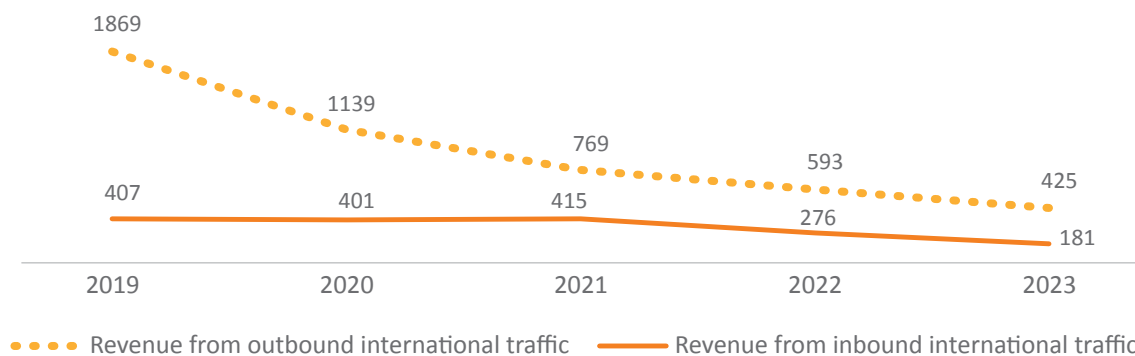
Source: SUTEL, General Directorate of Markets. Costa Rica, 2023.

Graph 40. Costa Rica: Average revenue per fixed telephony subscriber by type of connection POTS & VoIP services in 2019-2023

(yearly figures in colones)

	2019	2020	2021	2022	2023
VoIP	105 980		109 112	77 352	29 487
POTS	91 184	80 556	71 692	62 663	58 277

—— VoIP   •••• POTS
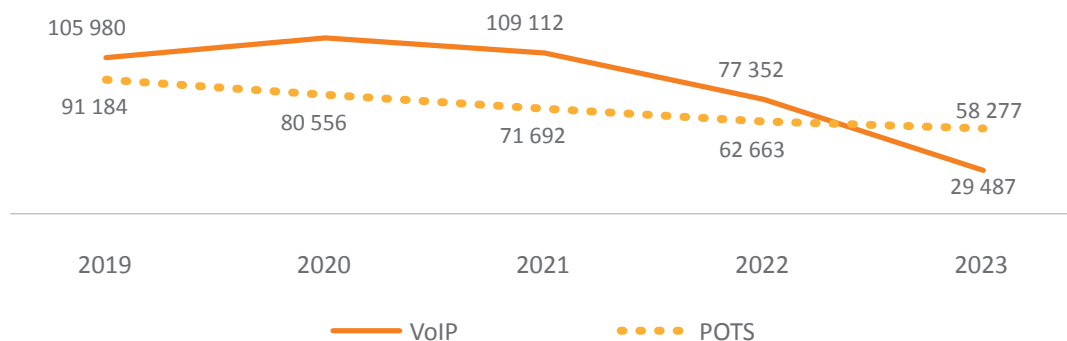
Source: SUTEL, General Directorate of Markets. Costa Rica, 2023.

Graph 41. Costa Rica: Average revenue per minute of fixed telephony service by type of connection POTS & VoIP services in 2019-2023

(yearly figures in colones)

	2019	2020	2021	2022	2023
POTS	32		35	31	37
VoIP	28	34	27	29	33

—— VoIP   •••• POTS
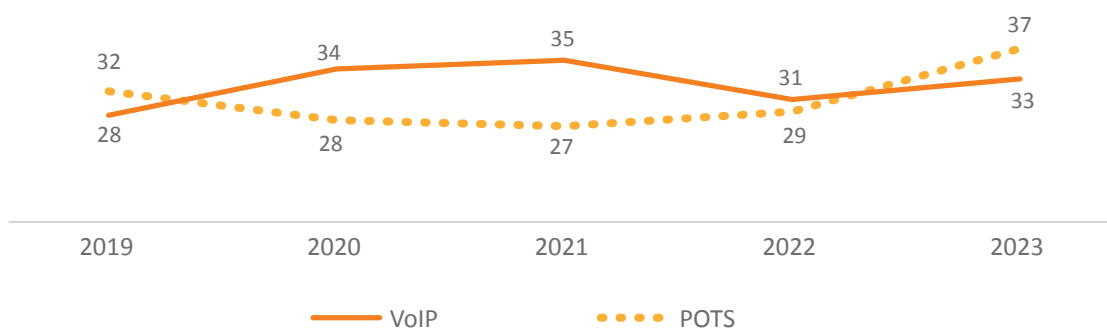
Source: SUTEL, General Directorate of Markets. Costa Rica, 2023.

❭ MOBILE
TELE
COMMUNICATIONS

2023

Mobile telecommunication services are the services that are provided between a mobile station and a fixed station or between mobile stations only. Radio waves are required in order to provide these services, making mobile telecommunications a subgroup of radio communications. These services can be classified as maritime mobile services, aeronautical mobile services, and land mobile services, the latter of which is the focus of study for this chapter of the report. For this reason, with the purpose of including all of these services within a single section, starting this year, the section will include mobile telephony services (which itself includes domestic and international telephony), roaming services, and mobile Internet services, to provide the reader with a comprehensive view of the services specified above.

MOBILE TELEPHONY

Subscriptions[39]

7 443 281 subscriptions were reported in 2023 (see Graph 42), which represents a decrease of 5.5 % in relation to the previous year (7 876 163 subscriptions). This change is largely due to a decrease of 12.6 % in prepaid subscriptions and an increase of 6.1 % in postpaid subscriptions.

The data presented above yields a market penetration of 141.4 %, which represents a decrease of 9.6 percentage points in relation to 2022, the year with the highest reported number of subscriptions since the superintendency started tracking statistics in 2010 (see Graph 43).

Regarding payment options (see Graphs 44, 45 and 46), postpaid subscriptions reported an increase, in terms of the share of total mobile telephony subscriptions, of 42.8 % in 2023 (the highest ever reported). Conversely, prepaid subscriptions accounted for the remaining 57.2 %. It should be noted that postpaid

subscriptions have shown an upward trend since 2013, when they represented 17 % of total subscriptions (see Table 46 in the Appendix).

Regarding the market share per operator in 2023, Liberty accounted for 45.3 % of total subscriptions, followed by Kölbi (34 %) and Claro (20.7 %). It should be noted, however, that Kölbi was the only operator that managed to increase their market share in relation to 2022.

Regarding the market share per operator by payment option, Liberty accounted for 53.2 % of total prepaid subscriptions, followed by Kölbi (28.2 %) and Claro (18.6 %), while Kölbi accounted for 41.8 % of total postpaid subscriptions, followed by Liberty (34.8 %) and Claro (23.4 %) (see Graphs 47 and 48).

The preceding shares result in a HHI[40] [Herfindahl-Hirschman Index[41]] value of 3638 for 2023 (see Graph 49). It is worth noting that, in spite of the improvements shown in the measure of market concentration, the market is still considered to be concentrated in accordance with the methodology used to analyze the level of competition in the telecommunications market established by the Board of Directors of SUTEL via resolution RCS-082-2015.

Traffic

Voice traffic from mobile telephony services (domestic and international) continues to show a downward trend, with voice call minutes totaling 3947 million minutes, which represents a decrease of 12.8 % in relation to 2022 (see Graph 50).

This reduction in traffic was mainly caused by a decrease in the number of subscriptions (-5.5 %) and in the average time spent per month by subscriber, which fell from 48 minutes per month in 2022 to 44 minutes per month in 2023 (-8.3 %).

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[39] Work is presently underway to develop an indicator for mobile telephony subscriptions that has the capacity of differentiating between subscriptions that have engaged in international telephony activities. For that reason, the data presented herein represents all active subscriptions, regardless of whether or not they made or sent any international voice calls and/or messages.

[40] The HHI value for 2016 (when the mobile telecommunications market was found to be under fair competitive conditions) was 3891.

[41] https://es.wikipedia.org/wiki/Indice_de_Herfindahl. The Herfindahl-Hirschman Index [HHI] is a measurement used in economics to determine the degree of economic concentration in a market. Or, conversely, the lack of competition. A high index value indicates a highly concentrated and anti-competitive market.

In regard to payment options, the average time spent per month by postpaid subscriber fell from 98 minutes per month in 2022 to 82 minutes per month in 2023 (-16.3 %), while the average time spent per month by prepaid subscriber fell from 17 minutes per month to 16 minutes per month (-5.9 %) (see Graph 51).

An important milestone was reached in 2023 when the ratio of postpaid to prepaid traffic achieved its highest recorded value with 3.9 minutes, surpassing the 3.5 minutes reported in 2022 (which showed an upward trend since 2014). In other words, for every minute of traffic from a prepaid subscriber there are 4 minutes of traffic from a postpaid subscriber. This is largely due to an increase in postpaid subscribers, which rose to 79.4 % in 2023 versus 20.6 % with respect to the prepaid payment option (see Graph 52).

In regard to voice call destinations, behavior remains largely unchanged in relation to previous years, with mobile on-net voice calls accounting for 48.8 % of the total, followed by mobile off-net voice calls with 28 %, fixed network voice calls with 20.1 %, and international voice calls with 3.1 %. Notwithstanding the above, it should be noted that voice calls to other fixed networks reported the largest market share growth, with an increase of 1.4 percentage points in relation to 2022 (see Graph 53).

In regard to text messaging, 1444 million messages were reported in 2023, which represents an increase of 2.5% in relation to 2022, continuing the upward trend observed since 2021. A potential explanation for this upward trend is the steady increase in the utilization of "Sinpe Móvil" [a mobile payment system]. Of the total number of messages that were sent, 99.8 % of them were sent to a domestic destination, while 0.2 % were sent to an international destination. This slight increase in the number of messages is the result of an increase in the average traffic per user, which rose from 15 in 2022 to 16 in 2023 (see Graphs 54 and 55).

Domestic mobile telephony

Total outbound traffic to a domestic destination continues to show a downward trend, falling to 3827 million minutes (-12.6 %) in relation to the previous year. In regard to voice call destinations, behavior remains largely unchanged since 2019, with mobile on-net traffic accounting for 50.3 % of the total, followed by mobile off-net traffic with 28.9 %, and voice call traffic to fixed telephony networks with 20.8 %. It should be noted, however, that the latter of these services reported substantial growth with an increase of 2.6 percentage points in relation to 2022 (see Graph 56).

Domestic messaging services increased by 2.6 % and totaled 1441 million messages. 69.2 % of these messages were sent to users in other networks (off-net), while the remaining 30.8 % were sent to users within the same network (on-net) (see Graph 57).

International mobile telephony

International voice call traffic has shown a downward trend since 2020, falling to 291 million minutes by the end of 2023. This represents a decrease of 16.9 % in relation to 2022. Out of this total, 58.6 % of calls were inbound international voice calls and 41.4 % were outbound international voice calls. It should be noted that, over the years, the total share of outbound international voice calls continues to show a downward trend (see Graph 58).

Lastly, text messaging traffic showed a downward trend in relation to 2021 and 2022, falling from 5 million messages to 3 million messages in 2023 (a decrease of 40 % in relation to 2022) (see Graph 59).

In general, mobile telephony services, traffic and voice calls (minutes) decreased by 12.8 % in relation to 2022. This behavior was then further supported by a decrease of 19.3 % in prepaid traffic and of 10.9 % in postpaid traffic. This decline has resulted in an even larger gap in the minutes of usage per month between the two payment options (3.9 minutes of postpaid traffic for every one minute of prepaid traffic).

Revenue

Even though the revenue from mobile telephony services (domestic and international) continues to show a

downward trend, the negative growth rate diminished in 2023 with a decrease of 1.9 % in relation to 2022, reaching 177 930 million colones in view of the fact that voice calls decreased by 0.5 % (this being the lowest recorded decrease in the period under analysis), and that text messaging services decreased by 42.9 %, in relation to 2022.

It should be noted that the revenue earned from these services (voice and messaging) is highly disproportionate, considering that voice services account for 98.1 % of the revenue, while text services only account for 1.8 % of the revenue (see Graph 60).

Regarding subservices, 95.2 % of the revenue comes from domestic mobile telephony services, which decreased by 0.5 %, while the remaining 4.8 % comes from international mobile telephony services, which decreased by 25.2 % in relation to 2022 (see Graph 61).

Considering that revenue fell by a smaller margin than the number of subscriptions, the revenue earned from subscriptions reported an increase. As a result, each subscriber contributes approximately 1992 colones per month (which represents an increase of 4.2 % in relation to 2022). Of this total, 37 colones are from text messaging services, while the remaining 1955 colones are from voice services. It should be noted that, while an increase was in fact reported, it is the second lowest increase observed in the years under analysis (see Graph 62).

In regard to payment options, postpaid plans account for 86.4 % of the total revenue from mobile telephony services (an increase of 3.7 percentage points in relation to 2022), while prepaid plans account for the remaining 13.6 %, which is to say that for every colon earned from prepaid plans, there are 6.4 colones earned from postpaid plans. This is the highest ratio ever reported in the period under analysis (see Graph 63).

Domestic mobile telephony

Revenue from domestic mobile telephony remained largely unchanged, falling to 169 436 million colones and showing a slight decrease of 0.5 % in relation

to 2022, 98.2 % of which came from domestic voice calls, while 1.8 % came from domestic text messages (see Graph 64).

It should be noted that revenue from voice services increased by 0.8 %, contrary to its usual downward trend, reaching a total of 166 431 million colones, largely due to an increase of 3.8 % in the revenue from outbound traffic, and in contrast with a decrease of 17.8 % in the revenue from inbound traffic[42] (see Graph 65).

Domestic text messages reported 3005 million colones in revenue by the end of 2023, the lowest amount ever reported in the period under analysis. This represents a decrease of 42.7 % in relation to 2022 (see Graph 66).

International mobile telephony

Revenue from international mobile telephony services reached 8494 million colones in 2023, which represents a decrease of 22.5 % in relation to the previous year. This is the lowest amount ever reported, continuing the downward trend observed thus far. Of this total, 96.1 % of the revenue comes from voice services, while 3.9 % of the revenue comes from text messaging services (see Graph 67).

Revenue from voice services reached 8167 million colones in 2023. Of this total, 56.7 % comes from outbound international calls while the remaining 44.3 % comes from inbound international calls. Moreover, in regard to payment options, the proportions remain largely the same, with 48.9 % coming from prepaid plans and 51.1 % coming from postpaid plans (see Graphs 68 and 69).

In general, total revenue from mobile telephony services continued to show a downward trend. This year in particular, however, the decrease reported was much less pronounced (-1.9 % in relation to 2022), partly due to the fact that voice traffic decreased at a lower rate than in previous years, and partly due to the price drop in telecommunication services (see Graph 184 in the section titled "Commercial Offers and Prices").

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[42]   The revenue from inbound voice call traffic includes revenue from wholesale interconnection services.

ROAMING[43]

Roaming services allow users to continue using their mobile phones and devices to make and receive voice calls and text messages, and to browse the Internet, while traveling in another country. The data on traffic and revenue reported in 2023 is shown below.

Traffic

Voice traffic fell to 42 million minutes in 2023, a decrease of 6.7 % in relation to 2022. It should be noted, however, that the COVID-19 pandemic significantly and adversely affected voice traffic, peaking at approximately 40 million minutes per year in the last four years, when in 2019 total voice traffic had reached 80 million minutes. Of the total traffic reported in 2023, 90.4 % came from inbound voice call roaming services, while the remaining 9.6 % came from outbound voice call roaming services. These proportions have remained largely unchanged over the last five years (see Graph 70).

In regard to text messaging, roaming traffic fell to 22 million messages, which represents a decrease of 4.3 % in relation to the previous year. Of this total, 63.1 % comes from inbound text messaging roaming services, while the remaining 36.9 % comes from outbound text messaging roaming services (see Graph 71).

Conversely, roaming data traffic achieved its highest reported value over the last five years (5268 TB), which represents an increase of 57.9 % in relation to the previous year. Of this total, 26.9 % of traffic came from outbound roaming data, while 73.1 % of traffic came from inbound roaming data. These proportions have remained largely unchanged in the period under analysis (see Graph 72).

Revenue[44]

Total revenue from outbound roaming services increased by 1.5 % in relation to the previous year. This

change was largely driven by an increase of 11.6 % in the revenue from data services, and a decrease of 14 % and 28.6 % in the revenue from voice and messaging services, respectively.

It should be noted that the market share of total revenue from roaming services is as follows: data services account for 74.5 % of the total, while voice and messaging services account for 16.7 % and 8.8 %, respectively. It can therefore be deduced that the increase in revenue from data services offsets the decrease in revenue from voice and, especially, messaging services.

In regard to the market share per component, it should be noted that, throughout the five-year period under analysis, the revenue from roaming data services continues to increase year-over-year, rising from 49.1 % in 2019 to 74.6 % in 2023. Moreover, it should also be noted that voice services lost the most market share out of all the services, falling from 43 % to 16.7 % over the same period (see Graphs 73, 74, 75 and 76).

In conclusion, roaming services have dropped to a record low after the pandemic, falling to 40 million minutes per year, and have remained largely unchanged

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[43] Work is presently underway to develop an indicator that is capable of determining the number of active roaming service subscriptions.
[44]This includes revenue from outbound roaming services only, as inbound roaming services (i.e.: an international user using roaming services within the country) is considered to be wholesale revenue by the International Telecommunication Union.

over the last four years. At the same time, however, roaming data services have shown an upward trend, increasing by 57.9 % in the last year. This increase has offset the decrease in voice and messaging services to such an extent that the total revenue from roaming services has risen instead of fallen.

MOBILE INTERNET

Subscriptions

A total of 5 183 454 mobile Internet subscriptions were reported in 2023. This represents an increase of 3.6 % in relation to 2022, and surpasses the average annual growth rate of 2.8 % that has been observed during the period under analysis (see Graph 77).

By comparing the total mobile Internet subscriptions per payment option and device, or in other words, by dividing the datacard and mobile subscriptions by the number of prepaid and postpaid subscribers, it is obtained that, in 2023, 56.4 % of all mobile Internet subscriptions are from postpaid subscribers (which continue to show an upward trend), while 41 % are from prepaid subscribers (which continue to show a downward trend), and 2.6 % are from datacard subscribers (remaining largely unchanged). In addition, it should be noted that postpaid subscriptions showed a substantial increase of 6.0 %, as did datacard subscriptions with an increase of 7.1 %. Prepaid subscriptions remained largely unchanged, however, reporting a slight increase of 0.4 % in relation to 2022 (see Graphs 78 and 79).

In terms of market share, Kölbi accounted for 44.2 % of all mobile Internet subscriptions, followed by Liberty with 33.9 %, and Claro with 21.9 %. This ranking remains consistent regardless of payment option, to wit: Kölbi accounted for 44.8 % of all postpaid subscriptions, followed by Liberty with 30.9 %, and Claro with 24.3 %. This is also true for prepaid subscriptions, where Kölbi, Liberty and Claro accounted for 40.8 %, 39.7 % and 19.5% of the total, respectively. In regard to datacard subscriptions, Kölbi accounted for 84.5 % of the total, followed by Claro with 9.6 %, and Liberty with 5.9 % (see Graph 80).

In regard to Internet speeds, most postpaid subscribers purchased a plan with an Internet speed between 2 Mbps < S <= 5 Mbps, accounting for 45.3 % of the total, followed by 8 Mbps < S <= 15 Mbps with 43.8 %, S <= 2 Mbps with 8.3 %, and 5 Mbps < S <= 8 Mbps with 2.6 %. It should also be noted that the highest speed ranges reported a 5.1 percentage point increase in relation to 2022 (see Graph 82).

In regard to prepaid subscribers, the market share per speed range in 2022 and 2023 remained largely unchanged, with the 5 Mbps < S <= 8 Mbps speed range reaching 60.3 % by year's end, followed by the 8 Mbps < S <= 15 Mbps speed range with 39.7 % (see Graph 83).

In regard to datacard subscribers, the market share per speed range in 2022 and 2023 remained largely unchanged, with the 5 Mbps < S <= 8 Mbps speed range reporting the largest market share, in terms of subscriptions, with 82.8 % of the total by the end of 2023 (see Graph 84).

Regarding the ratio of mobile Internet subscriptions to fixed Internet subscriptions, the proportions reported in the last two years (i.e.: 2022 & 2023) have shown a substantial degree of stability, in contrast to the downward trend observed in previous years, ending 2023 with a ratio of 4.5 mobile Internet subscriptions for every fixed Internet subscription (see Graph 85).

Lastly, in regard to the number of subscriptions per every 100 inhabitants from 2019 to 2023, the market penetration of mobile Internet services showed an upward trend, rising from 91.9 % in 2019 to 98.5 % in 2023, and increasing by 2.6 percentage points in relation to 2022 (see Graph 86).

Traffic

416 442 TB of traffic were reported in 2023, the highest ever reported in the period under analysis, supporting the upward trend shown in recent years. This represents an increase of 25.2 % in relation to 2022, and an annual increase of 26.9 % since 2019 (see Graph 87).

This increase in data traffic is mainly driven by postpaid subscribers, given that postpaid data usage grew by 30.2 %, as did datacard usage with 7.3 %, in contrast to prepaid data usage which decreased by 2.2 %, all in relation to the previous year. The increase driven by postpaid subscribers in terms of mobile data usage resulted in a market share of 86.7 % of total traffic in 2023, followed by prepaid subscribers with 9.7 %, and datacard subscribers with 3.6 % (see Graphs 88 and 89).

In regard to data usage, for every 1 GB of prepaid data usage there are 9 GB of postpaid data usage. Moreover, in terms of the average monthly usage per subscriber, the gap between these two payment options continues to grow, taking into account that a postpaid subscriber uses an average of 10.5 GB per month (an increase of 22 % in relation to 2022), while a prepaid subscriber uses an average of 1.6 GB per month (a decrease of 5.9 % in relation to 2022) (see Graph 90).

With respect to speed ranges, the majority of postpaid data traffic is transmitted at a speed of 5 Mbps < S <= 8 Mbps with 46.3 % of the total, followed by 8 Mbps < S <= 15 Mbps with 43.8 %, while the remainder is transmitted at speeds lower than 5 Mbps. It should be noted that there was a slight increase in the market share of the highest speed ranges in relation to 2022 (see Graph 91).

With respect to prepaid subscriptions, 60.1 % of data traffic is transmitted at a speed of 5 Mbps < S <= 8 Mbps (an increase of 8.4 percentage points in relation to 2022), while the remaining 39.9 % is transmitted at a speed of 8 Mbps < S <= 15 Mbps, reflecting a shift towards lower speed ranges in relation to 2022 (see Graph 92).

Lastly, with respect to datacard subscriptions, 42.2 % of data traffic is transmitted at a speed of 8 Mbps < S <= 15 Mbps, while the remainder is transmitted at lower speeds. It should be noted, however, that the market share of the highest speed ranges from 2022 to 2023 increased by 8.9 percentage points (see Graph 93).

Revenue

In 2023, the revenue from mobile Internet services increased by 6.7 % in relation to 2022 (the highest increase ever reported in the period under analysis and surpassing the average annual growth rate of 1.3 %), totaling 279 377 million colones in revenue (see Graph 94).

An analysis of the share of revenue per payment option and device in 2023 revealed that the revenue from datacard subscriptions represents 3.5 % of the total (9838 million colones in revenue and a decrease of 2.4 % in relation to the previous year), while the revenue from prepaid subscriptions represents 17.3 % of the total (48 356 million colones in revenue and a decrease of 2.5 % in relation to 2022), and the revenue from postpaid subscriptions represents 79.2 % of the total (221 183 million colones in revenue and an increase of 9.4 % in relation to the previous year). This is consistent with the behavior observed in 2022, when postpaid subscriptions also yielded an increase in overall revenue (see Graph 95). It should also be noted that revenue increased in spite of the fact that the price for mobile telecommunications showed a downward trend in 2023.

In regard to the revenue from postpaid subscriptions per Internet speed range, 55.4 % of the revenue came from subscriptions with an Internet speed of 2 Mbps < S <= 5 Mbps, followed by 8 Mbps < S <= 15 Mbps with 37.4 %, S <= 2 Mbps with 4.3 %, and 5 Mbps < S <= 8 Mbps with 2.9 %, reflecting an increase in the market share of the highest speed ranges in relation to 2022 (see Graph 96).

In regard to the revenue from prepaid subscriptions per Internet speed range, 55.1 % of the revenue came from subscriptions with an Internet speed of 5 Mbps < S <= 8 Mbps, while the remaining 44.9 % came from subscriptions with an Internet speed of 8 Mbps < S <= 15 Mbps, which is consistent with the behavior observed in 2022 and 2023 (see Graph 97).

In regard to the revenue from datacard subscriptions per Internet speed range, 75.1 % of the revenue came from subscriptions with an Internet speed of 5 Mbps to

8 Mbps, followed by 8 Mbps to 15 Mbps with 11.9 %, 2 Mbps < S <= 5 Mbps with 7.1 %, and S <= 2 Mbps with 5.9 %, reflecting an increase in the market share of the highest speed ranges in relation to 2022 (see Graph 98).

Lastly, regarding the average monthly revenue per user, postpaid and datacard subscriptions reported comparable results, with approximately 6300 colones per month in the period under analysis (i.e.: 2019-2023), while prepaid subscriptions reported an average monthly revenue of 2077 colones per user. By the end of 2023, however, the ARPU of postpaid subscriptions reached 6307 colones (an increase of 3.25 % in relation to 2022), while datacard subscriptions reported an ARPU of 6045 colones (a decrease of 8.9 % in relation to the previous year), and prepaid subscriptions reported an ARPU of 1896 colones (a decrease of 2.9 % in relation to 2022) (see Graph 99).

In summary, mobile Internet subscriptions showed an upward trend in 2023 (+3.6 %). These results can be largely attributable to postpaid subscriptions, and in a lesser extent to prepaid and datacard subscriptions. This, together with a steady increase in the average data usage, led to an increase in data traffic (+25.7 %) and to an increase in revenue of 6.7 %. It should be noted that an increase in traffic does not directly correlate to an increase in revenue, however, especially given the decrease in the price of mobile telecommunication services (see Graph 184 in the section titled "Commercial Offers and Prices"). Therefore, such an increase shows that mobile Internet services are growing across every metric.

Finally, the revenue from mobile services (mobile telephony, roaming and mobile Internet) can be aggregated and the total revenue earned from mobile telecommunication networks[45] can be estimated, totaling 460 180 million colones in revenue in 2023 (an increase of 3.2 % in relation to 2022). This growth was largely driven by the increase in mobile and roaming data (6.7 % and 1.5 %, respectively), despite being offset by a decrease in the revenue from mobile telephony (1.9 %). In addition, mobile Internet accounted for

60.7 % of the total revenue from mobile telecommunications (the highest ever reported to date and continuing its upward trend), followed by mobile telephony with 36.8 % of the revenue (which continues to show a downward trend), and roaming services with 0.6 % of the revenue (see Graph 100).

In regard to payment options, postpaid subscriptions accounted for 84.2 % of the total in 2023, while prepaid subscriptions accounted for the remaining 15.8 %. Moreover, it should be noted that the gap between payment options continues to grow wider year-over-year. In 2019, for example, for every 1 colon earned from prepaid subscriptions, 2.6 colones were earned from postpaid subscriptions, whereas today, five years later, that ratio has increased to 5.3 colones. It should also be noted that, in 2023, prepaid subscriptions reported an average revenue per user of 1426 colones per month (an increase of 3.2 % in relation to 2022), while postpaid subscriptions reported an ARPU of 10 136 colones per month (remaining largely unchanged in relation to the previous year). The above results suggest that a postpaid subscriber represents 7 times the revenue of a prepaid subscriber (see Graphs 101 and 102).

In summary, it is abundantly clear that, in the mobile telecommunications market, postpaid subscriptions are

> increasingly gaining ground in terms of subscriptions, at higher speed ranges,

despite the fact that is not the prevailing payment option in mobile telephony. Nevertheless, it continues to show an upward trend. Moreover,

> in the context of data traffic and revenue, there is no doubt that postpaid subscriptions have a higher market share than, prepaid subscriptions,

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[45] As of 2023, the revenue from mobile telephony, mobile Internet (referred to as "revenue from mobile networks" in previous reports), and roaming services will be added together in order to comply with the data aggregation guidelines established by the International Telecommunication Union [ITU].

and that mobile data has shown an upward trend in terms of revenue and traffic, in contrast to voice services.

Portability

The largest decrease in successful number porting since 2014 was reported in 2023 (see Graph 103), with a decrease of 83 802 ports in relation to 2022, totaling 350 213 successful number ports by the end of 2023 (-19.3 %).

Notwithstanding the above, it should be noted that number porting is a major advantage for users, as it gives customers the option to transfer their numbers to whichever operator that best satisfies their needs, and reinforces the existing competitive dynamics of mobile telecommunication services in general..

Graph 42. Costa Rica: Mobile telephony subscriptions in 2019 -2023
(yearly figures in thousands of subscribers)

	2019	2020	2021	2022	2023
Postpaid	2418	2506	2695	3002	3184
Prepaid	4892	5006	5140	4874	4259
Mobile telephony	7310	7512	7834	7876	7443
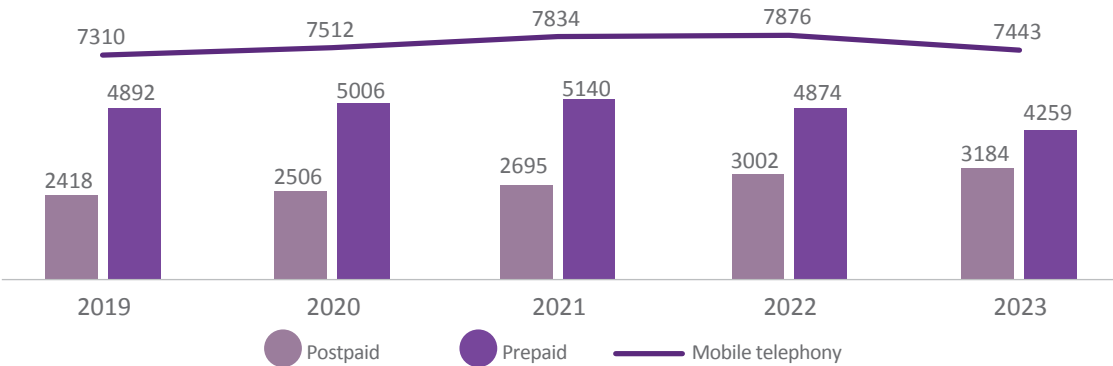
Source: SUTEL, General Directorate of Markets. Costa Rica, 2023.

Graph 43. Costa Rica: Mobile telephony service subscribers per every 100 inhabitants in 2019-2023
(yearly figures in percentage terms)

	2019	2020	2021	2022	2023
Penetration	144.5 %	147 %	151.7 %	151.1 %	141.4 %
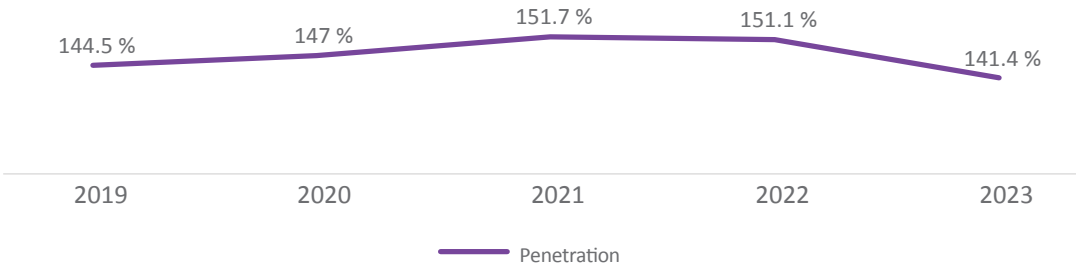
Source: SUTEL, General Directorate of Markets. Costa Rica, 2023.

Graph 44. Costa Rica: Percentage of subscribers per payment plan in 2019-2023
(yearly figures in percentage terms)

Year	Postpaid	Prepaid
2019	33.1 %	66.9 %
2020	33.4 %	66.6 %
2021	34.4 %	65.6 %
2022	38.1 %	61.9 %
2023	42.8 %	57.2 %

● Prepaid   ● Postpaid
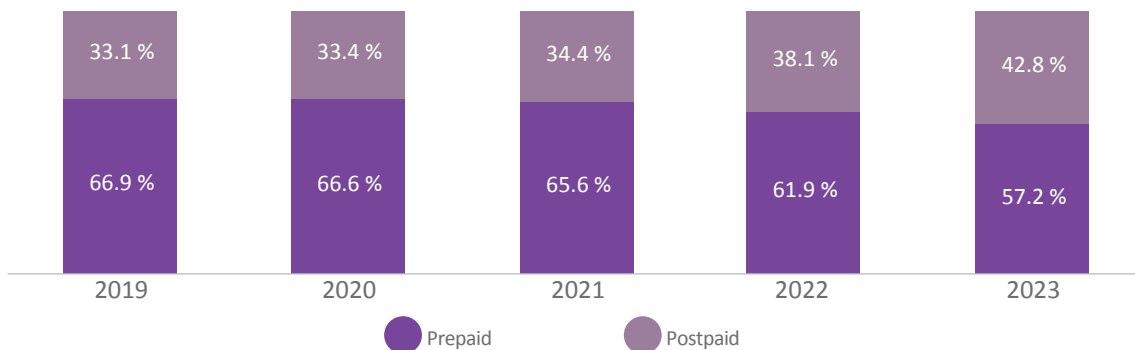
Source: SUTEL, General Directorate of Markets. Costa Rica, 2023..

Graph 45. Costa Rica: Mobile telephony subscriptions per payment plan in 2022-2023
(quarterly figures in thousands of subscribers)

2022

Quarter	Prepaid	Postpaid
I T	5155	2805
II T	5080	2844
III T	5119	2878
IV T	4874	3002

2023

Quarter	Prepaid	Postpaid
I T	4398	3049
II T	4487	3105
III T	4461	3154
IV T	4259	3184

● Prepaid   ● Postpaid
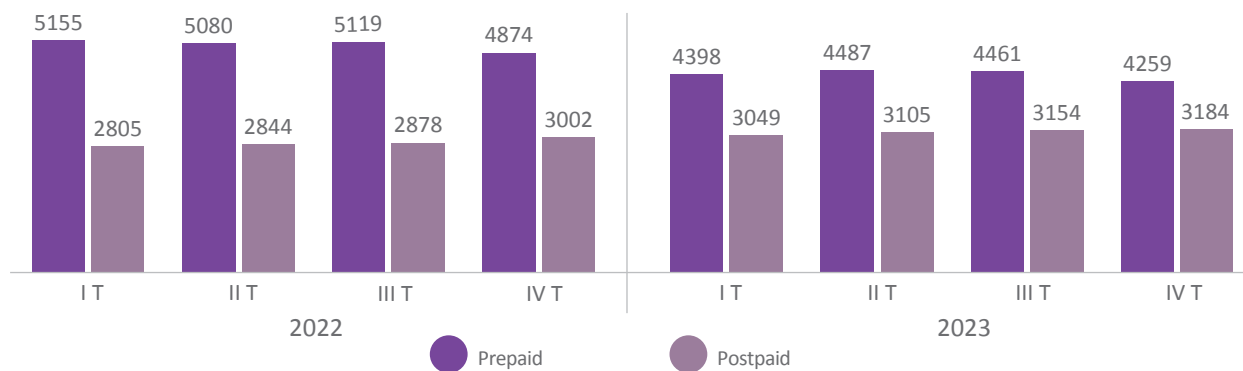
Source: SUTEL, General Directorate of Markets. Costa Rica, 2023..

Graph 46. Costa Rica: Annual growth rate of mobile telephony subscriptions per payment plan in 2019-2023
(Yearly figures in percentage terms)

Year	Year-on-year variation rate (prepaid)	Year-on-year variation rate (postpaid)
2019	3.9 %	9.4 %
2020	2.3 %	3.7 %
2021	2.7 %	7.5 %
2022	-5.2 %	11.4 %
2023	-12.6 %	6.1 %

● Year-on-year variation rate (prepaid)   ● Year-on-year variation rate (postpaid)
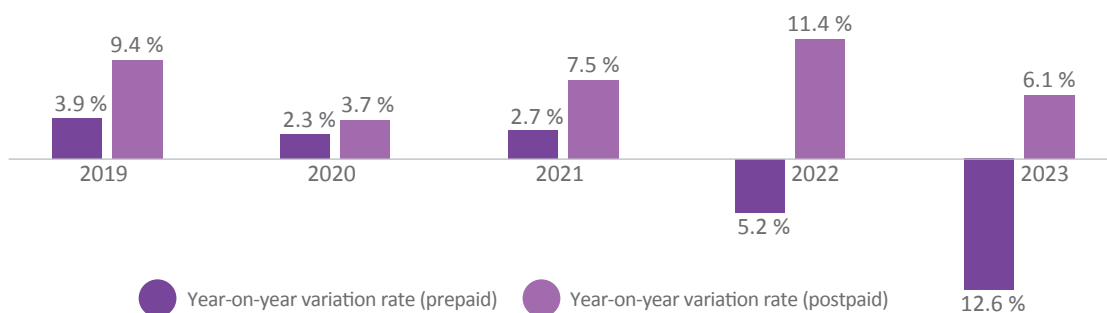
Source: SUTEL, General Directorate of Markets. Costa Rica, 2023..

Graph 47. Costa Rica: Percentage of mobile telephony subscribers per operator in 2019-2023
(yearly figures in percentage terms)

	2019	2020	2021	2022	2023
Liberty	34.9 %	38.6 %	42.3 %	46.3 %	45.3 %
Kölbi	42.9 %	41.1 %	38.6 %	32.5 %	34 %
Claro	22.1 %	20.3 %	19.1 %	21.2 %	20.7 %
Fullmóvil	0.1 %	0.1 %			

Fullmóvil • Claro • Kölbi • Liberty
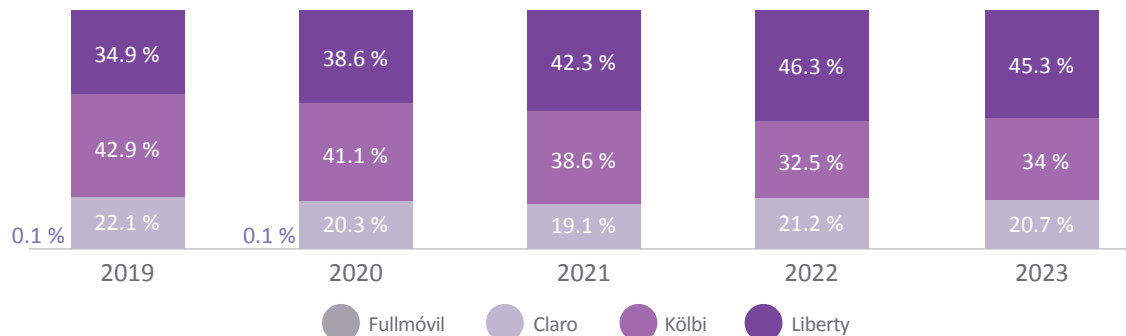
Source: SUTEL, General Directorate of Markets. Costa Rica, 2023.

Graph 48. Costa Rica: Percentage of mobile telephony subscribers per operator by payment plan in 2023
(Yearly figures in percentage terms)

	Prepaid	Postpaid
Liberty	53.2 %	34.8 %
Claro	18.6 %	23.4 %
Kölbi	28.2 %	41.8 %

Kölbi • Claro • Liberty
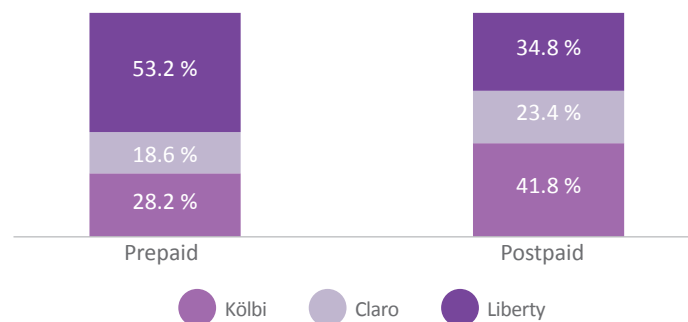
Source: SUTEL, General Directorate of Markets. Costa Rica, 2023.

Graph 49. Costa Rica: Evolution of the HHI from 2019-2023
(yearly figures)

2019	2020	2021	2022	2023
3547	3585	3644	3646	3638
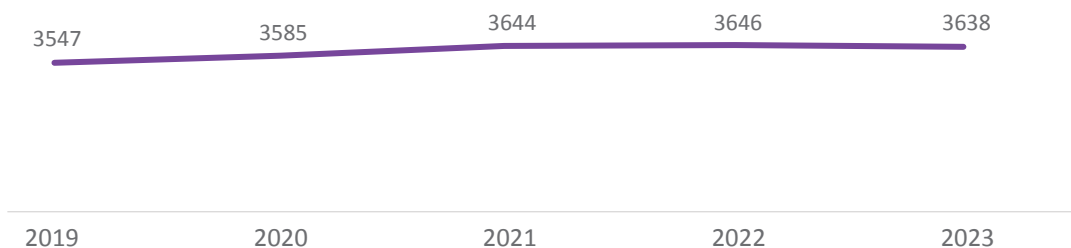
Source: SUTEL, General Directorate of Markets. Costa Rica, 2023.

Graph 50. Costa Rica: Total outbound mobile traffic[1], broken down by call destination, in 2019-2023
(yearly figures in millions of minutes)
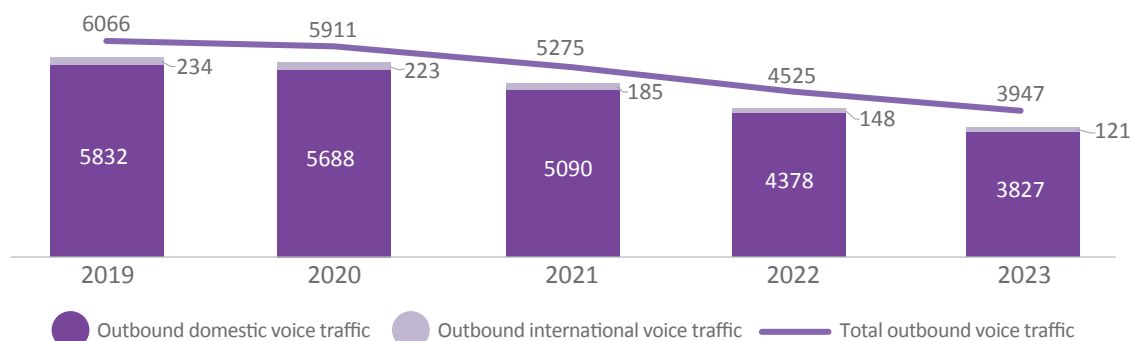
Year	2019	2020	2021	2022	2023
Total outbound voice traffic	6066	5911	5275	4525	3947
Outbound international voice traffic	234	223	185	148	121
Outbound domestic voice traffic	5832	5688	5090	4378	3827

- ● Outbound domestic voice traffic
- ● Outbound international voice traffic
- — Total outbound voice traffic

[1] Includes domestic and international voice call minutes only; does not include roaming.
Source: SUTEL, General Directorate of Markets. Costa Rica, 2023.

Graph 51. Costa Rica: Average monthly voice traffic per mobile[1] telephony subscriber by payment plan in 2019-2023
(figures in minutes per month by type of subscriber)
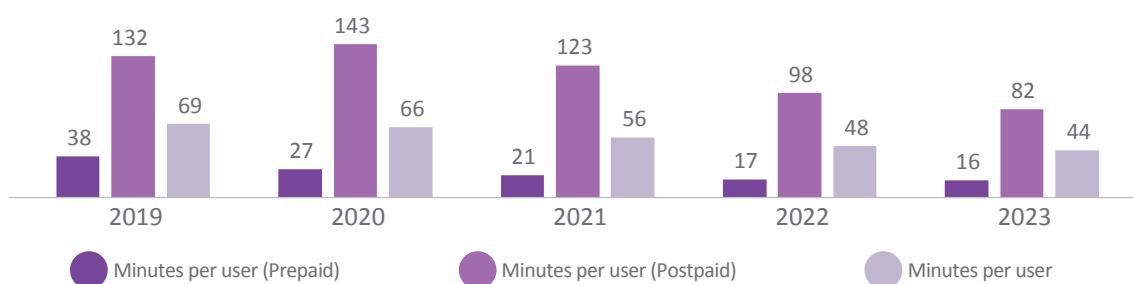
Year	2019	2020	2021	2022	2023
Minutes per user (Prepaid)	38	27	21	17	16
Minutes per user (Postpaid)	132	143	123	98	82
Minutes per user	69	66	56	48	44

- ● Minutes per user (Prepaid)
- ● Minutes per user (Postpaid)
- ● Minutes per user

[1] Includes domestic and international voice call minutes only; does not include roaming.
Source: SUTEL, General Directorate of Markets. Costa Rica, 2023.

Graph 52. Costa Rica: Percentage of total traffic associated with mobile telephony by payment plan[1] in 2019-2023
(figures in millions of minutes and in percentage terms)
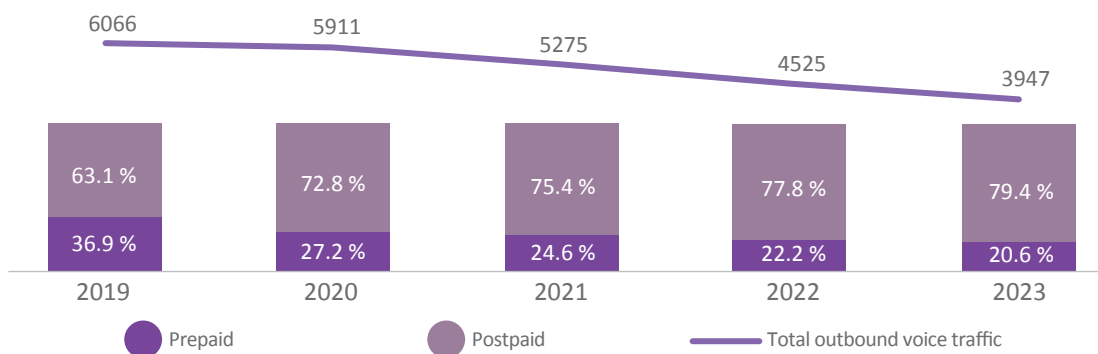
Year	2019	2020	2021	2022	2023
Total outbound voice traffic	6066	5911	5275	4525	3947
Postpaid	63.1 %	72.8 %	75.4 %	77.8 %	79.4 %
Prepaid	36.9 %	27.2 %	24.6 %	22.2 %	20.6 %

- ● Prepaid
- ● Postpaid
- — Total outbound voice traffic

[1] Includes domestic and international voice call minutes only; does not include roaming.
Source: SUTEL, General Directorate of Markets. Costa Rica, 2023.

Graph 53. Costa Rica: Percentage of total traffic associated with mobile telephony by destination[1] in 2019-2023
(yearly figures in percentage terms)
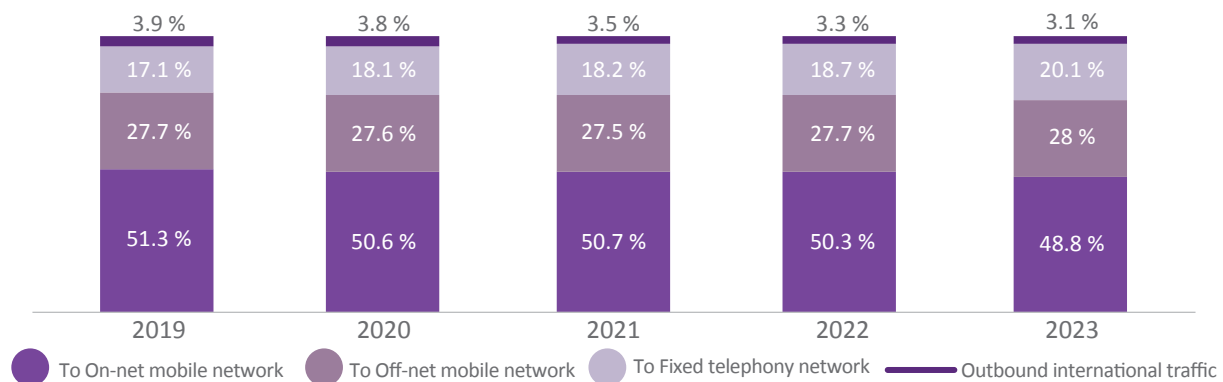
	2019	2020	2021	2022	2023
Outbound international traffic	3.9 %	3.8 %	3.5 %	3.3 %	3.1 %
To Fixed telephony network	17.1 %	18.1 %	18.2 %	18.7 %	20.1 %
To Off-net mobile network	27.7 %	27.6 %	27.5 %	27.7 %	28 %
To On-net mobile network	51.3 %	50.6 %	50.7 %	50.3 %	48.8 %

● To On-net mobile network ● To Off-net mobile network ● To Fixed telephony network ━ Outbound international traffic

[1] Includes domestic and international voice call minutes; does not include roaming.
Source: SUTEL, General Directorate of Markets. Costa Rica, 2023.

Graph 54. Costa Rica: Total and distribution of SMS traffic associated with mobile telephony[1] in 2019-2023
(yearly figures in millions of messages)
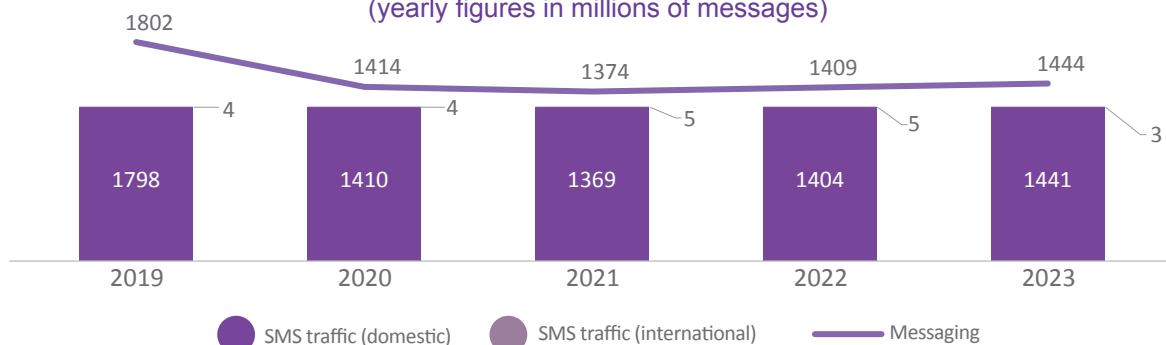
	2019	2020	2021	2022	2023
Messaging	1802	1414	1374	1409	1444
SMS traffic (international)	4	4	5	5	3
SMS traffic (domestic)	1798	1410	1369	1404	1441

● SMS traffic (domestic) ● SMS traffic (international) ━ Messaging

[1] Includes domestic and international voice call minutes; does not include roaming.
Source: SUTEL, General Directorate of Markets. Costa Rica, 2023.

Graph 55. Costa Rica: Average monthly SMS traffic associated with mobile telephony[1] in 2019-2023
(figures in average of monthly messages)
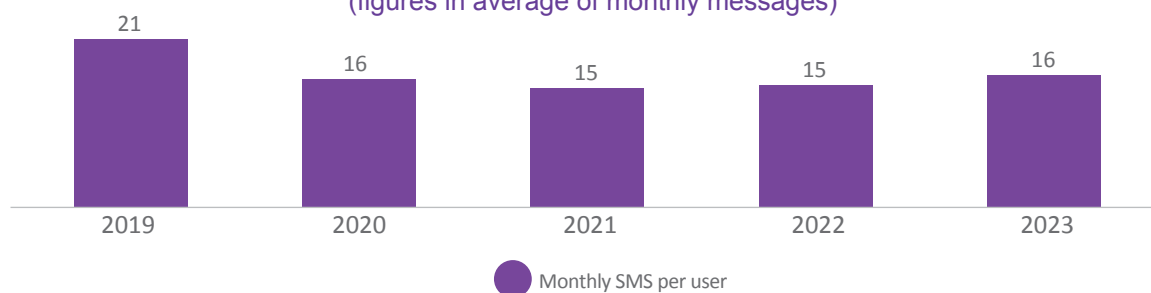
	2019	2020	2021	2022	2023
Monthly SMS per user	21	16	15	15	16

● Monthly SMS per user

[1] Includes domestic and international voice call minutes; does not include roaming.
Source: SUTEL, General Directorate of Markets. Costa Rica, 2023.

Graph 56. Costa Rica: Total outbound domestic mobile traffic1, broken down by voice-network destination, in 2019-2023
(figures in millions of minutes and in percentage terms)

	2019	2020	2021	2022	2023
Outbound voice traffic (domestic)	5832	5688	5090	4378	3827
To Fixed telephony network	17.8 %	18.8 %	18.9 %	18.2 %	20.8 %
To Off-net mobile network	28.9 %	28.6 %	28.5 %	29.1 %	28.9 %
To On-net mobile network	53.4 %	52.5 %	52.6 %	52.7 %	50.3 %

- To On-net mobile network
- To Off-net mobile network
- To Fixed telephony network
- Outbound voice traffic (domestic)
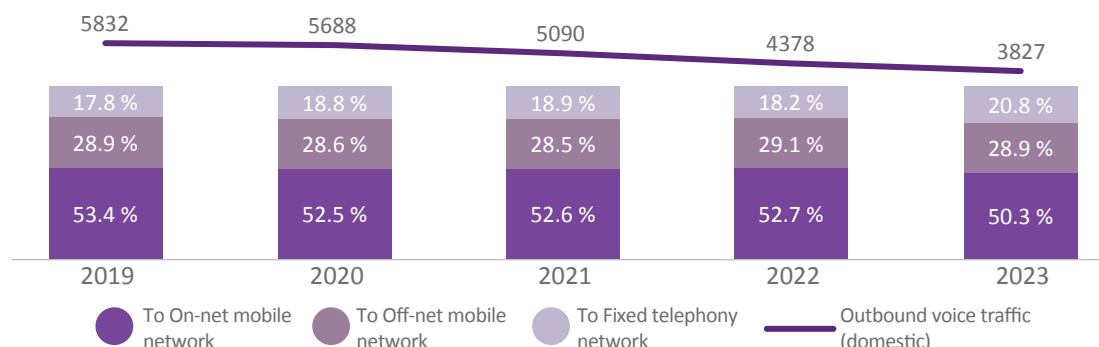
[1] Includes domestic voice call minutes only; does not include roaming.
Source: SUTEL, General Directorate of Markets. Costa Rica, 2023.

Graph 57. Costa Rica: Total and percentage distribution of SMS domestic traffic in 2019-2023
(yearly figures in millions of messages and in percentage terms)

	2019	2020	2021	2022	2023
SMS total	1798	1410	1369	1404	1441
SMS Off-net	44.2 %	49 %	56 %	61.9 %	69.2 %
SMS On-net	55.8 %	51 %	44 %	38.1 %	30.8 %

- SMS On-net
- SMS Off-net
- SMS total
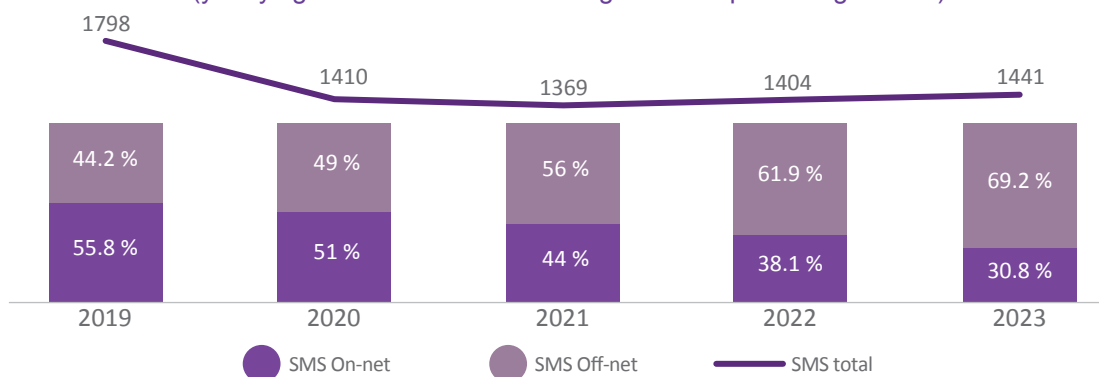
Source: SUTEL, General Directorate of Markets. Costa Rica, 2023.

Graph 58. Costa Rica: Total international traffic associated with mobile telephony in 2019-2023
(yearly figures in millions of minutes)

	2019	2020	2021	2022	2023
Total international traffic	419	416	386	350	291
Outbound international traffic	55.9 %	53.7 %	47.9 %	42.2 %	41.4 %
Inbound international traffic	44.1 %	46.3 %	52.1 %	57.8 %	58.6 %

- Inbound international traffic
- Outbound international traffic
- Total international traffic

Source: SUTEL, General Directorate of Markets. Costa Rica, 2023.

Graph 59. Costa Rica: Total international outbound SMS traffic in 2019-2023
(yearly figures in millions of messages)

2019	2020	2021	2022	2023
4	4	5	5	3

— SMS Outbound traffic (international)
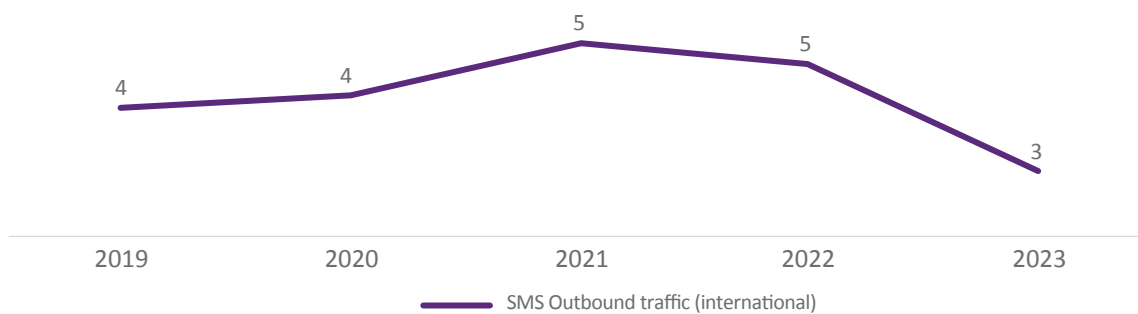
Source: SUTEL, General Directorate of Markets. Costa Rica, 2023.

Graph 60. Costa Rica: Distribution of total revenue generated by the mobile market[1] per category in 2019-2023
(figures in millions of colones)

	2019	2020	2021	2022	2023
Mobile telephony	225 872	204 662	189 790	181 327	177 930
Messaging	7615	5827	5669	5801	3332
Voice	218 257	198 835	184 121	175 526	174 598

● Voice ● Messaging — Mobile telephony

[1] Includes domestic and international voice call minutes; does not include roaming and data
Source: SUTEL, General Directorate of Markets. Costa Rica, 2023.

Gráfico n.° 61. Costa Rica: Distribution of total revenue generated by the mobile market[1] per subservice in 2019-2023
(figures in millions of colones)
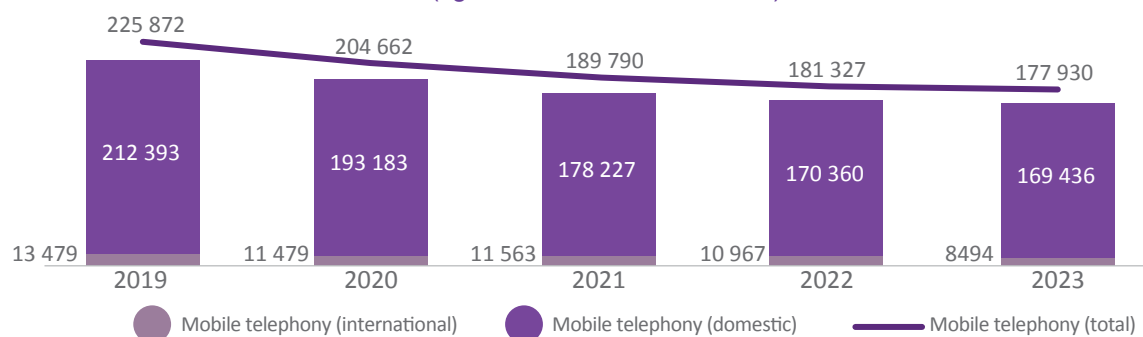
	2019	2020	2021	2022	2023
Mobile telephony (total)	225 872	204 662	189 790	181 327	177 930
Mobile telephony (domestic)	212 393	193 183	178 227	170 360	169 436
Mobile telephony (international)	13 479	11 479	11 563	10 967	8494

● Mobile telephony (international) ● Mobile telephony (domestic) — Mobile telephony (total)

[1] Includes domestic and international voice call minutes; does not include roaming and data.
Source: SUTEL, General Directorate of Markets. Costa Rica, 2023.

Graph 62. Costa Rica: Average monthly revenue per mobile subscriber1 [ARPU], broken down by category, in 2019-2023
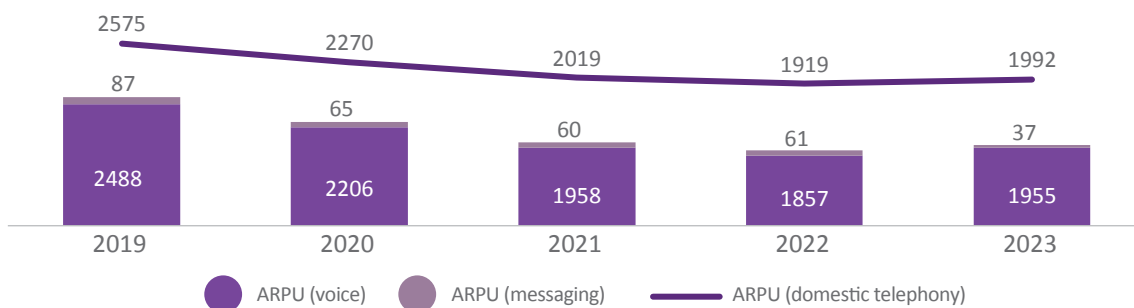
(figures in colones)

	2019	2020	2021	2022	2023
ARPU (domestic telephony)	2575	2270	2019	1919	1992
ARPU (messaging)	87	65	60	61	37
ARPU (voice)	2488	2206	1958	1857	1955

● ARPU (voice)   ● ARPU (messaging)   ▬ ARPU (domestic telephony)

[1] Includes domestic and international voice call minutes; does not include roaming and data.
Source: SUTEL, General Directorate of Markets. Costa Rica, 2023.

Graph 63. Costa Rica: Percentage of total revenue generated per mobile telephony service[1] by payment plan1 in 2019-2023

(yearly figures in percentage terms)
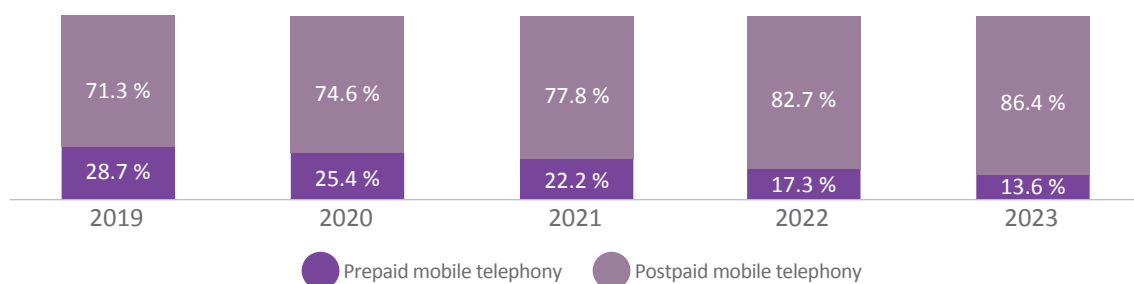
	2019	2020	2021	2022	2023
Postpaid mobile telephony	71.3 %	74.6 %	77.8 %	82.7 %	86.4 %
Prepaid mobile telephony	28.7 %	25.4 %	22.2 %	17.3 %	13.6 %

● Prepaid mobile telephony   ● Postpaid mobile telephony

[1] Includes domestic and international voice call minutes; does not include roaming and data.
Source: SUTEL, General Directorate of Markets. Costa Rica, 2023.

Graph 64. Costa Rica: Total revenue from domestic mobile telephony services[1] in 2019-2023

(yearly figures in millions of colones)

	2019	2020	2021	2022	2023
Domestic mobile telephony	212 393	193 183	178 227	170 360	169 436
Domestic voice calls	205 160	187 818	173 243	165 113	166 431
Domestic messaging	7234	5365	4984	5247	3005

● Domestic voice calls   ● Domestic messaging   ▬ Domestic mobile telephony
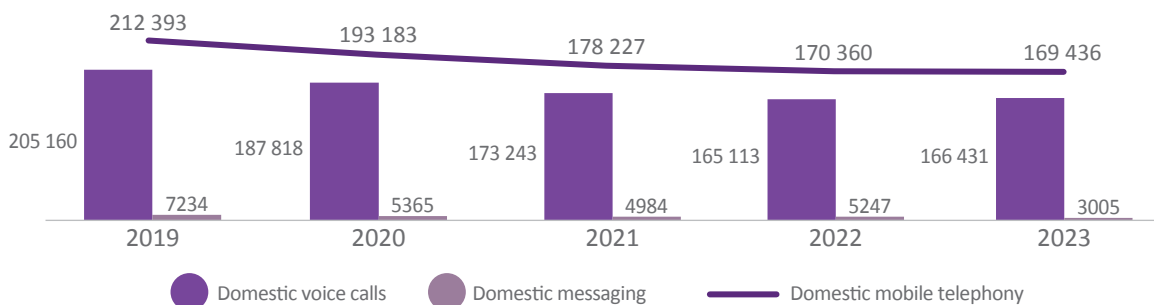
[1] Includes domestic voice calls and messaging..
Source: SUTEL, General Directorate of Markets. Costa Rica, 2023.

Graph 65. Costa Rica: Distribution of total revenue generated by the domestic mobile market in 2019-2023

(yearly figures in millions of colones)

	2019	2020	2021	2022	2023
Total domestic voice calls	205 160	187 818	173 243	165 113	166 431
Inbound domestic voice calls	39 275	33 966	28 949	23 062	18 955
Outbound domestic voice calls	165 884	153 851	144 294	142 051	147 476

● Outbound domestic voice calls   ● Inbound domestic voice calls   — Total domestic voice calls
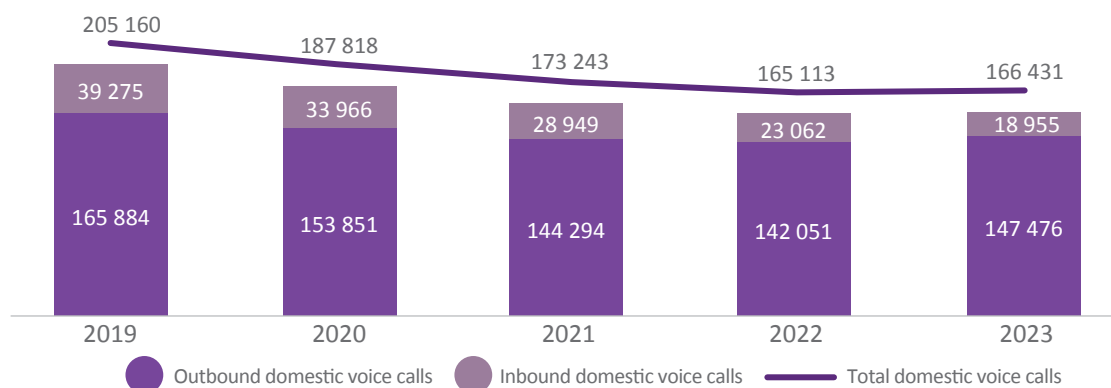
Source: SUTEL, General Directorate of Markets. Costa Rica, 2023.

Graph 66. Costa Rica: Total revenue from outbound domestic messaging in 2019-2023

(yearly figures in millions of colones)

2019	2020	2021	2022	2023
7234	5365	4984	5247	3005
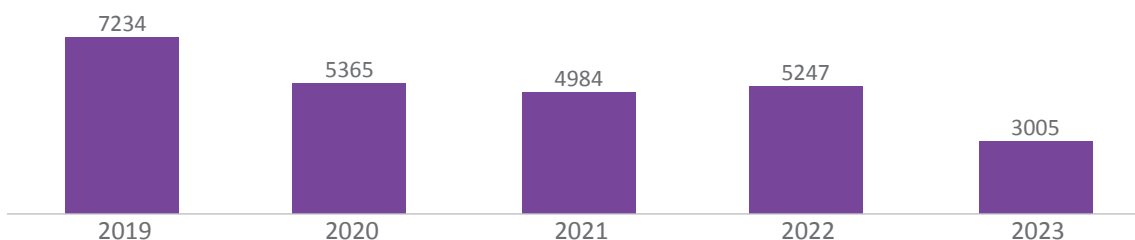
Source: SUTEL, General Directorate of Markets. Costa Rica, 2023.

Graph 67. Costa Rica: Total revenue from international mobile telephony per category in 2019-2023

(yearly figures in millions of colones and in percentage terms)

	2019	2020	2021	2022	2023
Telefonía móvil internacional	13 479	11 479	11 563	10 967	8494
Mensajería internacional	2.8 %	4 %	5.9 %	5 %	3.9 %
Voz internacional	97.2 %	96 %	94.1 %	95 %	96.1 %

● Voz internacional   ● Mensajería internacional   — Telefonía móvil internacional
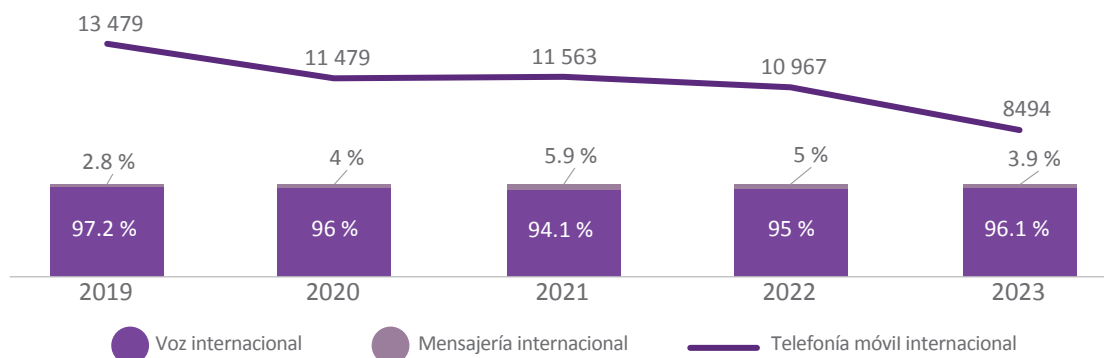
Source: SUTEL, General Directorate of Markets. Costa Rica, 2023.

Graph 68. Costa Rica: Distribution of total voice revenue associated with international mobile telephony in 2019-2023
(yearly figures in millions of colones)

	2019	2020	2021	2022	2023
Total international voice calls	13 098	11 017	10 878	10 414	8167
Outbound international voice calls	8510	6513	6057	5526	4628
Inbound international voice call	4588	4505	4821	4887	3539
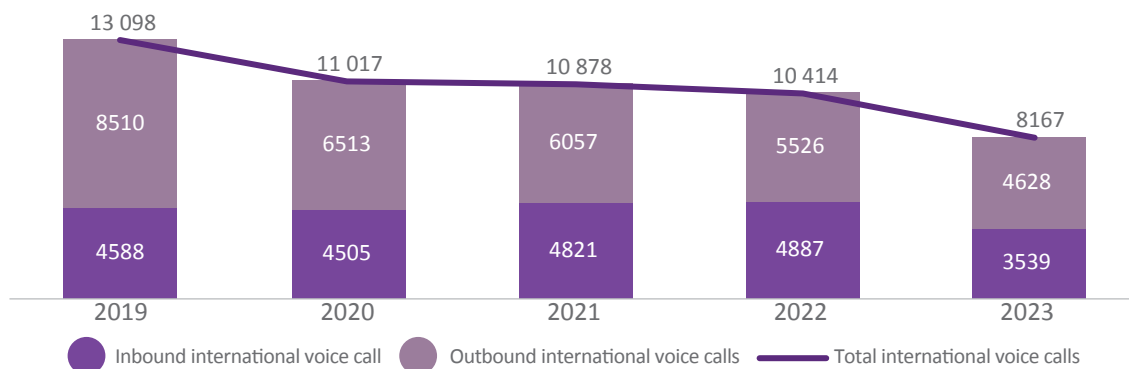
Source: SUTEL, General Directorate of Markets. Costa Rica, 2023.

Graph 69. Costa Rica: Percentage of total voice revenue associated with international mobile telephony per payment plan in 2019-2023
(yearly figures in percentage terms)

	2019	2020	2021	2022	2023
Postpaid	32 %	39.7 %	43.1 %	48.4 %	51.1 %
Prepaid	68 %	60.3 %	56.9 %	51.6 %	48.9 %
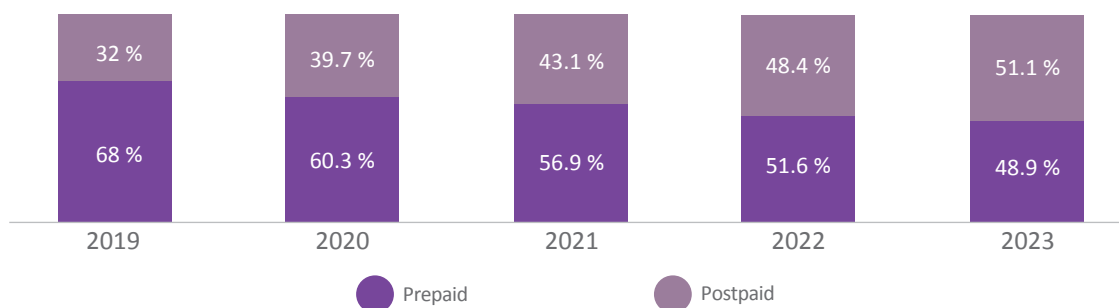
Source: SUTEL, General Directorate of Markets. Costa Rica, 2023.

Graph 70. Costa Rica: Total and percentage distribution of roaming voice call traffic in 2019-2023
(yearly figures in millions of minutes and in percentage terms)

	2019	2020	2021	2022	2023
Total voice roaming	80	34	39	45	42
Outbound voice roaming	13.8 %	11.9 %	11.5 %	12 %	9.6 %
Inbound voice roaming	86.2 %	88.1 %	88.5 %	88 %	90.4 %
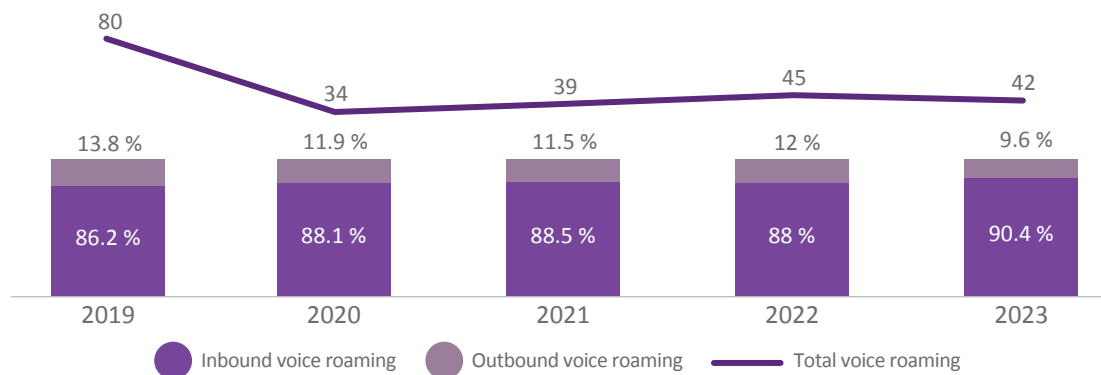
Source: SUTEL, General Directorate of Markets. Costa Rica, 2023.

Graph 71. Costa Rica: Total and percentage distribution of roaming SMS/MMS traffic in 2019-2023

(yearly figures in millions of messages and in percentage terms)

Year	Total	Outbound	Inbound
2019	21	17.3 %	82.7 %
2020	9	19.9 %	80.1 %
2021	15	27.3 %	72.7 %
2022	23	36.4 %	63.6 %
2023	22	36.9 %	63.1 %

● Inbound SMS/MMS roaming   ● Outbound SMS/MMS roaming   — Total SMS/MMS roaming
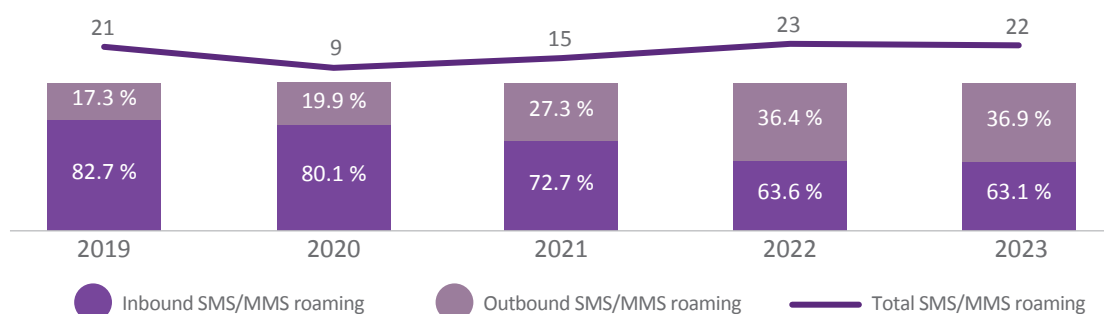
Source: SUTEL, General Directorate of Markets. Costa Rica, 2023.

Graph 72. Costa Rica: Total and percentage distribution of roaming data traffic in 2019-2023
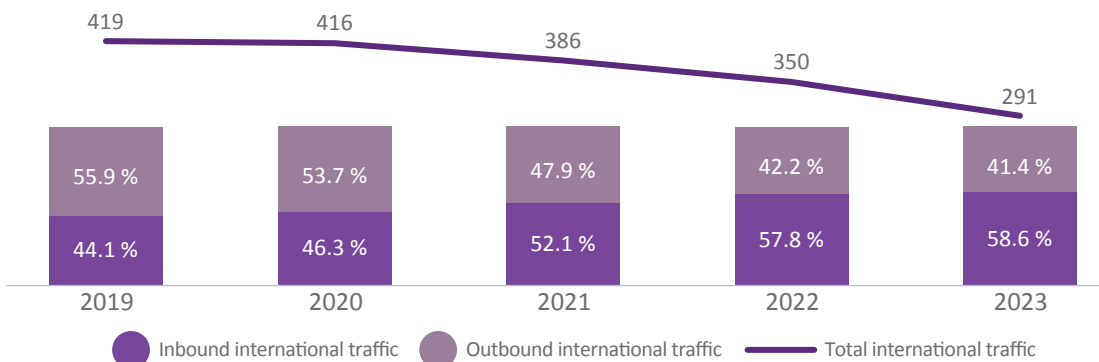
(yearly figures in TB and in percentage terms)

Year	Total	Outbound	Inbound
2019	1145	26.5 %	73.5 %
2020	801	29.4 %	70.6 %
2021	1891	27.4 %	72.6 %
2022	3336	26.4 %	73.6 %
2023	5268	26.9 %	73.1 %

● Inbound roaming data   ● Outbound roaming data   — Total roaming data
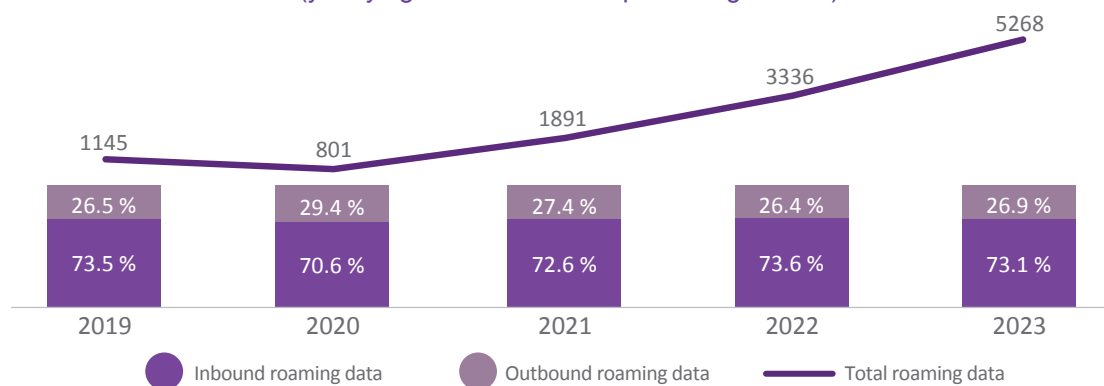
Source: SUTEL, General Directorate of Markets. Costa Rica, 2023.

Graph 73. Costa Rica: Total revenue from outbound roaming per category[1] in 2019-2023

(yearly figures in millions of colones and in percentage terms)

Year	Retail roaming	Messaging	Data	Voice
2019	4271	7.9 %	49.1%	43.0%
2020	1281	16.6 %	36.8%	46.6%
2021	1670	13.6 %	55.9%	30.5%
2022	2831	12.5 %	67.8%	19.7%
2023	2874	8.8 %	74.5%	16.7%

● Voice   ● Data   ● Messaging   — Retail roaming (outbound roaming)
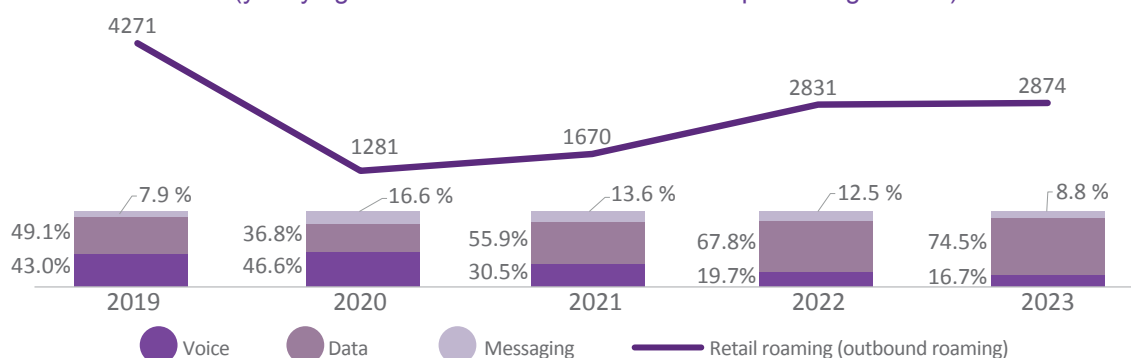
[1] Revenue from retail roaming services refers to activities carried out by domestic subscribers while traveling abroad (outbound roaming).
Source: SUTEL, General Directorate of Markets. Costa Rica, 2023.

Graph 74. Costa Rica: Total revenue from outbound roaming voice calls in 2019-2023
(yearly figures in millions of colones)

Year	Value
2019	1838
2020	596
2021	510
2022	557
2023	479

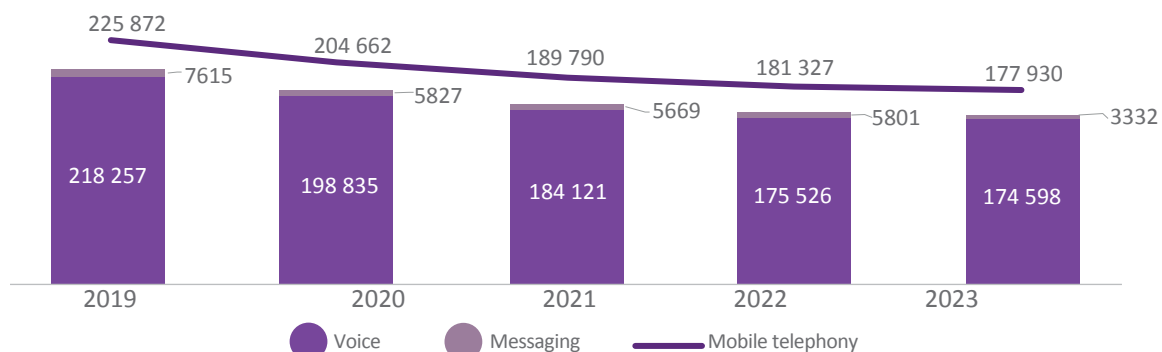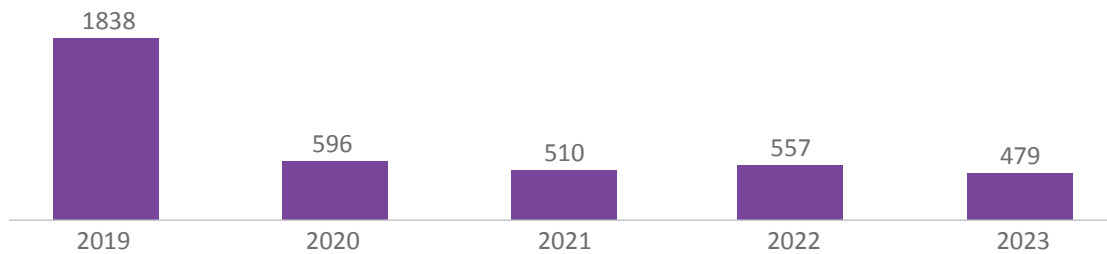Source: SUTEL, General Directorate of Markets. Costa Rica, 2023.

Graph 75. Costa Rica: Total revenue from outbound roaming data in 2019-2023
(yearly figures in millions of colones)

Year	Value
2019	2095
2020	472
2021	934
2022	1921
2023	2143
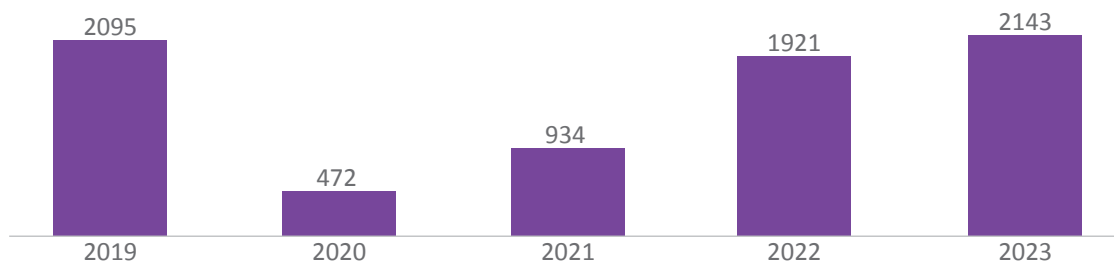
Source: SUTEL, General Directorate of Markets. Costa Rica, 2023.

Graph 76. Costa Rica: Total revenue from outbound roaming messaging in 2019-2023
(yearly figures in millions of colones)

Year	Value
2019	338
2020	212
2021	226
2022	353
2023	252
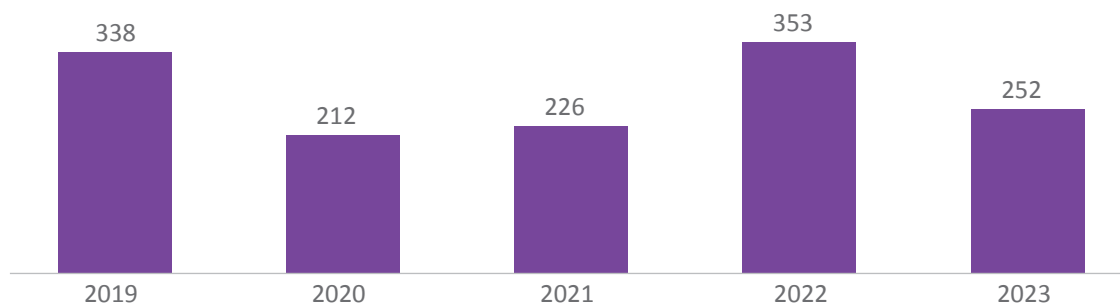
Source: SUTEL, General Directorate of Markets. Costa Rica, 2023.

Graph 77. Costa Rica: Mobile Internet subscriptions in 2019-2023
(yearly figures)

Year	Subscriptions
2019	4 649 229
2020	4 736 699
2021	4 904 938
2022	5 001 945
2023	5 183 454
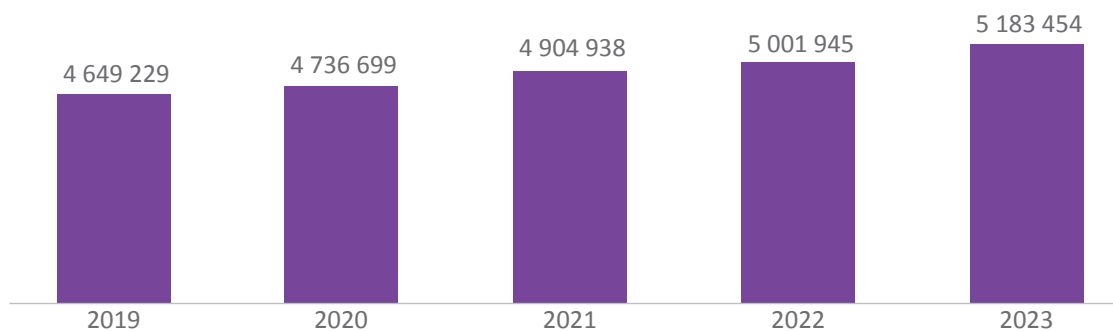
Source: SUTEL, General Directorate of Markets. Costa Rica, 2023.

Graph 78. Costa Rica: Mobile Internet subscriptions per payment plan and device in 2019-2023
(yearly figures)

Year	Prepaid	Postpaid	Datacard/USB
2019	2 243 370	2 273 092	132 767
2020	2 143 107	2 460 445	133 147
2021	2 161 945	2 614 988	128 005
2022	2 117 663	2 757 630	126 652
2023	2 125 436	2 922 398	135 620

● Prepaid   ● Postpaid   ● Datacard/USB

Source: SUTEL, General Directorate of Markets. Costa Rica, 2023.

Graph 79. Costa Rica: Percentage of mobile Internet subscriptions per payment plan and device in 2019-2023
(yearly figures in percentage terms)

Year	Datacard/USB	Prepaid	Postpaid
2019	2.9 %	48.3 %	48.9 %
2020	2.8 %	45.2 %	51.9 %
2021	2.6 %	44.1 %	53.3 %
2022	2.5 %	42.3 %	55.1 %
2023	2.6 %	41 %	56.4 %

● Postpaid   ● Prepaid   ● Datacard/USB

Source: SUTEL, General Directorate of Markets. Costa Rica, 2023.

Graph 80. Costa Rica: Percentage of mobile Internet datacard subscriptions per operator in 2023
(figures in percentage terms)

	Datacard	Prepaid	Postpaid	Total
Liberty	5.9 %	39.7 %	30.9 %	33.9 %
Kölbi	84.5 %	40.8 %	44.8 %	44.2 %
Claro	9.6 %	19.5 %	24.3 %	21.9 %

Claro ● Kölbi ● Liberty ●

Source: SUTEL, General Directorate of Markets. Costa Rica, 2023.

Graph 81. Costa Rica: Evolution of the mobile Internet HHI in 2019-2023
(year-end figures)

2019	2020	2021	2022	2023
3839	3759	3687	3631	3584
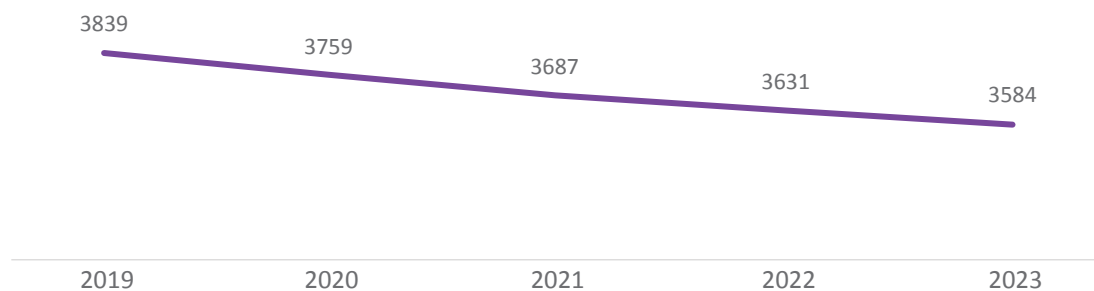
Source: SUTEL, General Directorate of Markets. Costa Rica, 2023.

Graph 82. Costa Rica: Percentage of postpaid mobile Internet subscriptions Percentage distribution of postpaid subscriptions per Internet speed range in 2022-2023
(year-end figures in percentage terms)

	2022	2023
8 Mbps < S <= 15 Mbps	38.7 %	43.8 %
5 Mbps < S <= 8 Mbps	2.7 %	2.6 %
2 Mbps < S <= 5 Mbps	52.1 %	45.3 %
S <= 2 Mbps	6.4 %	8.3 %

S <= 2 Mbps ● 2 Mbps < S <= 5 Mbps ● 5 Mbps < S <= 8 Mbps ● 8 Mbps < S <= 15 Mbps ●
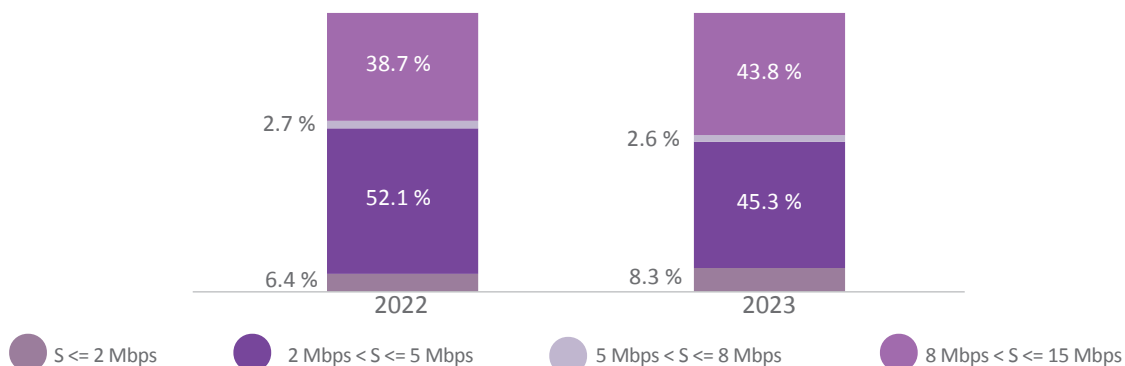
Source: SUTEL, General Directorate of Markets. Costa Rica, 2023.

Graph 83. Costa Rica: Percentage of mobile Internet subscriptions. Percentage distribution of prepaid subscriptions per Internet speed range in 2022-2023
(year-end figures in percentage terms)

	2022	2023
8 Mbps < S <= 15 Mbps	40.4 %	39.7 %
5 Mbps < S <= 8 Mbps	59.6 %	60.3 %

● 5 Mbps < S <= 8 Mbps   ● 8 Mbps < S <= 15 Mbps
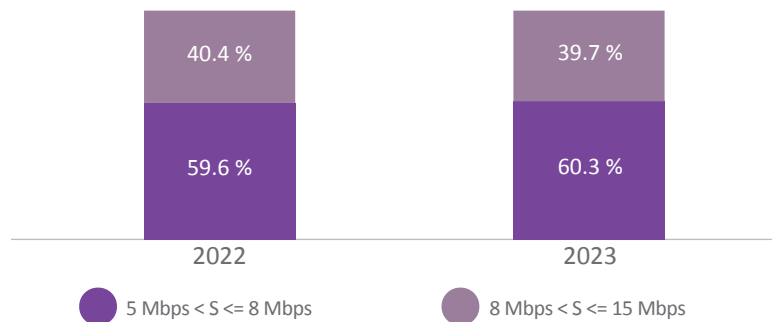
Source: SUTEL, General Directorate of Markets. Costa Rica, 2023.

Graph 84. Costa Rica: Percentage of mobile Internet datacard subscriptions. Percentage distribution per speed (datacard) in 2022-2023
(year-end figures in percentage terms)

	2022	2023
8 Mbps < S <= 15 Mbps	7 %	7.8 %
5 Mbps < S <= 8 Mbps	82.6 %	82.8 %
2 Mbps < S <= 5 Mbps	3.8 %	3.2 %
S <= 2 Mbps	6.6 %	6.3 %

● S <= 2 Mbps   ● 2 Mbps < S <= 5 Mbps   ● 5 Mbps < S <= 8 Mbps   ● 8 Mbps < S <= 15 Mbps
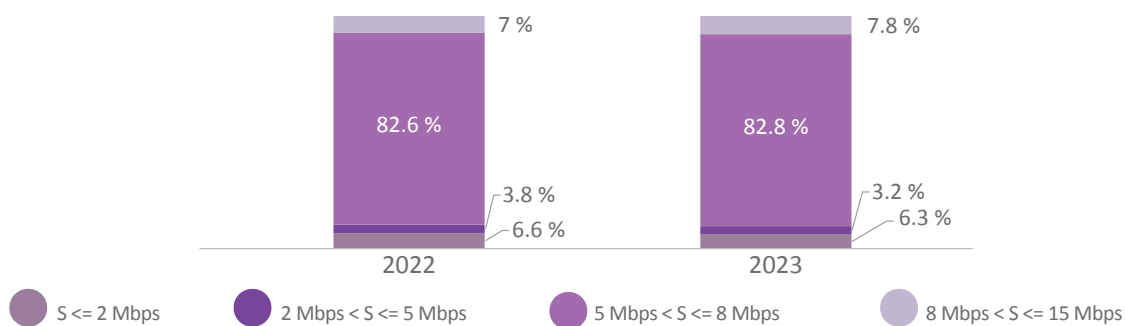
Source: SUTEL, General Directorate of Markets. Costa Rica, 2023.

Graph 85. Costa Rica: Number of mobile Internet subscriptions per every fixed Internet subscription in 2019-2023
(Year-end figures)

2019	2020	2021	2022	2023
5.1	4.8	4.6	4.5	4.5

Source: SUTEL, General Directorate of Markets. Costa Rica, 2023.

Graph 86. Costa Rica: Mobile Internet subscriptions per every 100 inhabitants in 2019-2023
(Year-end figures)

2019	2020	2021	2022	2023
91.9 %	92.7 %	95.0 %	95.9 %	98.5 %
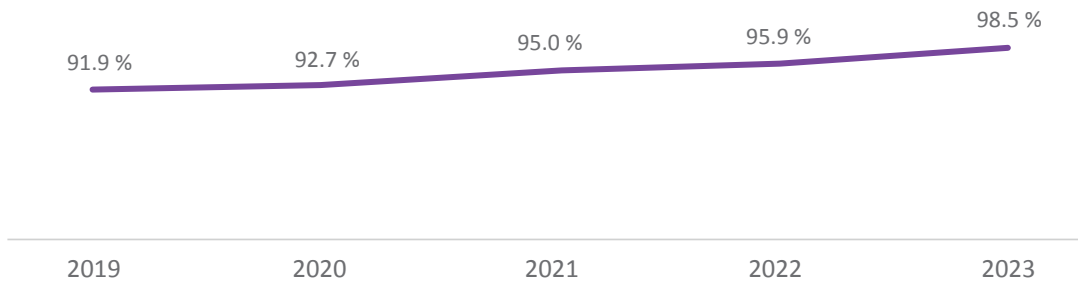
Source: SUTEL, General Directorate of Markets. Costa Rica, 2023.

Graph 87. Costa Rica: Mobile Internet traffic in 2019-2023
(yearly figures in TB)

2019	2020	2021	2022	2023
160 565	222 810	269 157	332 661	416 442
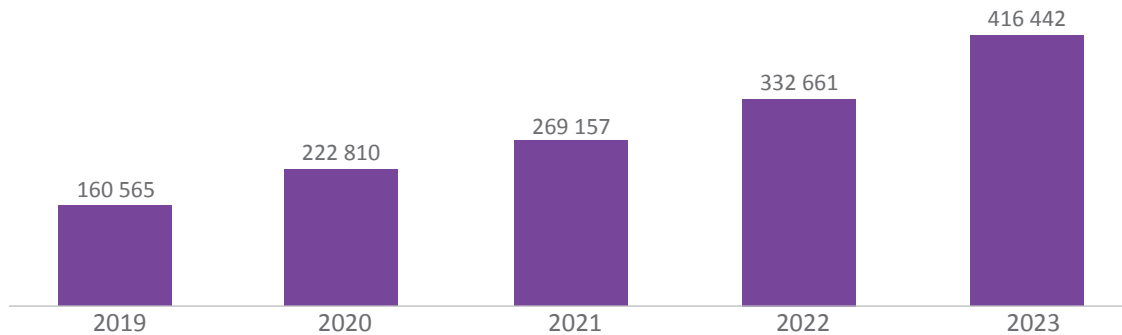
Source: SUTEL, General Directorate of Markets. Costa Rica, 2023.

Graph 88. Costa Rica: Mobile Internet traffic per payment plan and device in 2021-2022
(yearly figures in TB)

	Postpaid	Prepaid	Datacard/USB
2022	277 262	41 246	14 153
2023	360 948	40 310	15 184
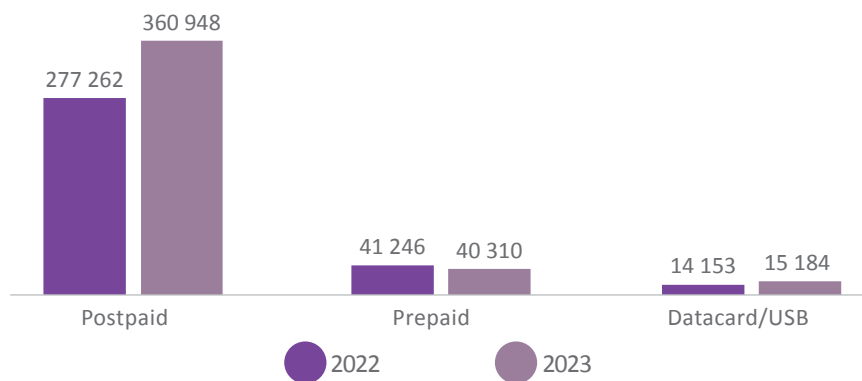
Source: SUTEL, General Directorate of Markets. Costa Rica, 2023.

Graph 89. Costa Rica: Percentage of mobile Internet traffic per payment plan and device in 2023
(figures in TB)

3.6 %
9.7 %
86.7 %
2023

● Postpaid   ● Prepaid   ● Datacard/USB
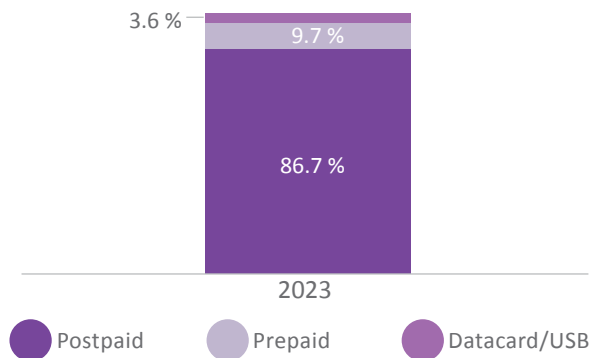
Source: SUTEL, General Directorate of Markets. Costa Rica, 2023.

Graph 90. Costa Rica: Average traffic of mobile Internet subscribers per payment plan and/or datacard in 2019-2023
(figures in GB per user [yearly] and per month)

Postpaid: 5.2, 6.9, 7.5, 8.6, 10.5
Prepaid: 0.6, 0.7, 1.1, 1.7, 1.6
Datacard: 3.7, 4.1, 7.7, 9.5, 9.6

● 2019   ● 2020   ○ 2021   ● 2022   ● 2023
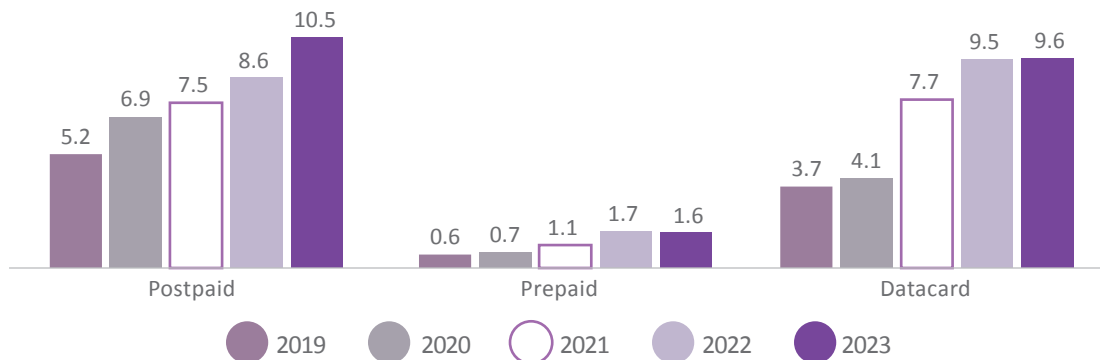
Source: SUTEL, General Directorate of Markets. Costa Rica, 2023.

Graph 91. Costa Rica: Percentage of postpaid mobile Internet traffic Percentage distribution per speed in 2022-2023
(figures in percentage terms)

2022: 12.8 %, 45.9 %, 41.2 %
2023: 9.9 %, 46.3 %, 43.8 %

● S <= 2 Mbps   ● 2 Mbps < S <= 5 Mbps   ○ 5 Mbps < S <= 8 Mbps   ● 8 Mbps < S <= 15 Mbps
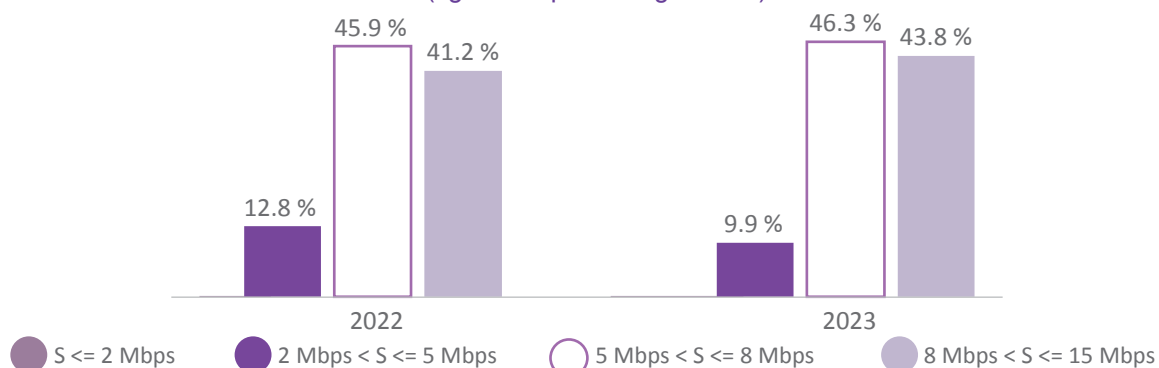
Source: SUTEL, General Directorate of Markets. Costa Rica, 2023.

Graph 92. Costa Rica: Percentage of prepaid mobile Internet traffic Percentage distribution per speed in 2022-2023

(figures in percentage terms)

2022
- 51.7 %
- 48.3 %

2023
- 60.1 %
- 39.9 %

● 5 Mbps < S <= 8 Mbps ● 8 Mbps < S <= 15 Mbps
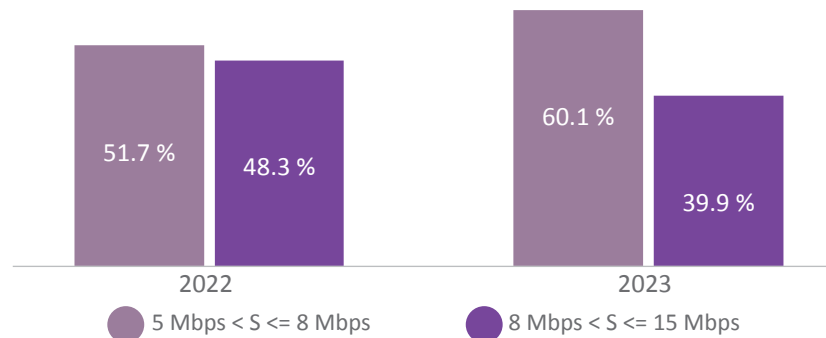
Source: SUTEL, General Directorate of Markets. Costa Rica, 2023.

Graph 93. Costa Rica: Percentage of mobile Internet datacard traffic Percentage distribution per speed in 2022-2023

(figures in percentage terms)

2022
- 33.3 %
- 24.4 %
- 32. %
- 10.3 %

2023
- 42.2 %
- 24 %
- 26.9 %
- 7 %

● S <= 2 Mbps ● 2 Mbps < S <= 5 Mbps ● 5 Mbps < S <= 8 Mbps ● 8 Mbps < S <= 15 Mbps
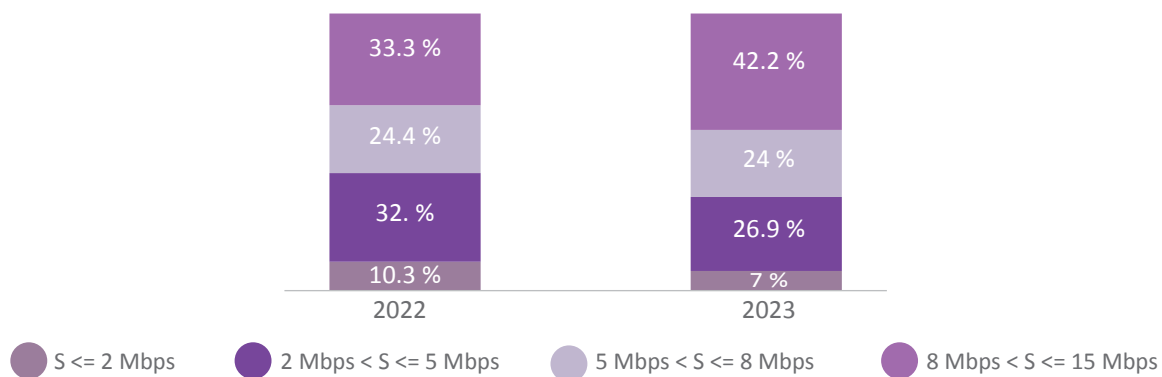
Source: SUTEL, General Directorate of Markets. Costa Rica, 2023.

Graph 94. Costa Rica: Revenue from mobile Internet subscriptions in 2019-2023

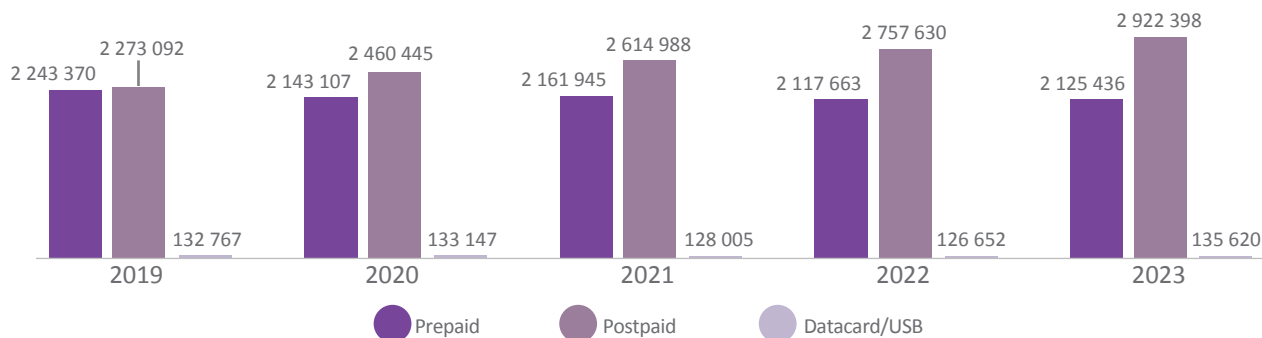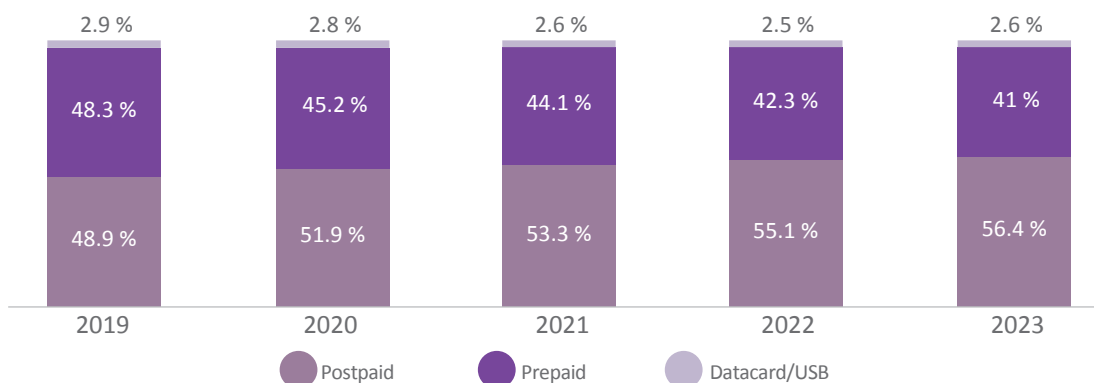(yearly figures in millions of colones)

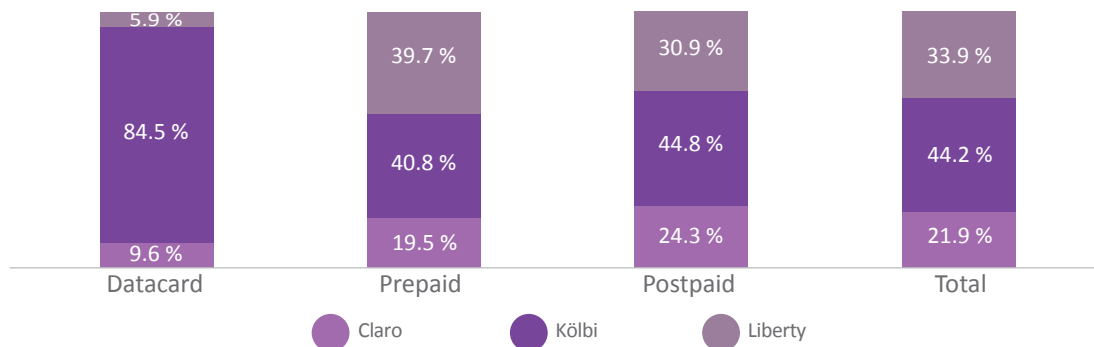| 2019	2020	2021	2022	2023
265 485	255 358	254 740	261 815	279 377
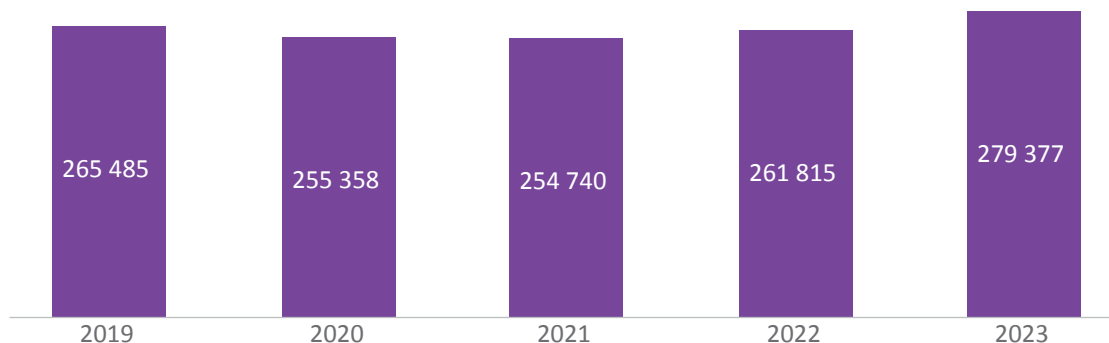
Source: SUTEL, General Directorate of Markets. Costa Rica, 2023.

Graph 95. Costa Rica: Percentage of revenue from mobile Internet subscriptions per payment plan and device in 2019-2023

(yearly figures in millions of colones and in percentage terms)

	2019	2020	2021	2022	2023
Total	265 485	255 358	254 740	261 815	279 377
Datacard/USB	3.4 %	4.1 %	3.9 %	3.9 %	3.5 %
Prepaid	26.9 %	20.4 %	18.9 %	18.9 %	17.3 %
Postpaid	69.6 %	75.5 %	77.2 %	77.2 %	79.2 %

● Postpaid   ● Prepaid   ● Datacard/USB   — Total
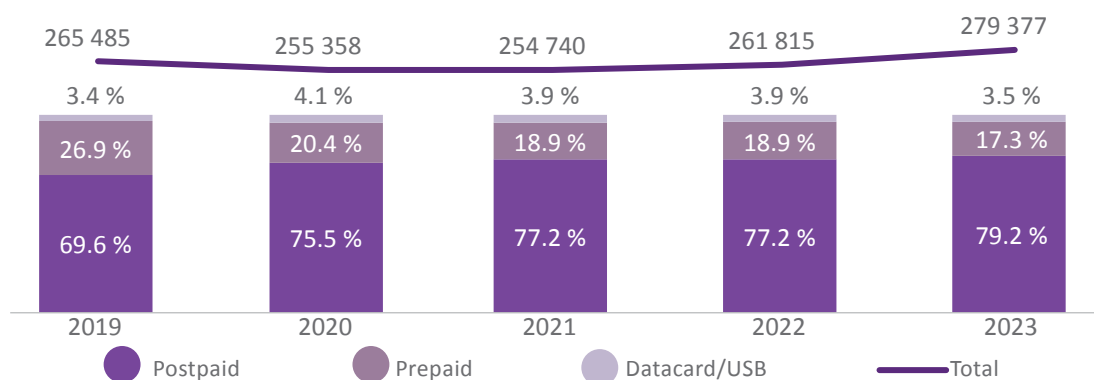
Source: SUTEL, General Directorate of Markets. Costa Rica, 2023.

Graph 96. Costa Rica: Percentage of revenue from mobile Internet postpaid subscriptions. Percentage distribution per speed in 2022-2023

(yearly figures in percentage terms)

	2022	2023
8 Mbps < V <= 15 Mbps	25.6 %	37.4 %
5 Mbps < V <= 8 Mbps	3.0 %	2.9 %
2 Mbps < V <= 5 Mbps	58.2 %	55.4 %
V <= 2 Mbps	4.5 %	4.3 %

● V <= 2 Mbps   ● 2 Mbps < V <= 5 Mbps   ● 5 Mbps < V <= 8 Mbps   ● 8 Mbps < V <= 15 Mbps
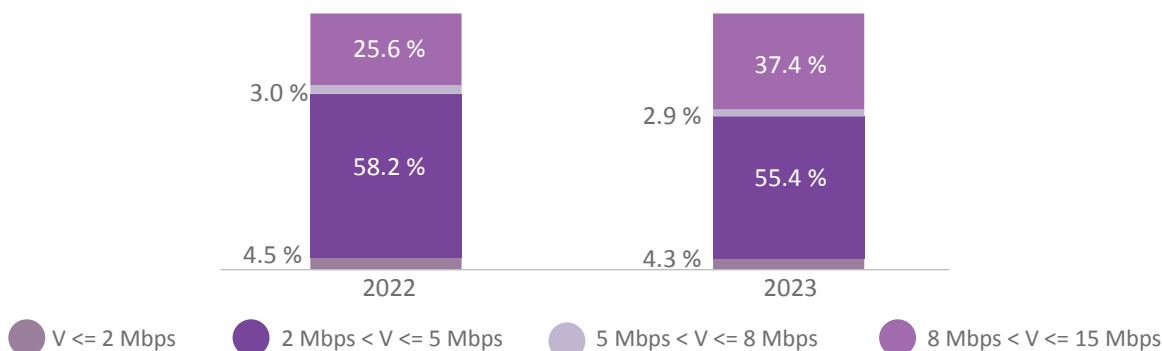
Source: SUTEL, General Directorate of Markets. Costa Rica, 2023.

Graph 97. Costa Rica: Percentage of revenue from mobile Internet prepaid subscriptions. Percentage distribution per speed in 2022-2023

(yearly figures in percentage terms)

	2022	2023
8 Mbps < V <= 15 Mbps	43.8 %	44.9 %
5 Mbps < V <= 8 Mbps	56.2 %	55.1 %

● 5 Mbps < V <= 8 Mbps   ● 8 Mbps < V <= 15 Mbps
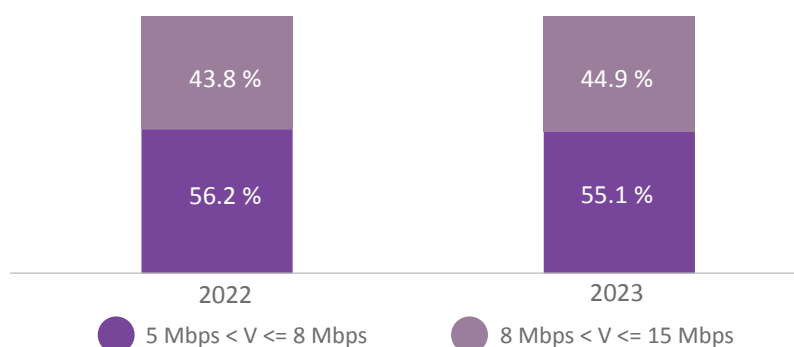
Source: SUTEL, General Directorate of Markets. Costa Rica, 2023.

Graph 98. Costa Rica: Percentage of revenue from mobile Internet datacard subscriptions. Percentage distribution per speed in 2022-2023

(yearly figures in percentage terms)

2022
- 10.6 %
- 66.3 %
- 7.8 %
- 15.4 %

2023
- 11.9 %
- 75.1 %
- 7.1 %
- 5.9 %

● S <= 2 Mbps   ● 2 Mbps < S <= 5 Mbps   ● 5 Mbps < S <= 8 Mbps   ● 8 Mbps < S <= 15 Mbps
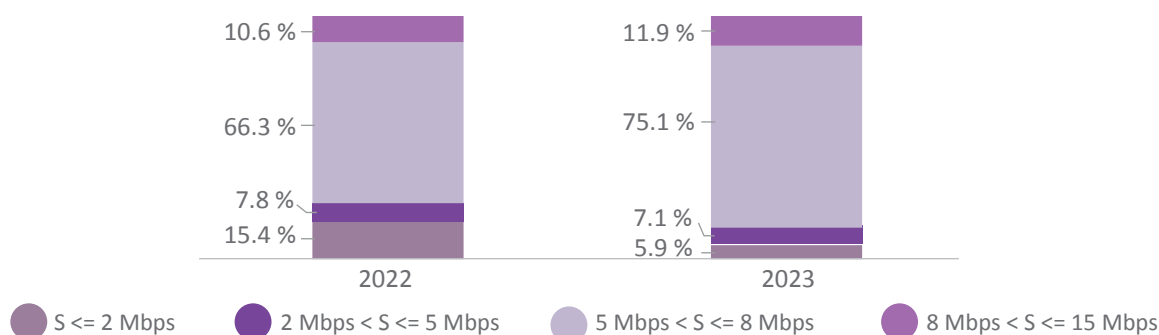
Source: SUTEL, General Directorate of Markets. Costa Rica, 2023.

Graph 99. Costa Rica: Average revenue from mobile Internet subscribers per payment plan and/or datacard in 2019-2023

(monthly figures in colones per subscriber)

Postpaid: 6778, 6603, 6459, 6633, 6307
Datacard/USB: 5712, 6527, 6268, 6108, 6045
Prepaid: 2656, 2026, 1855, 1952, 1896

| | 2019 | 2020 | 2021 | 2022 | 2023 |

● ● ● ● Postpaid   ——— Prepaid   – – – Datacard/USB
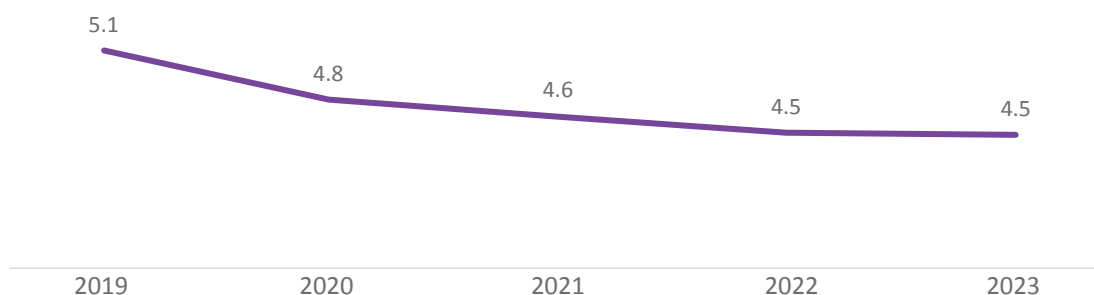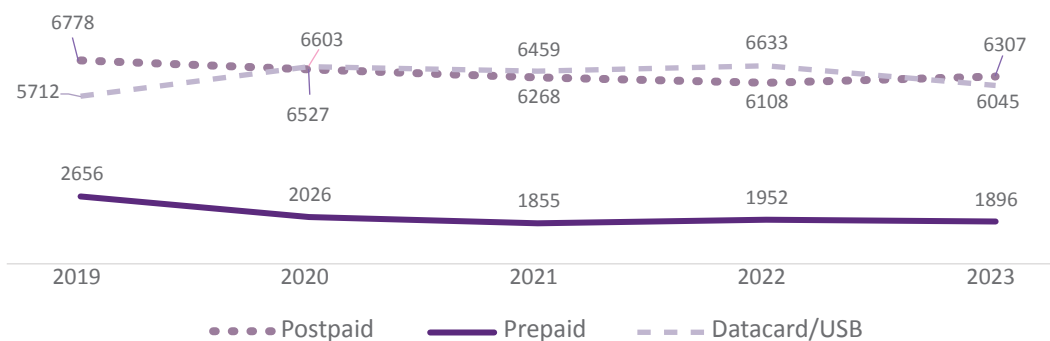
Source: SUTEL, General Directorate of Markets. Costa Rica, 2023.

Graph 100. Costa Rica: Percentage of total revenue generated by the mobile market1.2 per service in 2019-2023
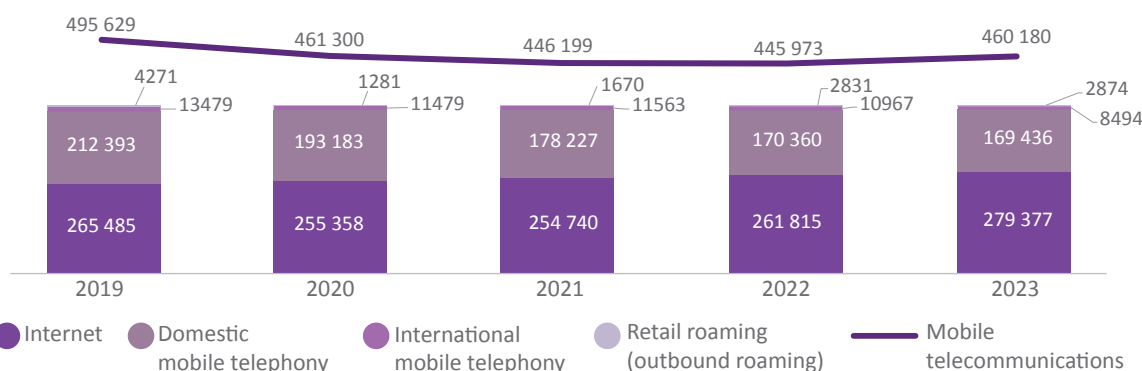
(yearly figures in millions of colones and in percentage terms)

Mobile telecommunications: 495 629, 461 300, 446 199, 445 973, 460 180

	2019	2020	2021	2022	2023
Internet	265 485	255 358	254 740	261 815	279 377
Domestic mobile telephony	212 393	193 183	178 227	170 360	169 436
International mobile telephony	4271	1281	1670	2831	2874
Retail roaming	13479	11479	11563	10967	8494

● Internet   ● Domestic mobile telephony   ● International mobile telephony   ● Retail roaming (outbound roaming)   —— Mobile telecommunications

[1] Includes domestic and international mobile telephony, roaming, and data.
[2] As of 2023, the revenue from roaming services will be added to the total in order to comply with the data aggregation guidelines established by the International Telecommunication Union [ITU].
Source: SUTEL, General Directorate of Markets. Costa Rica, 2023.

Graph 101. Costa Rica: Distribution of total revenue generated by the mobile market1.2 per payment plan in 2019-2023
(yearly figures in millions of colones)
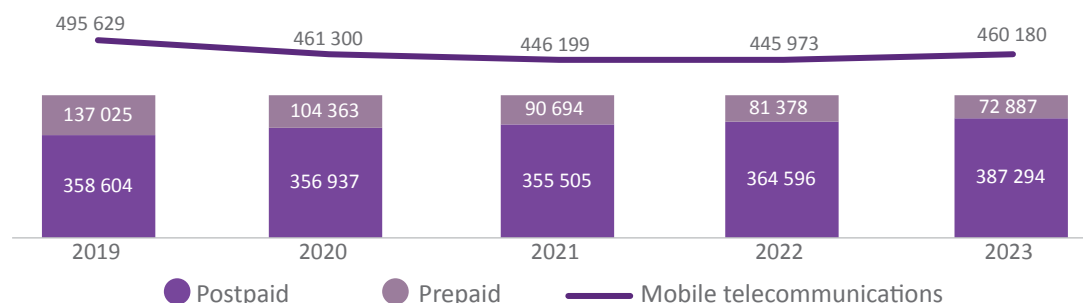
	2019	2020	2021	2022	2023
Mobile telecommunications	495 629	461 300	446 199	445 973	460 180
Prepaid	137 025	104 363	90 694	81 378	72 887
Postpaid	358 604	356 937	355 505	364 596	387 294

● Postpaid   ● Prepaid   ━ Mobile telecommunications

[1] Includes domestic and international mobile telephony, roaming, and data.
[2] As of 2023, the revenue from roaming services will be added to the total in order to comply with the data aggregation guidelines established by the International Telecommunication Union [ITU].
Source: SUTEL, General Directorate of Markets. Costa Rica, 2023.

Graph 102. Costa Rica: Average monthly revenue per mobile subscriber[1,2] [ARPU], broken down by payment plan, in 2019-2023
(figures in colones per month)

	2019	2020	2021	2022	2023
ARPU (mobile network)	5650	5117	4746	4719	5152
Monthly ARPU (prepaid)	2334	1737	1471	1391	1426
Monthly ARPU (postpaid)	12 360	11 867	10 993	10 119	10 136

● 2019   ● 2020   ○ 2021   ● 2022   ● 2023
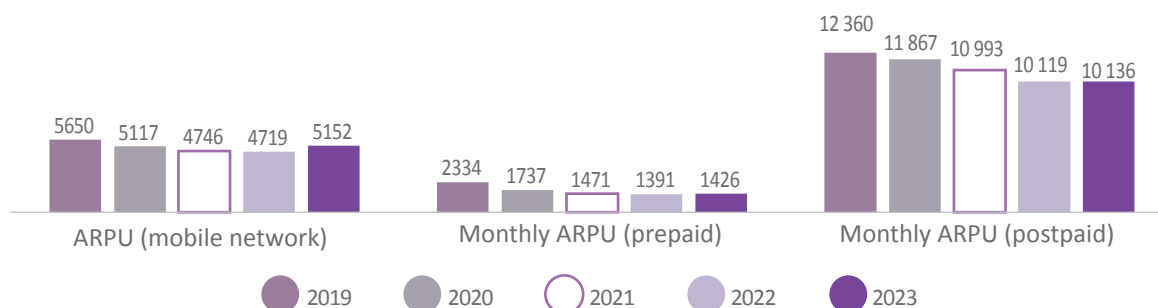
[1] The average revenue per user [ARPU] includes the revenue from: (i) outbound and inbound mobile voice calls made domestically and internationally; (ii) domestic and international SMS/MMS services; (iii) outbound roaming; and (iv) mobile data.

[2] As of 2023, the revenue from roaming services will be added to the total in order to comply with the data aggregation guidelines established by the International Telecommunication Union [ITU].
Source: SUTEL, General Directorate of Markets. Costa Rica, 2023.

Graph 103. Costa Rica: Successful telephone number ports1 in 2019-2023[1]
(yearly figures)

2019	2020	2021	2022	2023
490 733	454 429	450 960	434 015	350 213
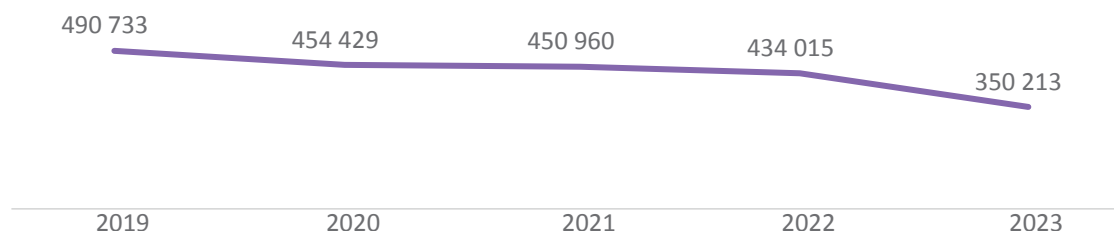
[1] Successful number porting: Number of telephone number ports that were successfully activated on a different operator's network. Source: SUTEL, General Directorate of Markets. Costa Rica, 2023..
Source: SUTEL, General Directorate of Markets. Costa Rica, 2023.

Graph 104. Costa Rica: Net number of ports[1,2] per operator in December 2013 to December 2023
(aggregate figures)

	ICE	Fullmóvil	Tuyo Móvil	Claro	Liberty
				385 542	619 602
	-975 051	-24 507	-5 586		

[1] Net number of ports: Number of imported ports minus exported ports.

[2] Only includes successful ports; i.e.: telephone number ports that were successfully activated on a different operator's network. Source: SU-TEL, General Directorate of Markets. Costa Rica, 2023.

Source: SUTEL, General Directorate of Markets. Costa Rica, 2023.

DATA
TRANSFER

2023

FIXED INTERNET

Subscriptions

This section of the report expounds on the behavior of fixed Internet services in the retail market nationwide. To begin this analysis, the behavior of fixed Internet subscriptions from 2019 to 2023 is carefully studied. Subscriptions can, however, be broken down into the number of subscriptions per type of technology, and into the number of subscriptions per Internet speed range. As such, in some cases, the period under analysis is limited to the three most recent years so that the reader can analyze this indicator more effectively and concisely.

It should also be noted that this method of analysis is consistent with the method for evaluating the relevant revenue indicators. This is done in order to ensure that the behavior represented in some of the graphs is comparable, and to make sure that the reader has all the information he or she requires to comprehensively assess the behavior of the fixed Internet market in the context of the key performance indicators. To that end, Graph 105 shows the total number of subscriptions reported by each operator from 2019 to 2023. It shows that, by the end of 2023, there were 1 149 924 fixed Internet subscriptions, which represents an increase of 4.0 % in relation to the previous year.

Following the above, the period of analysis is limited from 2021 to 2023 to assess the behavior of this service on a quarterly basis. On that account, Graph 106 reveals that this service shows an upward trend from quarter to quarter in the period of analysis. Focusing only on the behavior of Q4, there was an increase of 4.4 % from 2021 to 2022, and of 4.0 % from 2022 to 2023. This behavior is similar to that of the other quarters, to wit: there was an increase of 5.7 % from Q3 2021 to Q3 2022, and of 2.3 % from Q3 2022 to Q3 2023; there was an increase of 5.5 % from Q2 2021 to Q2 2022, and of 5.0 % from Q2 2022 to Q2 2023; and there was an increase of 5.3 % from Q1 2021 to Q1 2022, and of 4.6 % from Q1 2022 to Q1 2023.

As a complement to the introduction of this indicator in the analysis of the five-year period from 2019 to 2023,

Graph 107 shows the monthly evolution, year-to-year, of the number of subscriptions from January to December, in the form of a line graph. This graph reveals that the number of subscriptions showed an upward trend in the period of analysis (i.e.: there are more subscriptions in 2023 than in 2019), to wit: there was an increase of 58 065 subscriptions from January to December 2019 (an increase of 6.9 %); there was an increase of 77 417 subscriptions from January to December 2022 (an increase of 8.5 %); there was an increase of 58 825 subscriptions from January to December 2021 (an increase of 5.9 %); there was an increase of 44 061 subscriptions from January to December 2022 (an increase of 4.2 %); and there was an increase of 23 965 subscriptions from January to December 2023 (an increase of 2.1 %). It should be noted that, when comparing the monthly behavior per year, the period from July to November 2023 showed the lowest variation in relation to previous years, even falling below the trend line in 2023.

What follows is an analysis of the number of subscriptions per type of technology. These technologies are: (i) last-mile coaxial cable networks (cable modem); (ii) copper networks; (iii) fiber optic networks; and (iv) and other unspecified technologies, including wireless subscriptions, which were not listed by operators. Graph 108 shows the variations in the number of subscriptions per type of technology in 2021-2023, to wit: cable networks showed a decrease of 8.9 % from 2021 to 2022, and a decrease of 8.0 % from 2022 to 2023, which represents an average growth rate of -8.5 % for the period under analysis; while copper networks showed a decrease of 37.2 % from 2021 to 2022, and a decrease of 16.3 % from 2022 to 2023, which represents an average growth rate of -27.5 % for the period under analysis.

Conversely, fiber optic networks showed an increase of 52.7 % from 2021 to 2022, and an increase of 23.6 % from 2022 to 2023, which represents an average growth rate of 37.4 % for the period under analysis. Lastly, wireless/other technologies showed an increase of 0.7 % in 2022, and a decrease of 5.4 % in 2023, which represents an average growth rate of -2.4 % for the period under analysis.

Graph 109 shows the total number of monthly subscriptions per type of technology from 2021 to 2023. An estimate of the average monthly growth rate from January 2021 to December 2023 shows that: cable networks reported a decrease of 0.5 % (a decrease of 105 558 subscriptions), copper networks reported a decrease of 2.2 % (a decrease of 82 456 subscriptions), fiber optic networks reported an increase of 2.8 % (an increase of 338 020 subscriptions), and wireless/other technologies reported a decrease of 0.01 % (a decrease of 24 subscriptions).

Graph 110 shows the percentage distribution of fixed Internet subscriptions per type of technology in 2021-2023. It shows that coaxial cable networks accounted for 59.5 % of the total in 2021, 51.9 % of the total in 2022, and 45.9 % of the total in 2023. While copper networks accounted for 12.5 % of the total, 7.5 % of the total, and 6.1 % of the total, respectively. In contrast, fiber optic networks showed an upward trend in the period under analysis, namely: an increase of 27.3 % in 2021, an increase of 40.0 % in 2022, and an increase of 47.5 % in 2023. Wireless/other technologies accounted for 0.7 % of the total in 2021, 0.65 % of the total in 2022, and 0.59 % of the total in 2023.

Graph 111 provides additional details per type of technology, showing the share of total subscriptions per Internet speed range for each of these technologies in 2023. It shows that, with respect to coaxial cable networks, most subscribers use an Internet speed range of 30 Mbps to 100 Mbps (i.e.: 18.7 % of the total number of subscribers). The same is also true for fiber optic networks, where 17.5 % of the total number of subscribers use an Internet speed range of 30 Mbps to 100 Mbps. It also shows that, with respect to fiber optic networks, the Internet speed range with the second largest market share is between 10 Mbps and

30 Mbps with 14.4 % of the total, while the second largest market share for cable networks is the speed range of 100 Mbps to 250 Mbps with 10.4 % of the total. It should be noted that 4.1 % of all coaxial cable subscriptions have Internet speeds of more than 250 Mbps, while, in the case of fiber optic subscriptions, this percentage is 2.7 %.

In addition, **Graph 112** shows the number of fixed Internet subscriptions per advertised download speed range. This graph shows the behavior of fixed Internet subscriptions from 2021 to 2023 and, for the purpose of clarity, is limited to the four speed ranges specified in the ITU manual. In 2022 and 2023, a -66 % decrease was recorded for speeds below 2 Mbps; a -26.8 % decrease was recorded for speeds between 2 Mbps and 8 Mbps; a 0.4 % increase was recorded for speeds between 8 Mbps and 100 Mbps; and a 43 % year-over-year increase was recorded for speeds above 100 Mbps. In regard to the annual average growth rate reported for the period, the 8 Mbps to 100 Mbps speed range showed an increase of 5.3 %, while the speed ranges of over 100 Mbps showed an increase of 43.5 %.

Graph 113 breaks down the number of subscriptions, in accordance with the speed ranges specified by the ITU, by depicting the month-to-month evolution from 2021 to 2023. It shows that, in 2023, the speed ranges below 2 Mbps showed an average monthly growth rate of -3.2 %, the 2 Mbps to 10 Mbps speed range showed an average monthly growth rate of -2.5 %, the 10 Mbps to 100 Mbps speed range showed an average monthly growth rate of 0.3 %, and the speed ranges of over 100 Mbps showed an average monthly growth rate of 3.8 %.

In addition, **Graph 114** shows the month-to-month evolution of all the speed ranges that SUTEL stipulates operators must report. This graph only shows the results for 2023 for the purposes of clarity, and because this is the first year in which SUTEL will analyze the behavior of these speed ranges. The speed with the highest average monthly percentage variation was the 250 Mbps speed range, with an increase of 7.1 %, rising from 36 704 subscriptions to 77 755 subscriptions. The 30 Mbps to 100 Mbps and

the 100 Mbps to 250 Mbps speed ranges also showed an upward trend.

In addition, with respect to the number of subscriptions per Internet speed range, Graph 115 shows the total market share of each speed range at the end of every year. It shows that the speed ranges above 100 Mbps accounted for 14.6 % of the total in 2021, 20.2 % of the total in 2022, and 27.7 % of the total in 2023. The 30 Mbps to 100 Mbps speed range increased from 28.1 % in 2021 to 36.4 % in 2022, and remained largely unchanged in 2023. The lower end speed ranges, on the other hand, showed a downward trend, with the 2 Mbps to 10 Mbps speed range falling from 21.8 % in 2021 to 12.4 % in 2022, and eventually dropping to 8.8 % in 2023. Likewise, the speed ranges below 2 Mbps fell to 0.8 % by the end of 2023.

> ## 27.7 % of all subscriptions had Internet speed ranges above 100 Mbps in 2023.

Graph 116 expounds on a number of relevant aspects with regard to the analysis of this indicator, namely it shows the evolution of the Herfindahl-Hirschman market concentration index [HHI] from 2019 to 2023. The market reported an HHI value of 1987 in 2023, which represents a decrease of 174 points in relation to the start of the year, and a decrease of 117 points in relation to 2022. In spite of this drop, however, this HHI value confirms that the market is moderately concentrated in accordance with the competition guidelines established by the SUTEL. Graph 117 expounds on other information and relevant aspects in connection to this market, namely: the market share at the end of 2023, where Liberty Servicios Fijos accounted for 25.8 % of the total number of subscriptions, followed by Telecable with 23.7 %, Kölbi with 21.4 %, and Tigo with 16.8 %, while all other active operators accounted for the remaining 12.3 %.

Lastly, to conclude the subscription section of the report, Graph 118 shows the market penetration per 100

inhabitants from 2019 to 2023. To be specific, the service reached a market penetration of 21.9 % by the end of 2023, which represents an increase of 6.8 percentage points in relation to the start of the year. Graph 119, on the other hand, shows the market penetration per household for fixed Internet services, which rose to 64.6 % in 2023, an increase of 7.3 percentage points in relation to the start of the year.

FIXED INTERNET

Traffic

This section of the report provides a summary of the results for fixed Internet traffic, which is measured in terabytes [TB] of data being sent and received by users. Graph 120 shows that data traffic totaled 3 572 605 TB of data in 2019-2023, which represents an increase of 0.4 % in relation to the previous year, and an increase of 207 % in relation to 2019.

Moreover, Graph 121 represents the evolution of fixed Internet traffic per quarter from 2021 to 2023, revealing that data traffic showed an upward trend from quarter to quarter, except from Q3 2022 to Q3 2023, where it fell by 79 931 TB of data traffic. It should also be noted that data traffic increased by 8 % from Q4 2021 to Q4 2022, and by 4 % from Q3 2022 to Q3 2023.

Lastly, Graph 122 shows an estimate of the average data traffic per user by month in 2023. It showed that the estimated average data traffic increased from 263.7 GB of data in January 2023 to 288.8 GB of data in December 2023. July reported the lowest estimate with 250.4 GB of data per user.

FIXED INTERNET

Revenue

Lastly, to conclude the analysis of fixed Internet services in the retail market, a summary of the revenue earned from this service is provided from 2019 to 2023. In some instances, however, this analysis is li-

mited to the three most recent years for the purposes of clarity, especially when broken down per type of technology and Internet speed range. Graph 123 shows the total revenue per year in 2019-2023. Revenue generated from the provision of this service showed a downward trend in 2023, falling to 201 957 million colones in revenue, which represents a decrease of 2.2 % in relation to the previous year. In consistence with the above, Graph 124 shows the revenue earned from this service per quarter from 2021 to 2023. The graph revealed that the revenue from fixed Internet services showed an upward trend from quarter to quarter in 2021 and 2022 (i.e.: an increase of 9.4 % in Q1, 8.9 % in Q2, 6.5 % in Q3, and 4.5 % in Q4). From 2022 to 2023, however, it showed a downward trend, falling by 1.8 % in Q1, 2.8 % in Q2, 3.5 % in Q3, and 0.6 % in Q4. With respect to the average annual growth rate per quarter, Q1 showed an increase of 3.6 %, Q2 showed an increase of 2.9 %, Q3 showed an increase of 1.4 %, and Q4 showed an increase of 1.9 %.

Graph 125 shows the evolution of the revenue from fixed Internet services per type of technology. In particular, this graph shows the total revenue generated per type of connection technology from 2021 to 2023. It shows that the revenue from cable networks fell by 4.5 % from 2021 to 2022, and by 14.2 % from 2022 to 2023, with an average annual growth rate of -9 % in the period under analysis. Likewise, the revenue from copper networks fell by 11.9 % from 2021 to 2022, and by 56.4 % from 2022 to 2023, with an average annual growth rate of -38 % in the period under analysis. Conversely, the revenue from fiber optic networks increased by 32.3 % from 2021 to 2022, and by 28.2 % from 2022 to 2023, with an average annual growth rate of 30 % in the period under analysis. In regard to wireless/other technologies, revenue fell by 5.2 % and 23.0 %, respectively, with an average annual growth rate of -15 % in the period under analysis.

Prior to analyzing each type of technology per Internet speed range, Graph 126 shows the total monthly revenue, from January to December, for each year. This makes it possible to assess the annual evolution, in addition to other similar behaviors, from 2019 to 2023.

The increase in revenue reported in 2021 should be noted, when the revenue from fixed Internet services in December reached 16 568 million colones, which represents an increase of 23.9 % in relation to December 2020. This is particularly noteworthy because –given the prevailing circumstances and conditions worldwide– the revenue at the time totaled 13 372 million colones. In general terms, revenue showed an upward trend year-over-year with the exception of 2020. Revenue is estimated to have increased by 11.6 % in 2019, by 8.6 % in 2021, by 1.6 % in 2022, and by 3.3 % in 2023, whereas in 2020 it fell by 2.0 %.

Subsequently, to expound on the above assessment, revenue is analyzed in terms of type of technology and Internet speed range. To that end, Graph 127 shows the total revenue earned per month by type of technology from 2021 to 2023. The three most recent years are studied for the purpose of clarity, to the benefit of the reader, when analyzing each type of technology and when assessing each Internet speed range. On the one hand, the revenue from fiber optic networks showed an average monthly growth rate of 2.1 %. On the other hand, the revenue from coaxial cable networks, copper networks, and wireless/other technologies showed a decrease of 0.7 %, 2.7 %, and 1.2 %, respectively. The revenue earned per month from fiber optic technology increased from 5 167 million colones in January 2021 to 10 710 million colones in December 2023.

In addition, Graph 128 shows the share of revenue reported for each of these technologies from 2021 to 2023. Wireless/other technologies accounted for 2.5 % of the total in 2021, 1.7 % of the total in 2022, and 1.6 % of the total in 2023. Copper networks accounted for 19.5 % of the total in 2021, 8.2 % of the total in 2022, and 6.2 % of the total in 2023. Coaxial cable networks accounted for 41.4 % of the total in 2021, 35.7 % of the total in 2022, and 30.9 % of the total in 2023. Lastly, fiber optic networks accounted for 36.7 % of the total in 2021, 54.4 % of the total in 2022, and 61.3 % of the total in 2023.

Graph 129 shows the revenue earned in accordance with the Internet speed ranges established by the ITU from 2021 to 2023. This graph reveals that the speed

ranges over 100 Mbps showed an increase of 53 % from 2021 to 2022, an increase of 51 % from 2022 to 2023, and an average annual growth rate of 52.2 % in the period under analysis, while the 10 Mbps to 100 Mbps speed range showed an increase of 8 % from 2021 to 2022, a decrease of 9 % from 2022 to 2023, and an average annual growth rate of -0.8 % in the period under analysis. In contrast, the 2 Mbps to 10 Mbps speed range showed a decrease of 26.8 % in 2022, a decrease of 42.2 % in 2023, and an average annual growth rate of -34.9 % in the period under analysis. The speed ranges below 2 Mbps showed a decrease of 12 % from 2021 to 2022, a decrease of 66 % from 2022 to 2023, and an average annual growth rate of -45.1 % in the period under analysis.

As part of the analysis of the revenue earned from fixed Internet services, Graph 130 shows the revenue earned per month by each of the four speed ranges mentioned above from 2021 to 2023. It revealed that the speed ranges of over 100 Mbps showed the largest month-to-month increase, rising from 1690 million colones in January 2021 to 6886 million colones in December 2023, which represents an average monthly growth rate of 4.1 %. The other three speed ranges under analysis showed a downward trend in terms of the average monthly growth rate, to wit: the 2 Mbps speed range showed a decrease of 4.8 %, the 2 Mbps to 10 Mbps speed range showed a decrease of 3.1 %, and the 10 Mbps to 100 Mbps speed range showed a decrease of 0.02 %.

To complement the analysis of the revenue earned per speed range, Graph 131 shows the revenue earned per month by each of the speed ranges that the SUTEL requires operators to report since 2023. The graph showed that the 30 Mbps to 100 Mbps speed range reported the highest average monthly revenue in 2023 with 5601 million colones in revenue, followed by the 100 Mbps to 250 Mbps speed range with 4344 million colones in revenue. These ranges are followed, in descending order, by the 10 Mbps to 30 Mbps speed range with 4146 million colones in revenue per month, the 2 Mbps to 10 Mbps speed range with 1302 million colones in revenue per month, the speed ranges of over 250 Mbps with 1241 million

colones in revenue per month and the speed ranges under 2 Mbps with 197 million colones in revenue per month.

Graph 132 shows the market share per speed range in 2021-2023. The graph revealed that the increase in market share of the highest speed ranges is particularly noteworthy, insofar as the speed ranges of over 100 Mbps accounted for 15.0 % of the market in 2021, 21.5 % of the market in 2022, and 33.2 % of the market in 2023. The 30 Mbps to 100 Mbps speed range accounted for 24.3 % of the market in 2021, 28.8 % of the market in 2022, and 33.3 % of the market in 2023

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66.5 % of the revenue stemmed from subscriptions with an Internet speed of 30 Mbps or more in 2023.

Graph 133 shows the share of revenue per Internet speed range and type of technology by year-end 2023. For instance, fiber optic networks reported the most amount of revenue in the 30 Mbps to 100 Mbps speed range, accounting for 18.4 % of the total. Coaxial cable networks also reported the most amount of revenue in the 30 Mbps to 100 Mbps speed range, with 14.4 % of the total. In regard to fiber optic networks, the 10 Mbps to 30 Mbps speed range is particularly noteworthy, as it accounted for 16.7 % of the total revenue. Coaxial cable networks reported the second-most revenue in the 100 Mbps to 250 Mbps speed range, with 10.1 % of the total.

This report also outlines the average revenue per user on a month-to-month basis. However, given the information available, the ARPU is only shown from January 2021 to December 2023. Graph 134 shows the average revenue per user by month in the period under analysis. These values are obtained from the total revenue reported. It shows that the ARPU fell from 15 225 colones per month in January 2021 to 15 198 colones per month in December 2023. It also revealed that the average revenue per user surpassed

16 000 colones per month in two of the months under analysis, when it rose to 16 381 colones per month in May 2022 and to 16 503.6 colones per month in June 2022. Additionally, the lowest ARPU reported was in March 2023 with 14 511 colones per month.

> The average revenue per user in 2021-2023 is 15 405 colones per month.

In addition to the above analysis, Graph 135 shows the monthly average revenue per user for wired technologies, namely: coaxial cable networks, cable modem networks, fiber optic networks, and copper networks. It showed that, in January 2021, the ARPU of fiber optic networks was 24 862 colones, the ARPU of copper networks was 18 830 colones, and the ARPU of coaxial cable networks was 10 730 colones. The ARPU of these three technologies decreased by December 2023, when the ARPU of fiber optic networks fell to 19 620 colones, the ARPU of copper networks fell to 15 608 colones, and the ARPU of coaxial cable networks fell to 10 239 colones.

Lastly, Graph 136 shows the monthly average revenue per user broken down by Internet speed range. For this analysis, and on the basis of the data available, three speed ranges were defined for the benefit of the reader, namely: (i) speeds below 10 Mbps; (ii) speeds between 10 Mbps and 100 Mbps; and (iii) speeds above 100 Mbps. In regard to the first of these speed ranges, the average revenue per user increased from 19 332 colones in January 2021 to 21 573 colones in December 2023; in regard to the second speed range, the average revenue per user decreased from 14 611 colones in January 2021 to 12 900 colones in December 2023; and in regard to the third speed range, the average revenue per user decreased from 15 464 colones in January 2021 to 11 825 colones in December 2023.

WHOLESALE INTERNET ACCESS

Connections

Continuing with fixed Internet services, wholesale Internet access connections are analyzed to determine the number of connections brokered between network operators and service providers to access the global Internet. In view of the above, it should be noted that, in 2023, 17 different companies were engaged in the provision of wholesale Internet services, as shown in Graph 137.

Graph 138, however, reveals that the number of connections from 2019 to 2023 showed a downward trend, reaching a total of 2813 connections in 2023, which represents a decrease of 14 % in relation to 2022.

Moreover, Graph 139 shows the evolution of the number of wholesale Internet access connections from 2021 to 2023. The period of analysis is limited to the three most recent years for the purposes of clarity and to the benefit of the reader. This graph shows the total number of connections per quarter reported to the SUTEL in the period under analysis. The number of connections increased by 40.9 % from Q1 2021 to Q1 2022, and decreased by 2.6 % from Q1 2022 to Q1 2023. The number of connections increased by 25.7 % from Q2 2021 to Q2 2022, and decreased by 3.4 % from Q2 2022 to Q2 2023. The number of connections increased by 16.6 % from Q3 2021 to Q3 2022, and increased by 2.1 % from Q3 2022 to Q3 2023. In regard to Q4, the number of connections decreased by 4.0 % from 2021 to 2022, and increased by 14.1 % from 2022 to 2023.

Subsequently, Graph 140 shows the evolution of the number of connections per type of technology from 2021 to 2023. It showed that, by year's end, the PON/AON/Ethernet/+ technologies accounted for the majority of connections, rising from 1435 connections in January 2021 to 2521 connections in December 2023.

Graph 141 shows the market share per type of technology from 2021 to 2023. It shows that the PON/AON/Ethernet/+ technologies accounted for 81.6 % of the market in 2021, 90.5 % of the market in 2022, and 89.6 % of the market in 2023.

Lastly, Graph 142 shows the market share per Internet speed range from 2021 to 2023. It shows that the 10 Mbps to 100 Mbps speed range accounted for 51.3 % of the market in 2021, 46.5 % of the market in 2022, and 59.3 % of the market in 2023.

WHOLESALE INTERNET ACCESS

Revenue

Regarding the analysis of wholesale Internet services, Graph 143 shows the key performance indicator for revenue growth. Namely, this graph shows the total revenue reported for wholesale Internet services from 2019 to 2023. It shows that, by year-end 2023, wholesale Internet services reported 11 166 million colones in revenue, which represents an increase of 7.0 % in relation to 2022.

Graph 144 shows, as in the analysis of the number of connections above, the revenue earned per quarter from 2021 to 2023. This graph revealed that the revenue showed a downward trend from quarter to quarter in 2021 and 2022. While in 2022 and 2023, the revenue showed an increase in Q2 and Q4 of 27 % and 19 %, respectively.

Graph 145 shows the revenue earned per month by type of technology from 2021 to 2023. It revealed that DWDM technologies showed a monthly average growth rate of 0.1 %, while SDH/Microwave technologies showed a monthly average growth rate of -0.7 %, and PON/AON/Ethernet/+ technologies showed a monthly average growth rate of -0.4 %. Subsequently, to complement the above, Graph 146 shows the market share per type of technology from 2021 to 2023. It revealed that PON/AON/Ethernet/+ technologies accounted for 87.0 % of the total in 2021, 83.1 % of the total in 2022, and 88.0 % of the total in 2023.
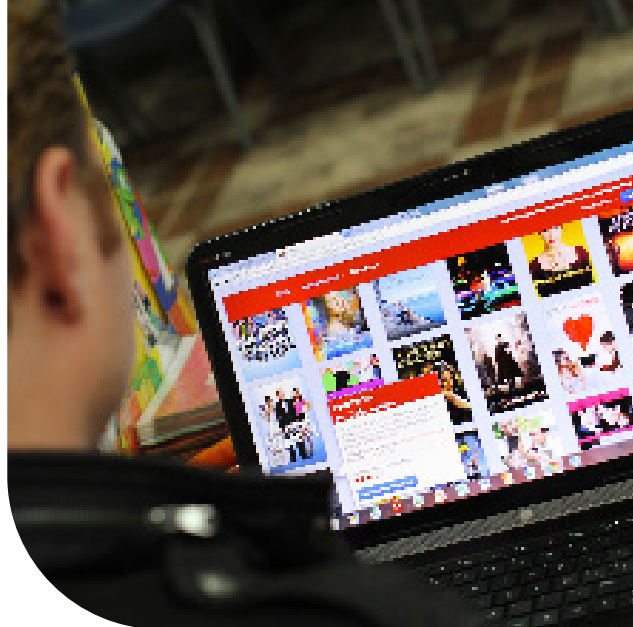
Lastly, Graph 147 shows the share of revenue per Internet speed range from 2021 to 2023. It showed that the speeds under 10 Mbps accounted for 15.9 % of the total in 2021, 3.7 % of the total in 2022, and 8.1 % of the total in 2023. The 10 Mbps to 100 Mbps speed range accounted for 28.5 % of the total in 2021, 17.7 % of the total in 2022, and 33.6 % of the total in 2023. The 100 Mbps to 1 Gbps speed range accounted for 40 % of the total in 2021, 47.5 % of the total in 2022, and 37.2 % of the total in 2023. Lastly, the 1 Gbps to 600 Gbps speed range accounted for 15.6 % of the total in 2021, 31.1 % of the total in 2022, and 21.1 % of the total in 2023.

RETAIL FIXED INTERNET PER DISTRICT

Average download speed

Map 1 is a heat map that provides a visual representation of the average download speed nationwide for the purpose of complementing this section of the analysis. The map is generated with information provided anonymously by network operators and service providers that render fixed Internet services at the retail level, allowing the reader to visualize the level of subscriptions and the average download speeds per district. The heat map depicts the average download speed, in Mbps, of each district across the entire Costa Rican territory. The highest average download speed is of 130 Mbps, while the lowest speed is of 10 Mbps. Readers will be able to visualize that certain districts in the vicinity of the greater metropo-

litan area, around popular tourist destinations, and near the provincial capitals, have higher download speeds than others. For more information, please refer to the SUTEL's official website for an infographic with a summary of the most relevant data per district (https://www.sutel.go.cr/pagina/evolucion-internet-fijo).

Graph 105. Costa Rica: Total fixed Internet subscriptions by year-end in 2019-2023
(yearly figures)

Year	Subscriptions
2019	904 734
2020	992 725
2021	1 058 767
2022	1 105 670
2023	1 149 924
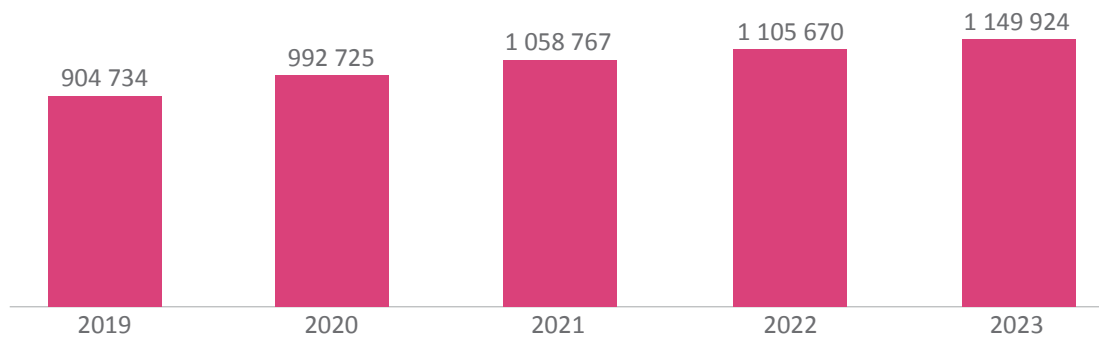
Source: SUTEL, General Directorate of Markets. Costa Rica, 2023.

Graph 106. Costa Rica: Fixed Internet subscriptions per quarter in 2021-2023
(quarterly figures)

Quarter	2021	2022	2023
Q1	1 020 653	1 074 944	1 124 333
Q2	1 024 865	1 080 825	1 134 411
Q3	1 044 185	1 103 529	1 128 977
Q4	1 058 767	1 105 670	1 149 924

2021   2022   2023
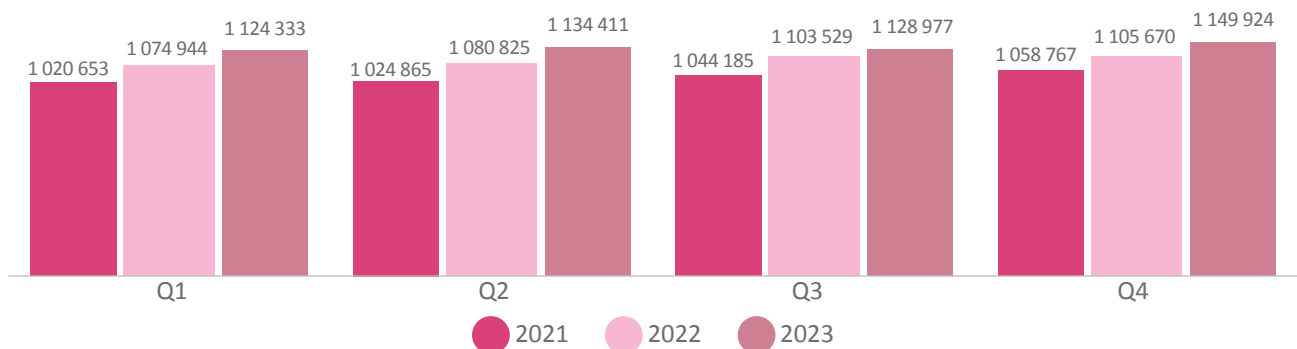
Source: SUTEL, General Directorate of Markets. Costa Rica, 2023.

Graph 107. Costa Rica: Fixed Internet subscriptions per month (annual comparison) in 2021-2023
(monthly figures)
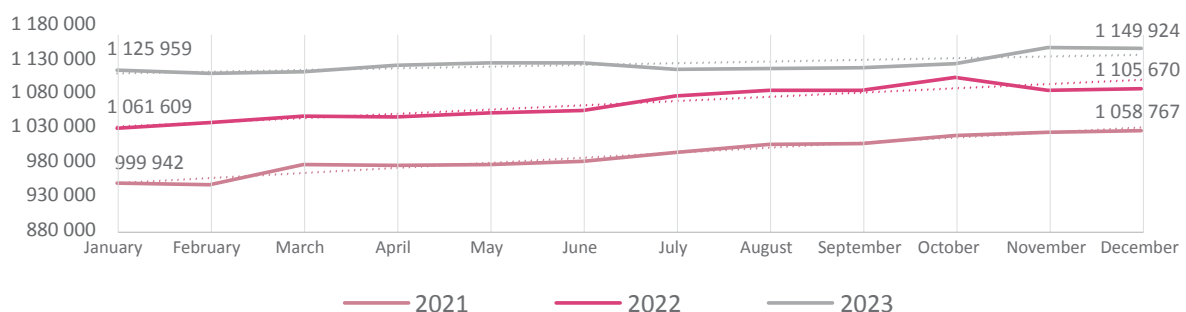
Source: SUTEL, General Directorate of Markets. Costa Rica, 2023.

Graph 108. Costa Rica: Fixed Internet subscriptions per type of technology (annual comparison) in 2021-2023
(yearly figures)

Cable modem
- 2021: 629 742
- 2022: 573 514
- 2023: 527 589

xDSL
- 2021: 132 684
- 2022: 83 280
- 2023: 69 743

Optical fiber
- 2021: 289 249
- 2022: 441 734
- 2023: 545 837

Wireless/Others
- 2021: 7092
- 2022: 7142
- 2023: 6755

Legend: ● 2021 ● 2022 ● 2023
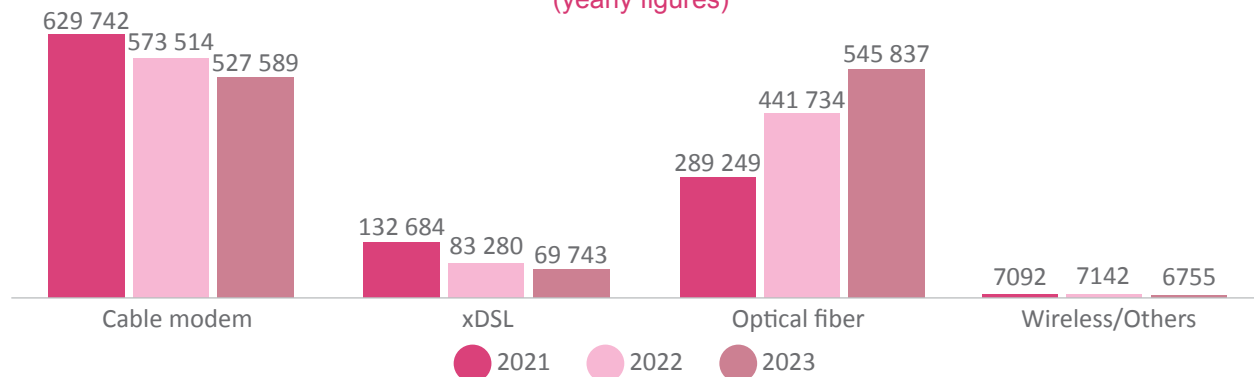
Source: SUTEL, General Directorate of Markets. Costa Rica, 2023.

Graph 109. Costa Rica: Fixed Internet subscriptions per type of technology (monthly comparison) in 2021-2023
(monthly figures)

Legend: ● Cable modem ● xDSL ● Optical fiber ● Wireless/Others
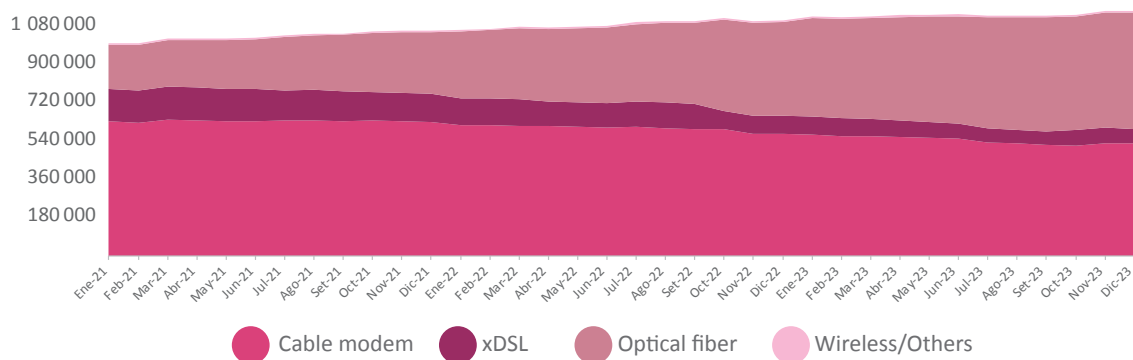
Source: SUTEL, General Directorate of Markets. Costa Rica, 2023.

Graph 110. Costa Rica: Percentage distribution of fixed Internet subscriptions per type of technology (year-end) in 2021-2023
(figures in percentage terms)

2021
- Wireless/Others: 0.7 %
- Optical fiber: 27.3 %
- xDSL: 12.5 %
- Cable modem: 59.5 %

2022
- Wireless/Others: 0.6 %
- Optical fiber: 40.0 %
- xDSL: 7.5 %
- Cable modem: 51.9 %

2023
- Wireless/Others: 0.6 %
- Optical fiber: 47.5 %
- xDSL: 6.1 %
- Cable modem: 45.9 %

Legend: ● Cable modem ● xDSL ● Optical fiber ● Wireless/Others
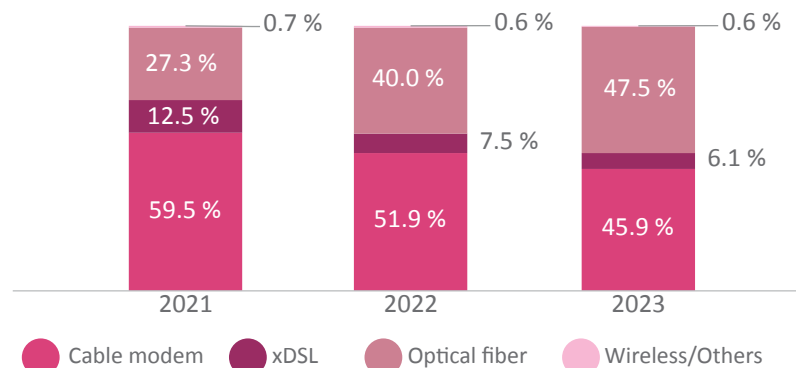
Source: SUTEL, General Directorate of Markets. Costa Rica, 2023.

Graph 111. Costa Rica: Percentage distribution of fixed Internet subscriptions per speed range (year-end) in 2023

(figures in percentage terms)

	Coaxial	Fiber	xDSL	Wireless/Other
Up to 2 Mbps	0.2	0.0	0.6	0.0
From 2 Mbps to 10 Mbps	3.1	2.3	3.2	0.1
From 10 Mbps to 30 Mbps	9.4	14.4	2.2	0.4
From 30 Mbps to 100 Mbps	18.7	17.5	0.1	0.1
From 100 Mbps to 250 Mbps	10.4	10.5	0.0	0.0
More than 250 Mbps	4.1	2.7	0.0	0.0

Source: SUTEL, General Directorate of Markets. Costa Rica, 2023.

Graph 112. Costa Rica: Number of fixed Internet subscriptions per advertised speed range (ITU) in 2021-2023

(yearly figures)

	S <= 2 mbps	2 mbps < S = 10 mbps	8 mbps < S = 100 mbps	100 mbps < S
2021	22 791	230 297	651 190	154 489
2022	26 154	137 551	719 053	222 912
2023	8830	100 640	722 175	318 279

Source: SUTEL, General Directorate of Markets. Costa Rica, 2023.

Graph 113. Costa Rica: Monthly comparison of fixed Internet subscriptions per speed range (ITU) in 2021-2023

(monthly figures)

Legend: 100 mbps < S; 10 mbps < S = 100 mbps; 2 Mbps < S = 10 Mbps; S <= 2 mbps
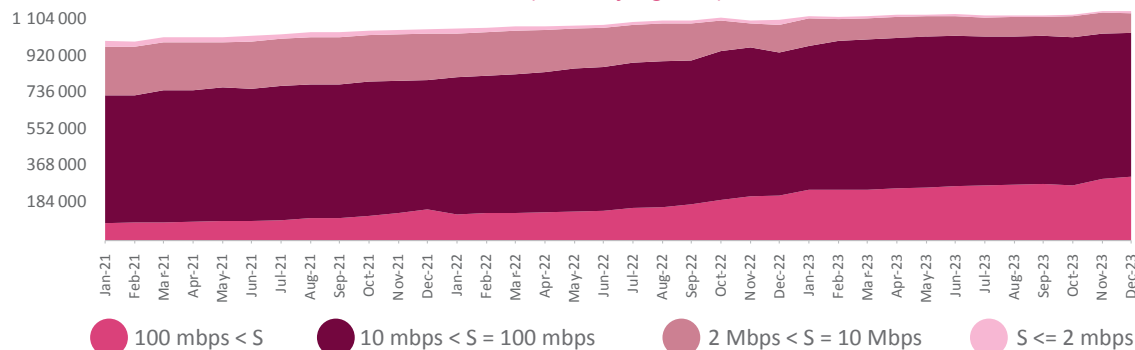
Source: SUTEL, General Directorate of Markets. Costa Rica, 2023.

Graph 114. Costa Rica: Monthly comparison of fixed Internet subscriptions per speed range (SUTEL) in 2023
(monthly figures)

Legend:
- Up to 2 Mbps
- From 2 Mbps to 10 Mbps
- From 10 Mbps to 30 Mbps
- From 30 Mbps to 100 Mbps
- From 100 Mbps to 250 Mbps
- More than 250 Mbps
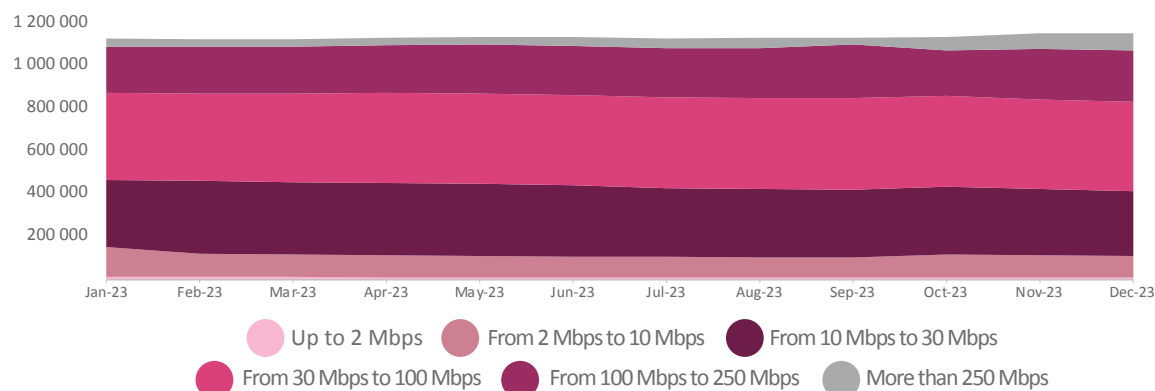
Source: SUTEL, General Directorate of Markets. Costa Rica, 2023.

Graph 115. Costa Rica: Percentage distribution of fixed Internet subscriptions per speed range (year-end) in 2021-2023
(figures in percentage terms)

2021: 14.6 %, 28.1 %, 33.4 %, 21.8 %, 2.2%
2022: 20.2 %, 36.4 %, 28.6 %, 12.4 %, 2.4%
2023: 27.7 %, 36.4 %, 26.4 %, 8.8 %, 0.8%

Legend:
- Up to 2 Mbps
- From 2 Mbps to 10 Mbps
- From 10 Mbps to 30 Mbps
- From 30 Mbps to 100 Mbps
- More than 100 Mbps
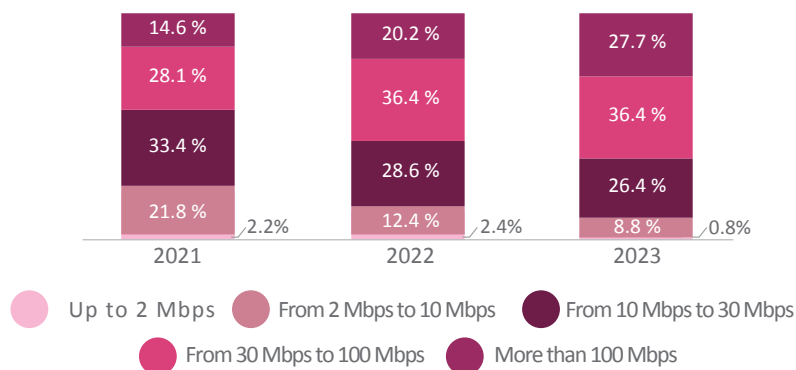
Source: SUTEL, General Directorate of Markets. Costa Rica, 2023.

Graph 116. Costa Rica: Evolution of the HHI index in the fixed Internet sector in 2019-2023
(yearly figures)

2019	2020	2021	2022	2023
2367	2328	2191	2104	1987
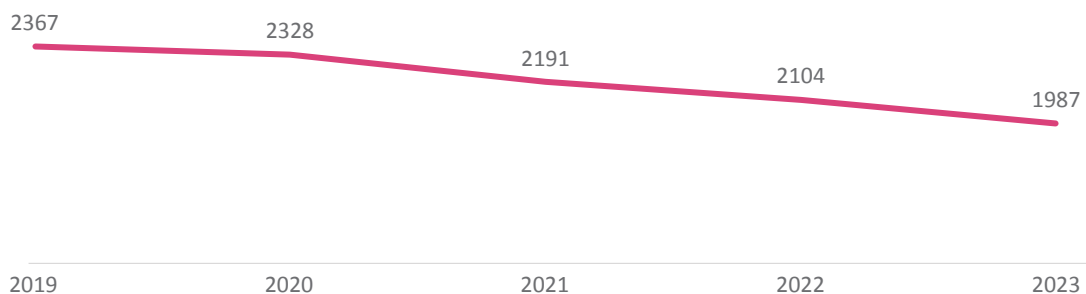
Source: SUTEL, General Directorate of Markets. Costa Rica, 2023.

Graph 117. Costa Rica. Market share of fixed Internet subscriptions by year-end 2023
(yearly figures)

25.8 %
12.3 %
16.8 %
21.4 %
23.7 %

Liberty servicios fijos LY Sociedad Anónima

Telecable, S . A.

Instituto Costarricense de Electricidad

Millicom Cable Costa Rica S. A.

Restantes operadores
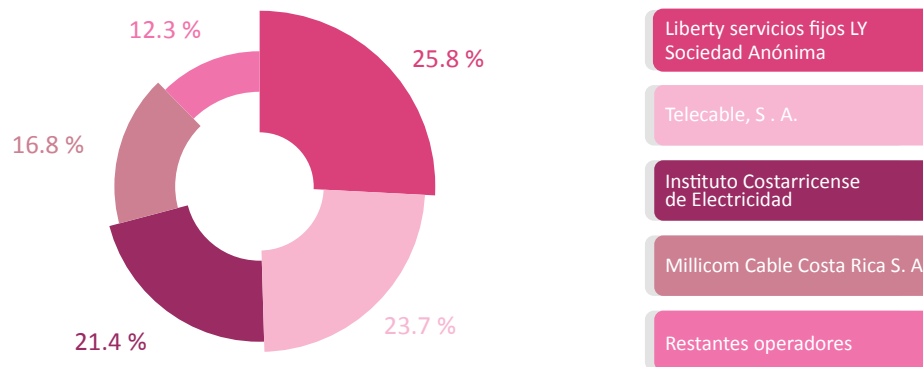
Source: SUTEL, General Directorate of Markets. Costa Rica, 2023.

Graph 118. Costa Rica: Penetration of fixed Internet subscriptions per every 100 inhabitants (year-end) in 2019-2023
(figures in percentage terms)

17.9 %	19.4 %	20.5 %	21.0 %	21.9 %
2019	2020	2021	2022	2023
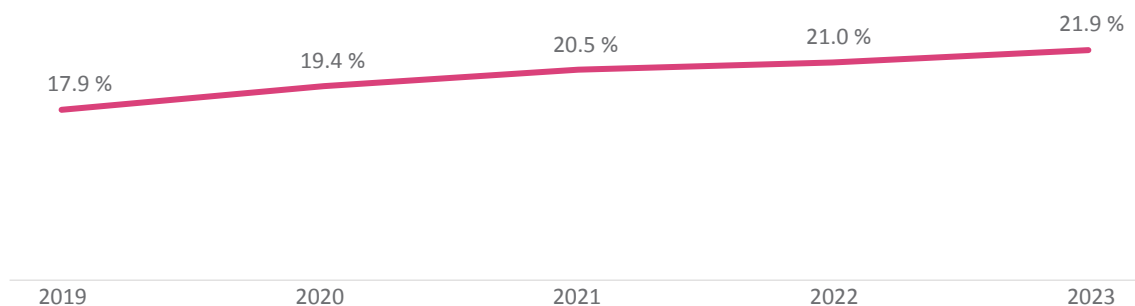
Source: SUTEL, General Directorate of Markets. Costa Rica, 2023.

Graph 119. Costa Rica: Penetration of fixed Internet subscriptions per every 100 households (year-end) in 2019-2023
(figures in percentage terms)

57.3 %	62.8 %	64.2 %	64.2 %	64.6 %
2019	2020	2021	2022	2023
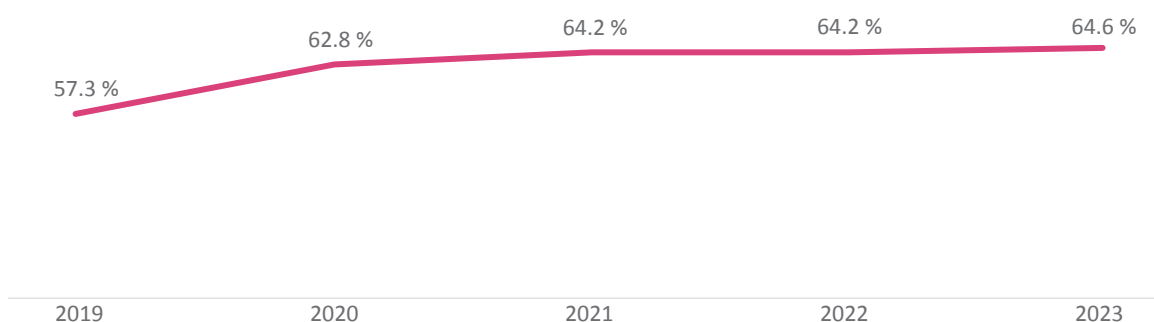
Source: SUTEL, General Directorate of Markets. Costa Rica, 2023.

Graph 120. Costa Rica: Total fixed Internet traffic (year-end) in 2019-2023
(figures in TB)

Year	Value
2019	1 162 046
2020	2 212 271
2021	3 279 824
2022	3 557 077
2023	3 572 605
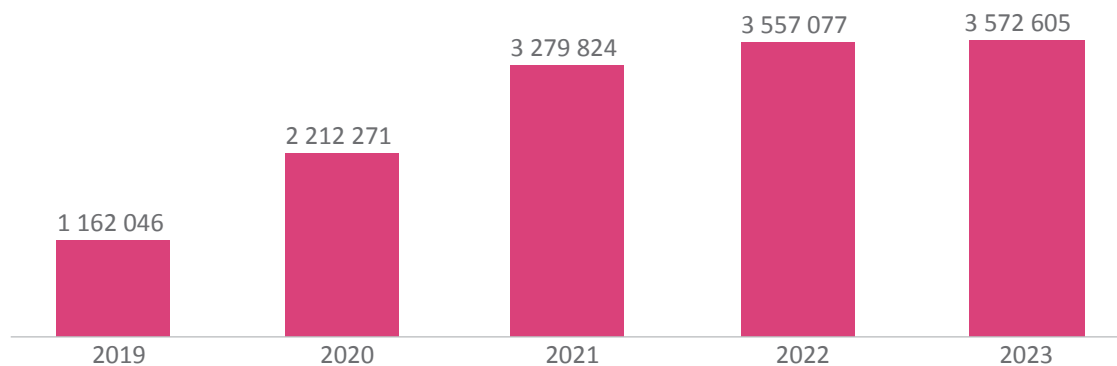
Source: SUTEL, General Directorate of Markets. Costa Rica, 2023.

Graph 121. Costa Rica: Fixed Internet traffic per quarter in 2021-2023
(figures in TB)

Quarter	2021	2022	2023
Q1	749 694	824 634	857 226
Q2	814 389	855 125	883 176
Q3	865 976	961 209	881 278
Q4	849 765	916 108	950 925
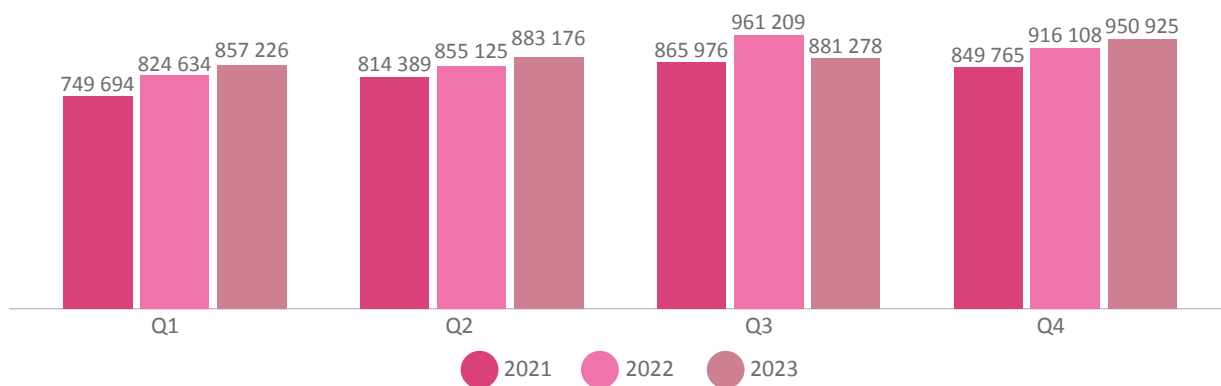
Source: SUTEL, General Directorate of Markets. Costa Rica, 2023.

Graph 122. Costa Rica: Fixed Internet traffic per user (average by month) in 2023
(figures in GB of data per subscriber)

Jun-23: 263.7
Dec-23: 288.8
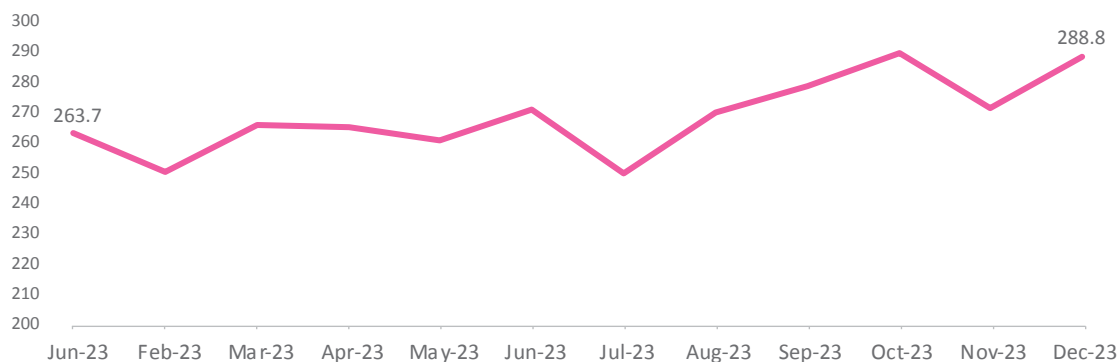
Source: SUTEL, General Directorate of Markets. Costa Rica, 2023.

Graph 123. Costa Rica: Total revenue from fixed Internet subscriptions (year-end) in 2019-2023
(figures in millions of colones)

Year	Revenue
2019	160 518
2020	170 879
2021	192 484
2022	206 476
2023	201 957
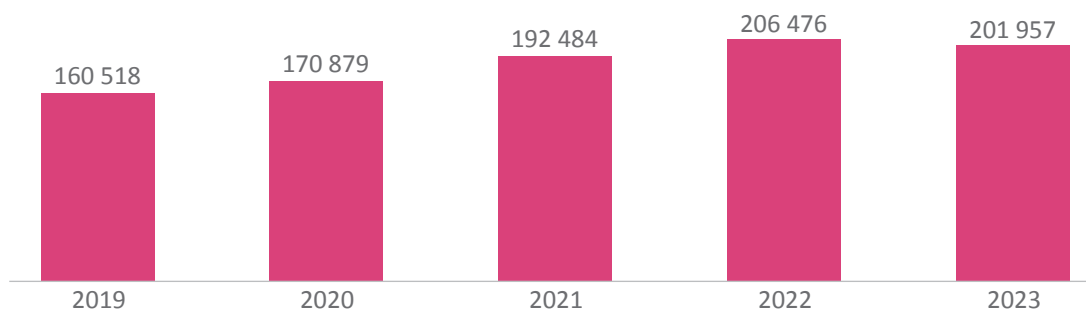
Source: SUTEL, General Directorate of Markets. Costa Rica, 2023.

Graph 124. Costa Rica: Revenue from fixed Internet subscriptions per quarter in 2021-2023
(figures in millions of colones)

Quarter	2021	2022	2023
Q1	46 363	50 726	49 803
Q2	48 246	52 523	51 049
Q3	48 585	51 724	49 920
Q4	49 290	51 502	51 185
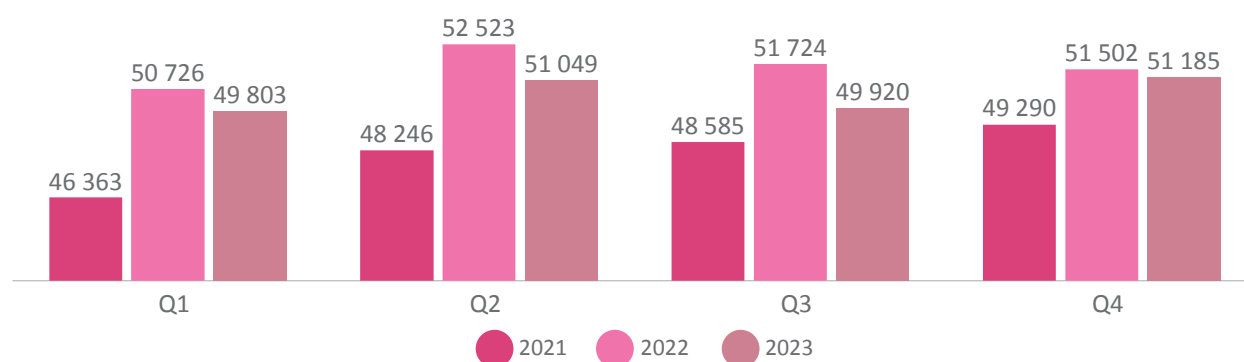
Source: SUTEL, General Directorate of Markets. Costa Rica, 2023.

Graph 125. Costa Rica: Revenue from fixed Internet subscriptions per type of technology by quarter in 2021-2023
(figures in millions of colones)

Technology	2021	2022	2023
Cable modem	82 660	78 974	67 790
xDSL	36 091	31 788	13 864
Optical fiber	68 772	91 008	116 683
Wireless/Others	4961	4705	3621
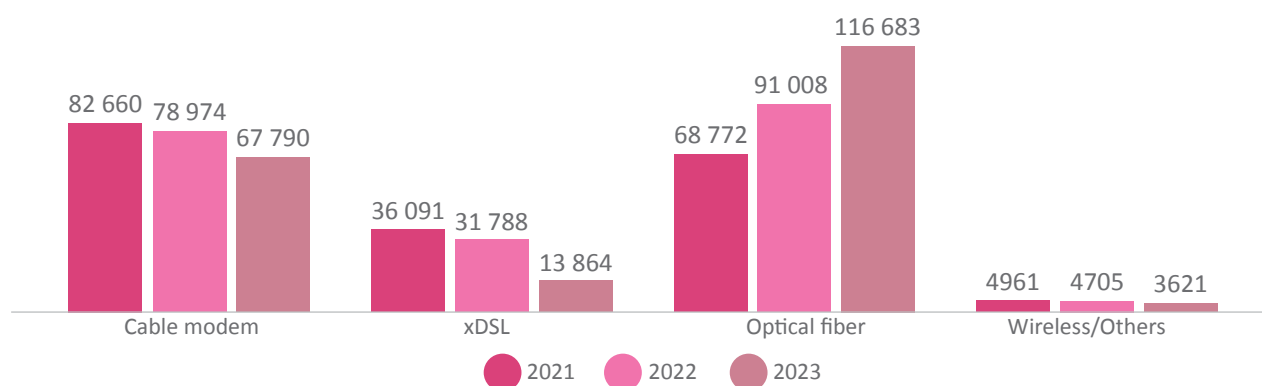
Source: SUTEL, General Directorate of Markets. Costa Rica, 2023.

Graph 126. Costa Rica: Revenue from fixed Internet subscriptions per month (annual comparison) in 2021-2023
(monthly figures)

Legend: 2021, 2022, 2023

Values shown: 17 477, 17 074, 16 568
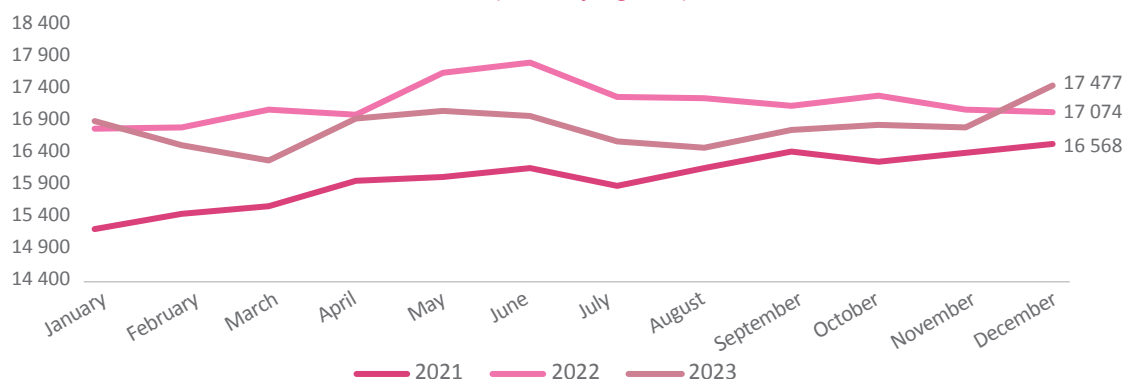
Source: SUTEL, General Directorate of Markets. Costa Rica, 2023.

Graph 127. Costa Rica: Percentage distribution of revenue from fixed Internet subscriptions per type of technology by month in 2021-2023
(figures in millions of colones)

Legend: Cable modem, xDSL, Optical fiber, Wireless/Others
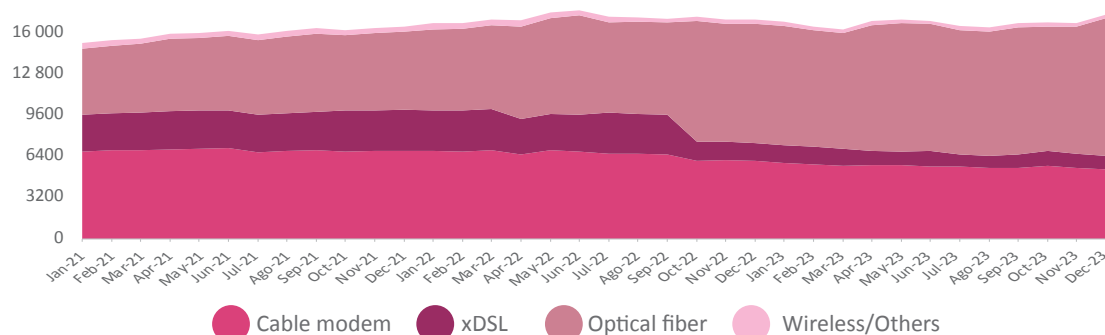
Source: SUTEL, General Directorate of Markets. Costa Rica, 2023.

Graph 128. Costa Rica: Percentage distribution of revenue from fixed Internet subscriptions per type of technology by month in 2021-2023
(figures in millions of colones)

	Q2	Q3	Q4
Wireless/Others	2.5 %	1.7 %	1.6 %
xDSL	19.5 %	8.2 %	6.2 %
Optical fiber	36.7 %	54.4 %	61.3 %
Cable modem xDSL	41.4 %	35.7 %	30.9 %

Legend: Cable modem xDSL, Optical fiber, xDSL, Wireless/Others
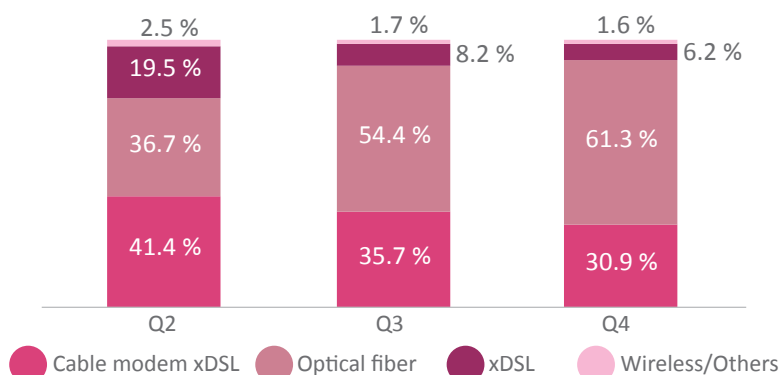
Source: SUTEL, General Directorate of Markets. Costa Rica, 2023.

Graph 129. Costa Rica: Revenue from fixed Internet subscriptions per speed range (year-end) in 2021-2023

(figures in millions of colones)

Legend: 2021, 2022, 2023

Speed range	2021	2022	2023
S <= 2 Mbps	7816	6855	2360
2 mbps < S = 10 mbps	36 911	27 011	14 621
10 mbps < S = 100 mbps	118 820	128 289	116 962
100 mbps < S	28 937	44 320	67 015
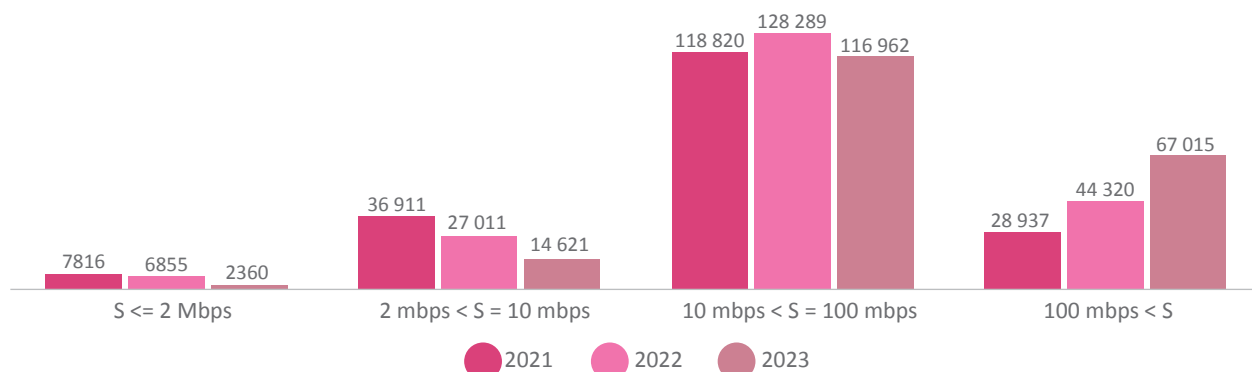
Source: SUTEL, General Directorate of Markets. Costa Rica, 2023.

Graph 130. Costa Rica: Monthly comparison of revenue from fixed Internet subscriptions per speed range (ITU) in 2021-2023

(figures in millions of colones)

Legend: S <= 2 Mbps, 2 mbps < S = 10 mbps, 10 mbps < S = 100 mbps, 100 mbps < S
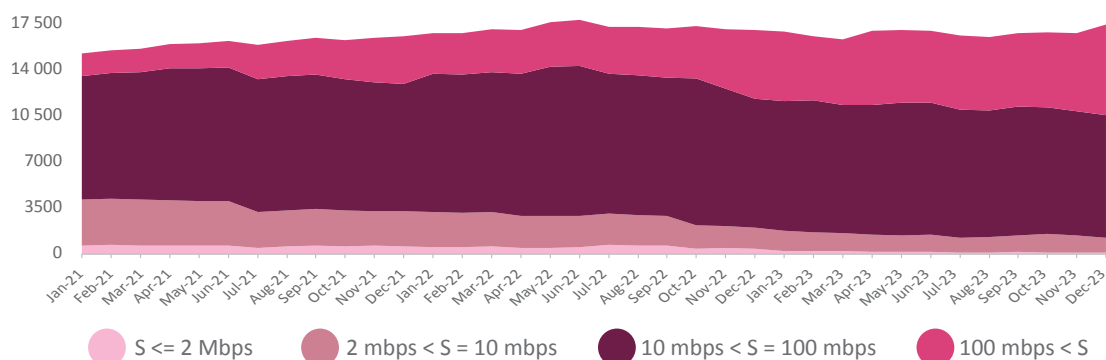
Source: SUTEL, General Directorate of Markets. Costa Rica, 2023.

Graph 131. Costa Rica: Monthly comparison of revenue from fixed Internet subscriptions per speed range (SUTEL) in 2023

(figures in millions of colones)

Legend: Up to 2 Mbps, From 2 Mbps to 10 Mbps, From 10 Mbps to 30 Mbps, From 30 Mbps to 100 Mbps, From 100 Mbps to 250 Mbps, More than 250 Mbps
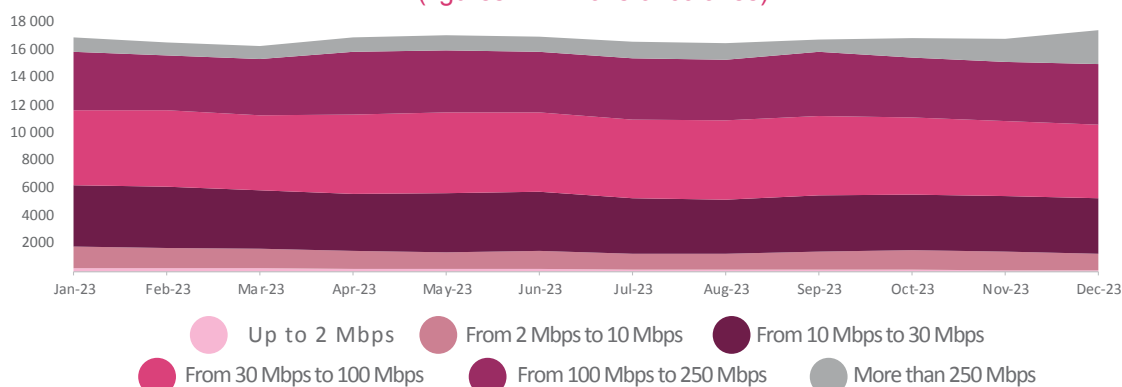
Source: SUTEL, General Directorate of Markets. Costa Rica, 2023.

Graph 132. Costa Rica: Revenue from fixed Internet subscriptions per speed range (year-end) in 2021-2023
(figures in percentage terms)

Speed range	2021	2022	2023
More than 100 Mbps	15 %	21.5 %	33.2 %
From 30 Mbps to 100 Mbps	24.3 %	28.8 %	33.3 %
From 10 Mbps to 30 Mbps	37.4 %	33.3 %	24.6 %
From 2 Mbps to 10 Mbps	19.2 %	13.1 %	7.7 %
Up to 2 Mbps	4.1 %	3.3 %	1.2 %

Legend: Up to 2 Mbps · From 2 Mbps to 10 Mbps · From 10 Mbps to 30 Mbps · From 30 Mbps to 100 Mbps · More than 100 Mbps
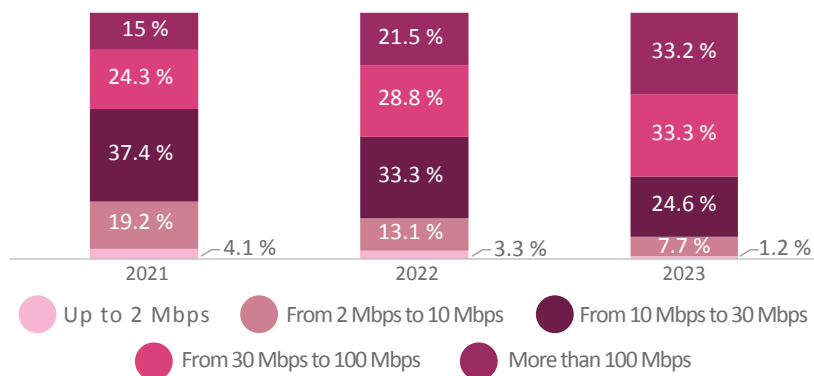
Source: SUTEL, General Directorate of Markets. Costa Rica, 2023.

Graph 133. Costa Rica: Percentage distribution of revenue from fixed Internet subscriptions per type of technology and Internet speed range by year-end 2023
(figures in percentage terms)

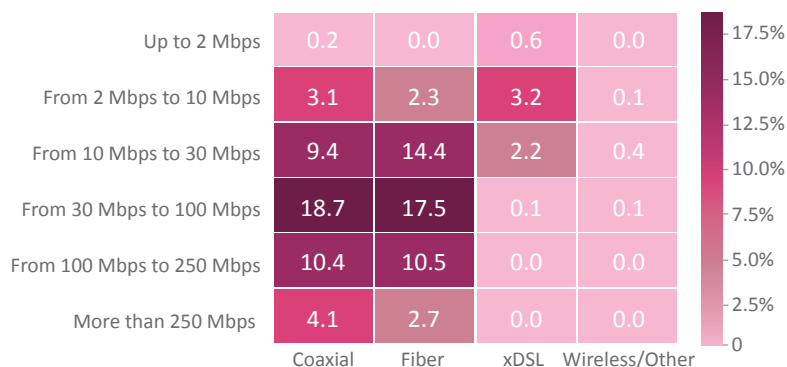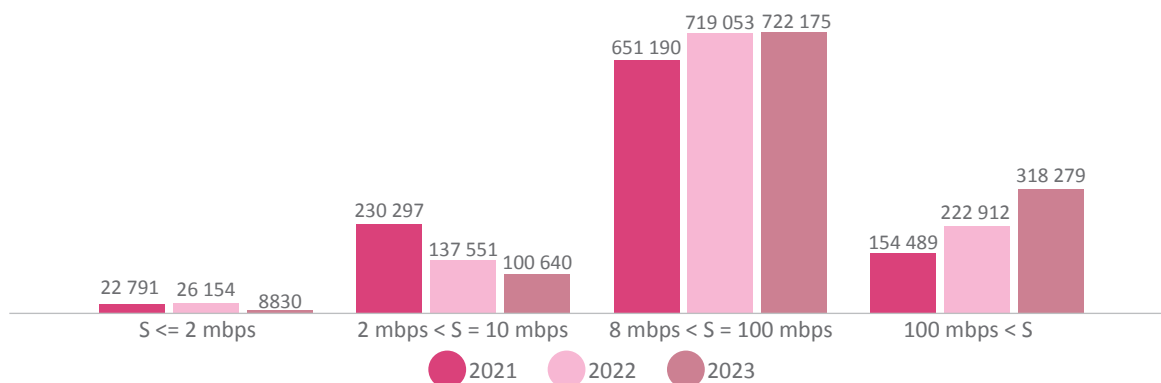|	Coaxial	Fiber	xDSL	Wireless/Other
Up to 2 Mbps	0.1	0.4	0.6	0.1
From 2 Mbps to 10 Mbps	1.9	2.0	3.5	0.3
From 10 Mbps to 30 Mbps	4.3	16.7	2.8	0.9
From 30 Mbps to 100 Mbps	14.4	18.4	0.1	0.4
From 100 Mbps to 250 Mbps	10.1	15.7	0.0	0.0
More than 250 Mbps	2.8	4.6	0.0	0.0
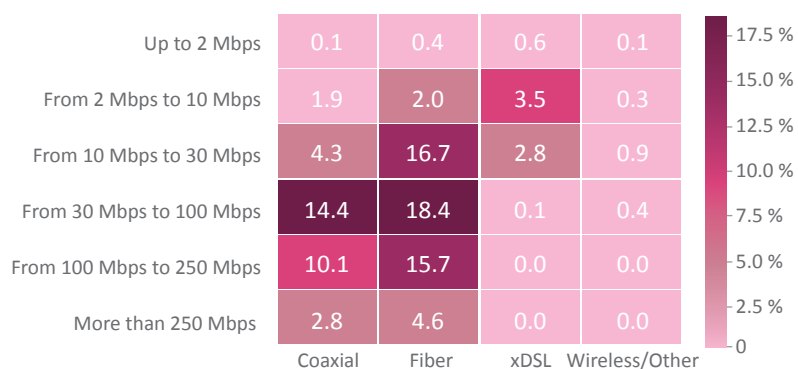
Source: SUTEL, General Directorate of Markets. Costa Rica, 2023.

Graph 134. Costa Rica: Revenue from fixed Internet subscriptions per user (average) by month in 2021-2023
(figures in colones)

15 255 ... 15 198
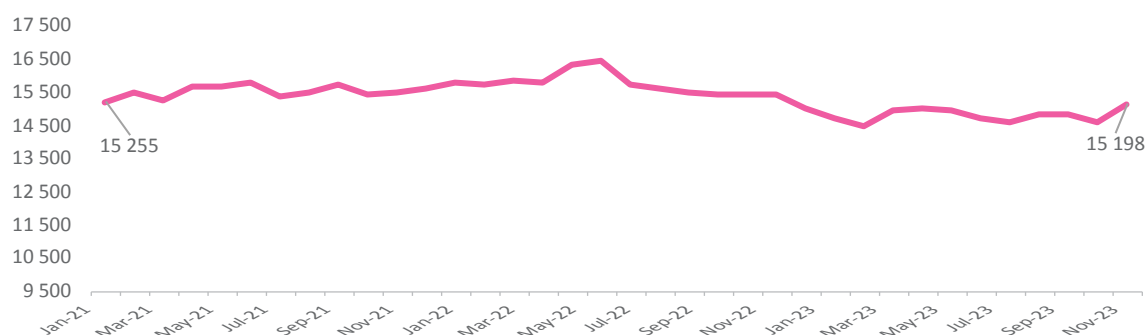
Source: SUTEL, General Directorate of Markets. Costa Rica, 2023.

Graph 135. Costa Rica: Monthly average revenue per user of fixed-line (wired) technologies in 2021-2023
(figures in colones)

Legend: Cable modem — xDSL — Optical fiber
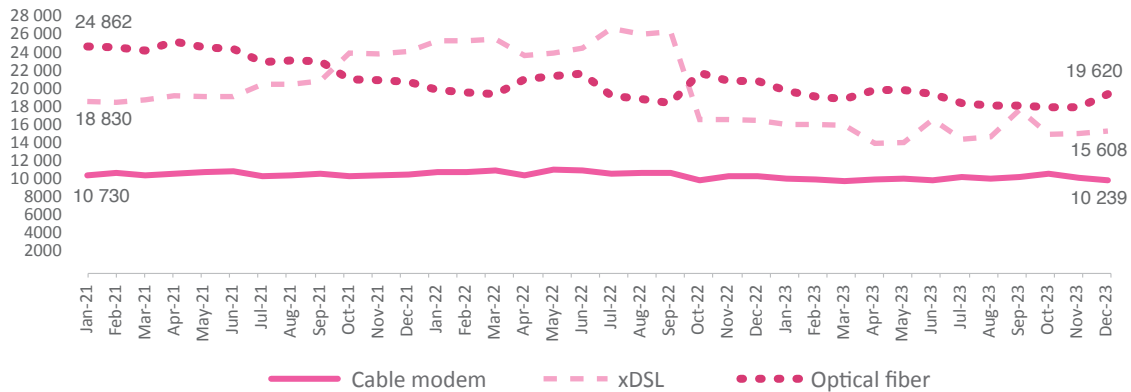
Source: SUTEL, General Directorate of Markets. Costa Rica, 2023.

Graph 136. Costa Rica: Monthly average revenue per user of fixed Internet services per Internet speed range in 2021-2023
(figures in colones)

Legend: S <= 10 Mbps — 10 mbps < S = 100 mbps — 100 mbps < S
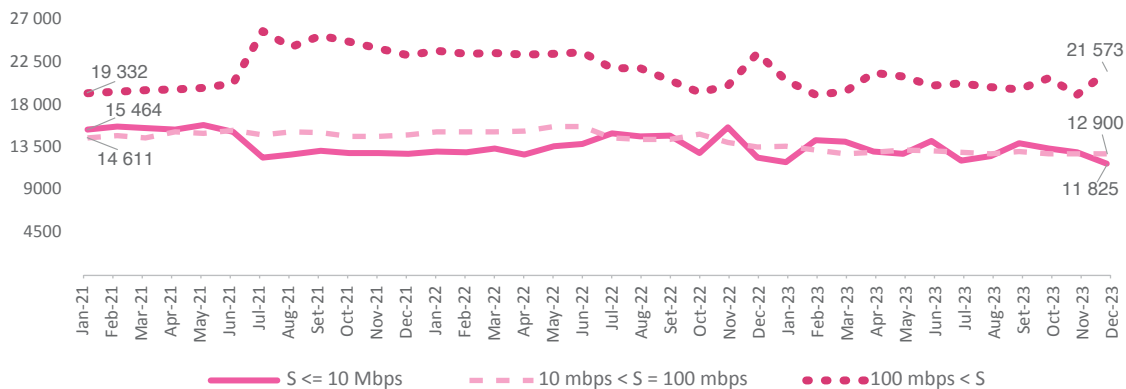
Source: SUTEL, General Directorate of Markets. Costa Rica, 2023.

Graph 137. Costa Rica: Number of wholesale Internet access connections and participating companies in 2019-2023
(yearly figures)

2019	2020	2021	2022	2023
12	16	17	15	17
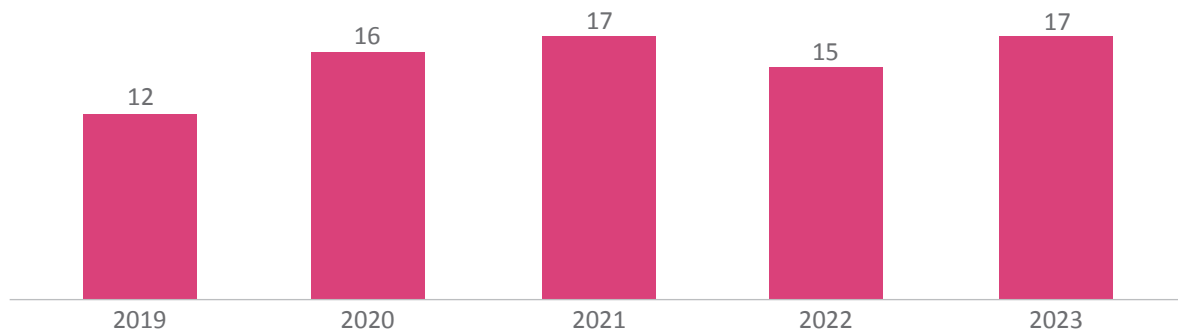
Source: SUTEL, General Directorate of Markets. Costa Rica, 2023.

Graph 138. Costa Rica: Total number of wholesale Internet access connections (year-end) in 2021-2023
(yearly figures)

Year	Value
2019	556
2020	926
2021	2568
2022	2465
2023	2813
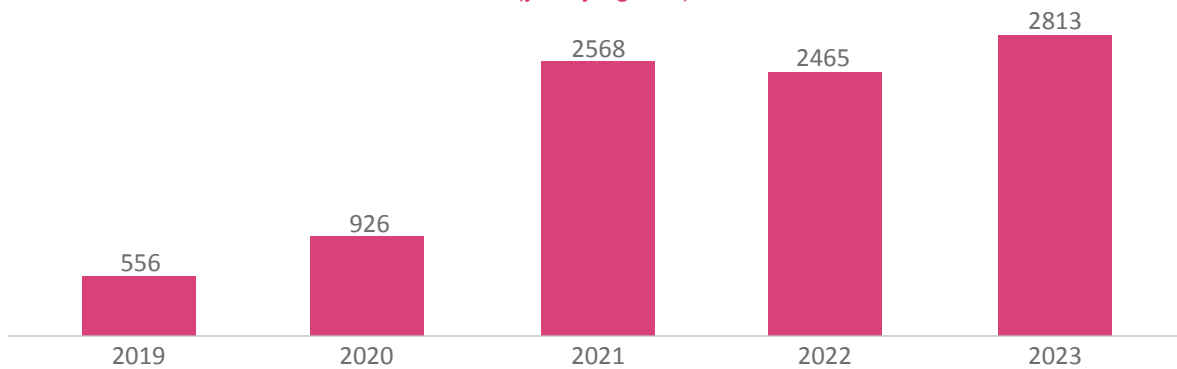
Source: SUTEL, General Directorate of Markets. Costa Rica, 2023.

Graph 139. Costa Rica: Number of wholesale Internet access connections per quarter in 2021-2023
(quarterly figures)

Quarter	2021	2022	2023
Q1	1767	2489	2425
Q2	1962	2466	2382
Q3	2314	2697	2753
Q4	2568	2465	2813
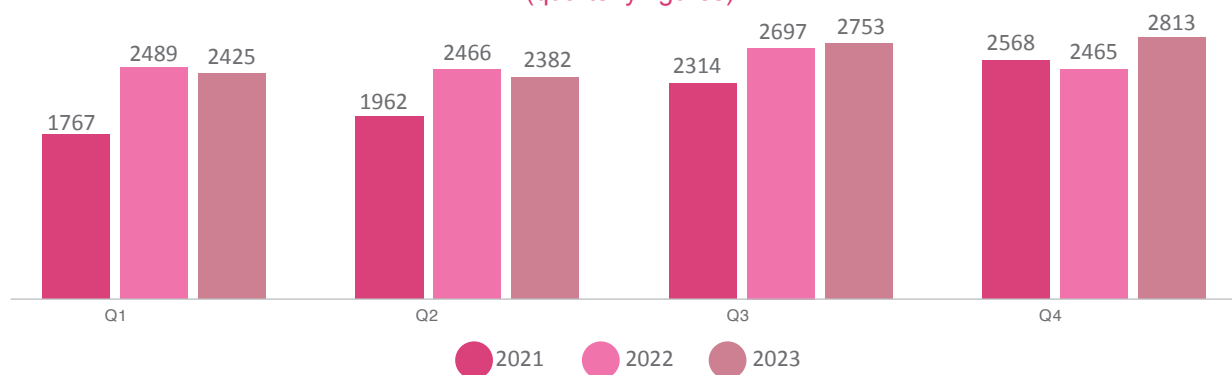
Source: SUTEL, General Directorate of Markets. Costa Rica, 2023.

Graph 140. Costa Rica: Number of wholesale Internet access connections per type of technology by month in 2021-2023
(monthly figures)

Legend: DWDM, Microwave, PON/AON/Ethernet/+, SDH
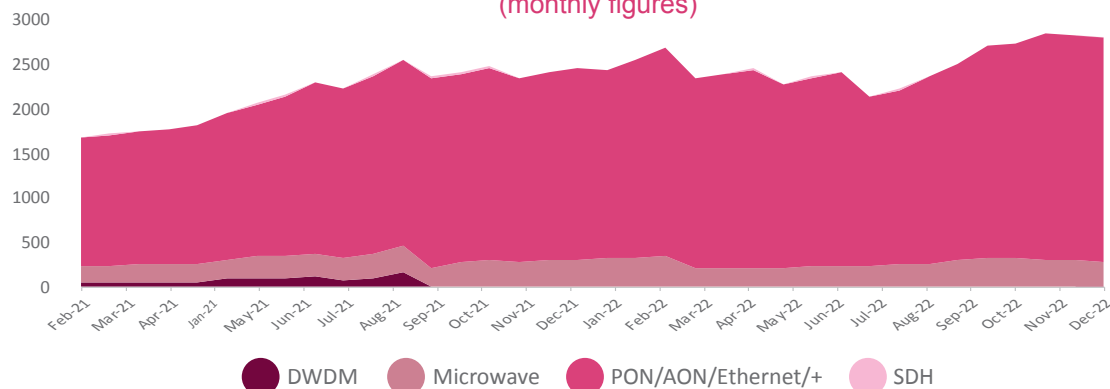
Source: SUTEL, General Directorate of Markets. Costa Rica, 2023.

Graph 141. Costa Rica: Percentage distribution of wholesale Internet access connections per type of technology (year-end) in 2021-2023
(figures in percentage terms)
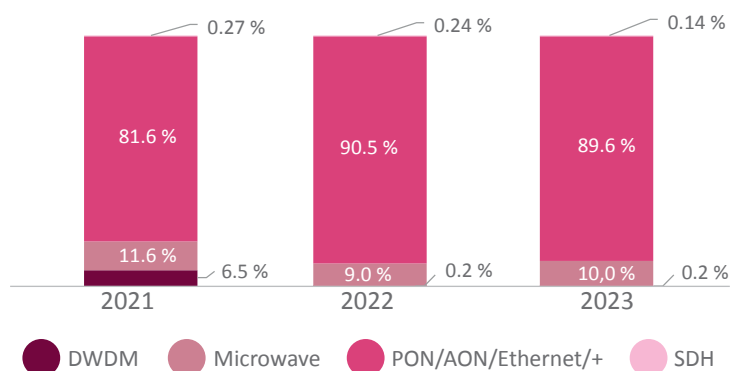
Source: SUTEL, General Directorate of Markets. Costa Rica, 2023.

Graph 142. Costa Rica: Percentage of wholesale Internet access connections per speed range (year-end) in 2021-2023
(figures in percentage terms)
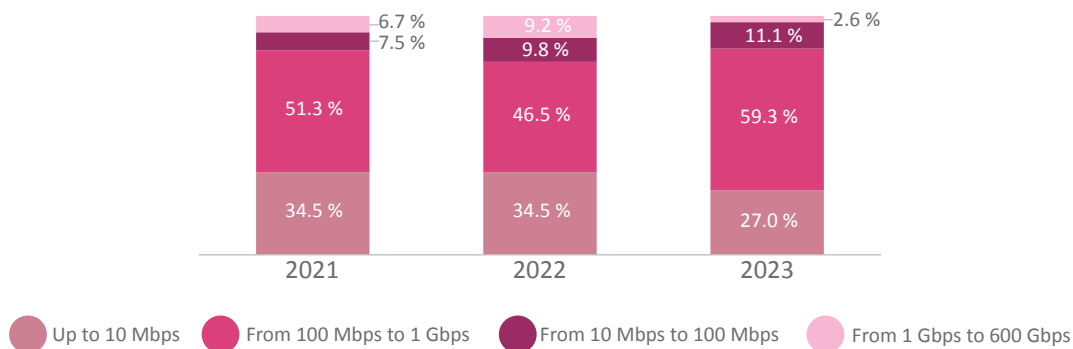
Source: SUTEL, General Directorate of Markets. Costa Rica, 2023.

Graph 143. Costa Rica: Total revenue from wholesale Internet access (year-end) in 2019-2023
(figures in millions of colones)
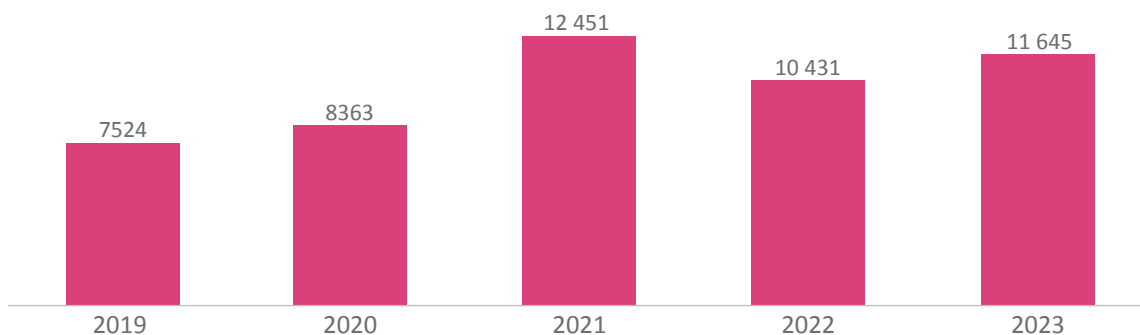
Source: SUTEL, General Directorate of Markets. Costa Rica, 2023.

Graph 144. Costa Rica: Revenue from wholesale Internet access per quarter in 2021-2023

(figures in millions of colones)

	Q1	Q2	Q3	Q4
2021	2867	3156	3261	3167
2022	2840	2398	2780	2413
2023	2828	3049	2770	2998
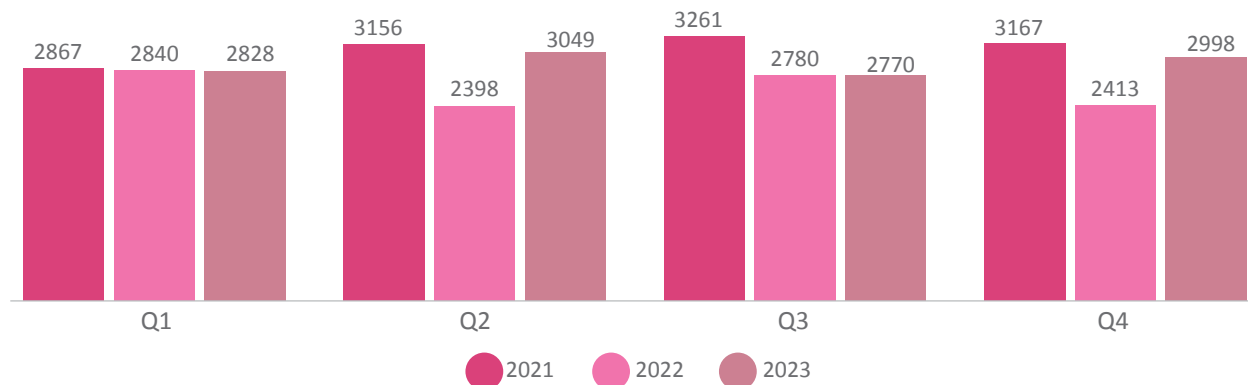
Source: SUTEL, General Directorate of Markets. Costa Rica, 2023.

Graph 145. Costa Rica: Revenue from wholesale Internet access per type of technology by month in 2021-2023

(figures in colones)

DWDM   SDH/Microwave   PON/AON/Ethernet/+
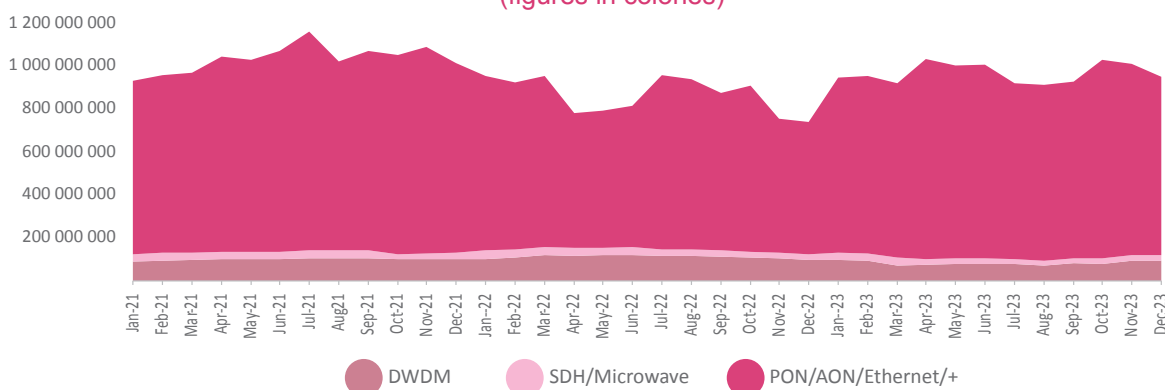
Source: SUTEL, General Directorate of Markets. Costa Rica, 2023.

Graph 146. Costa Rica: Percentage distribution of revenue from wholesale Internet access per type of technology (year-end) in 2021-2023

(figures in percentage terms)

	2021	2022	2023
PON/AON/Ethernet/+	87.0 %	83.1 %	88.5 %
SDH/Microwave	3.2 %	3.8 %	2.8 %
DWDM	9.8 %	13.0 %	8.7 %

DWDM   SDH/Microwave   PON/AON/Ethernet/+
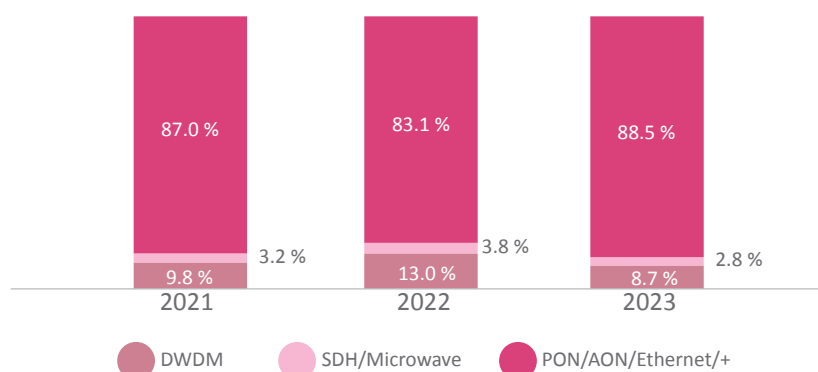
Source: SUTEL, General Directorate of Markets. Costa Rica, 2023.

Graph 147. Costa Rica: Total yearly revenue from wholesale Internet access per speed range in 2021-2023

(figures in percentage terms)

	2021	2022	2023
From 1 Gbps to 600 Gbps	15.6 %	31.1 %	21.1 %
From 10 Mbps to 100 Mbps	40 %	47.5 %	37.2 %
From 100 Mbps to 1 Gbps	28.5 %	17.7 %	33.6 %
Up to 10 Mbps	15.9 %	3.7 %	8.1 %

● Up to 10 Mbps ● From 100 Mbps to 1 Gbps ● From 10 Mbps to 100 Mbps ● From 1 Gbps to 600 Gbps
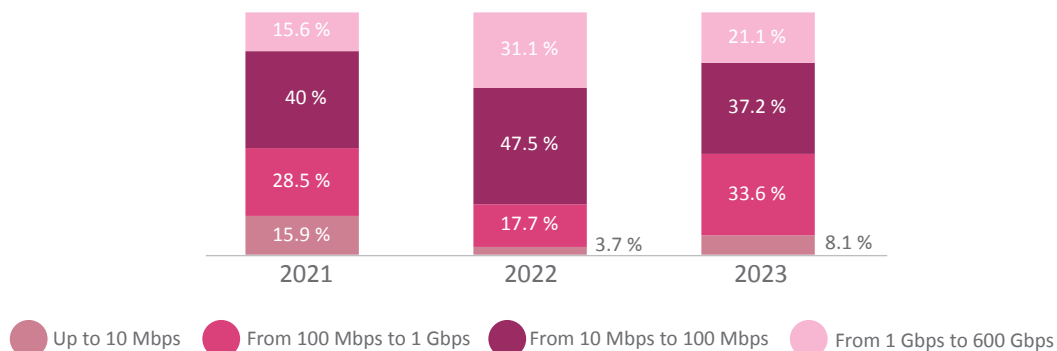
Source: SUTEL, General Directorate of Markets. Costa Rica, 2023.

Map 1. Costa Rica: Average download speed of fixed Internet subscriptions per district as of February 2023

(figures in Mbps)
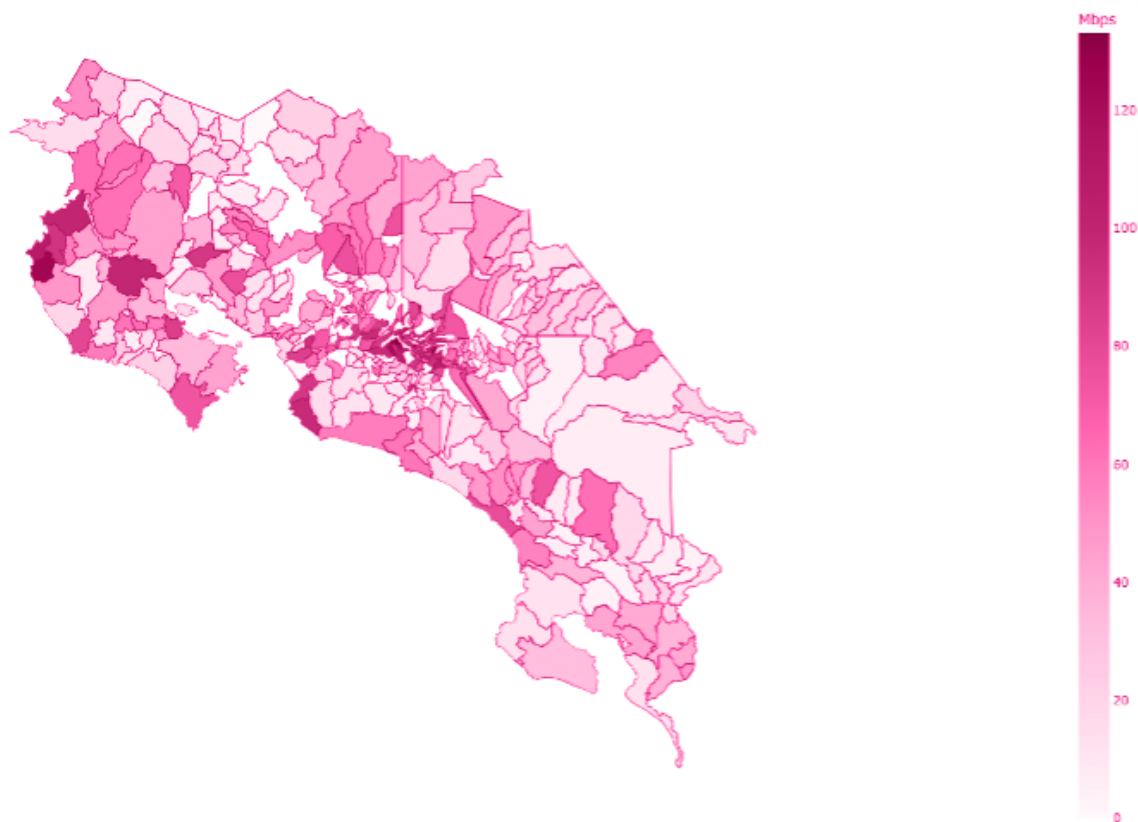
Source: SUTEL, General Directorate of Markets. Costa Rica, 2023.

DEDICATED LINES

A dedicated line, also known as a leased line, is a point-to-point data link (in a business or office) or a point-to-multipoint data link (for certain business-related services and wholesale connections) between two locations.

Dedicated lines provide a guaranteed bandwidth and ensure that clients receive a consistent and stable level of quality. This means that the bandwidth is reserved for the exclusive use of the client and is not shared with other users.

Dedicated lines are mainly used to transmit data securely and privately through logical or physical media. Additionally, clients are able to select custom packages that are tailor-made to satisfy specific needs (i.e.: latency, bandwidth, maintenance, support, and availability, among others).

Operators are the largest providers of dedicated line services. A total of 33 operators reported dedicated line services by year-end 2023, totaling 19 453 connections, of which Kölbi, Ufinet, Millicom, Telecable, RACSA and Liberty Servicios Fijos accounted for 90 % of the total.

Similarly, during that same period, revenue from dedicated line services totaled 40 531 million colones, of which Kölbi, Ufinet, Millicom, AT&T, RACSA and Liberty Servicios Fijos accounted for 90 % of the total..

Connections

Graph 148 shows the number of companies actively engaged in the dedicated line market from 2019 to 2023. By year-end 2023, this number had risen to a total of 33 network operators. Graph 149 shows the total number of connections leased from 2019 to 2023. It showed that, in 2023, the number of dedicated lines totaled 19 453 connections,

representing an annual average growth rate of -4 % and an increase of 12.5 % in relation to the previous year.

Graph 150 shows the quarter-over-quarter growth from 2022 to 2023, revealing a variance of -0.7 % in Q1, a variance of 2.7 % in Q2, a variance of 10.3 % in Q3, and a variance of 12.5 % in Q4.

Subsequently, Graph 151 shows the market share of retail and wholesale services per quarter in 2023, revealing that, in Q4, retail services accounted for 68.5 % of the market, while wholesale services accounted for the remaining 31.5 % of the market.

Graph 152 shows the number of connections per territory (i.e.: domestic or international), revealing that, by year-end 2023, 2.2 % of all connections are outside of the country, while 97.8 % of connections are within the national territory.

In addition, Graph 153 shows the number of connections per territory (i.e.: domestic or international) in the wholesale market, revealing that 96 % of all connections are within the national territory, while 4 % of connections are outside of the country. Likewise, Graph 154 shows the number of connections per territory in the retail market, where 99 % of connections are within the national territory.

Graph 155 shows the market share of wholesale dedicated line connections per Internet speed range in 2023. It revealed that the number of connections showed an upward trend in each of the seven established speed ranges, with the 2 Mbps to 10 Mbps speed range reporting the largest number of connections, accounting for 36 % of all connections by year-end 2023.

In addition, Graph 156 shows the month-to-month market share of retail dedicated line connections per Internet speed range in 2023. It showed that the speed ranges under 2 Mbps reported the largest number of connections in 2023, accounting for 38 % of the total.

Following the above analysis, Graph 157 shows the market share of dedicated line services per type of technology in both markets (i.e.: retail and wholesale). It showed that, by year-end 2023, virtual private network [VPN] connections accounted for 34 % of the market, digital link connections accounted for 27 % of the market, and port/other/analog/frame connections accounted for 38 % of the market. The latter-most category reported the highest year-over-year growth, rising from 4009 connections in 2022 to 7426 connections in 2023, which represents an increase of 85.2 % in relation to 2022.

Graph 158 shows the month-to-month market share of dedicated line services per type of technology from 2022 to 2023. It revealed that VPN connections reported an annual average growth rate of -2 % from January 2022 to December 2023, while digital link connections and port/other/analog/frame connections showed an increase of 1.3 % and 5.1 %, respectively.

Lastly, Graph 159 shows the quarter-to-quarter market share per type of technology in 2023, revealing that, in Q4, port/other/analog/frame connections accounted for 38.2 % of the market, VPN connections accounted for 34.5 % of the market, and digital link connections accounted for 27.3 % of the market.

DEDICATED LINES

Revenue

Graph 160 shows the total yearly revenue from 2019 to 2023,

It revealed that, in 2023, revenue totaled 40 531 million colones, which represents a decrease of 11.7 % in relation to 2022.

The revenue from dedicated line services showed a downward trend in the period under analysis, with an annual average growth rate of -4.9 %.

Graph 161 shows the revenue earned per quarter from 2022 to 2023, revealing that the quarter-over-quarter variance showed a downward trend in relation to the previous year. Namely, it showed a quarter-over-quarter [Q/Q] variance of -4.5 % in Q1, a Q/Q variance of -20.2 % in Q2, a Q/Q variance of -12 % in Q3, and a Q/Q variance of -9.5 % in Q4.

In addition, Graph 162 shows the quarter-to-quarter revenue from dedicated line services per type of market (i.e.: retail and wholesale) in 2023, revealing that, in Q4, the retail market accounted for 69.2 % of all revenue, while the wholesale market accounted for the remaining 30.8 % of the revenue.

Following the above analysis, Graph 163 shows the share of revenue from dedicated line services per territory (i.e.: domestic or international), revealing that, in Q4, 88.4 % of the revenue came from domestic clients, whereas 11.6 % of the revenue came from international clients. In other words, for every 100 colones of revenue earned from dedicated line services, 90 colones are from domestic clients, while 10 colones are from international clients. These results are consistent with the behavior observed in 2022.

Graph 164 shows the percentage share of revenue earned in the wholesale market per territory, revealing that users in the domestic market accounted for 74.5 %, while international users accounted for the remaining 25.5 % of the revenue. Graph 165 shows the percentage share of revenue earned in the retail market per territory, revealing that domestic clients accounted for 93.4 % of the revenue, while international clients accounted for the remaining 6.6 %.

Following the above analysis, a year-over-year comparison revealed that, in 2023, revenue showed a downward trend in the retail and wholesale markets. In the wholesale market, for instance, revenue from domestic clients fell from 11 157 million colones in 2022 to 10 253 million colones in 2023, which represents a decrease of 8 % in relation to 2022. Likewise, in the retail market, revenue from domestic clients fell from 28 373 million colones in 2022 to 24 997 million colones in 2023, which represents a decrease of 12 % in relation to 2022. Despite the fluctuation in total re-

venue earned, the ratio of revenue from domestic retail services to revenue from domestic wholesale services remained largely unchanged, showing that the proportion/size of the latter is greater than the former, albeit with a slight decrease. The ratio of revenue from domestic retail services to revenue from domestic wholesale services, in 2023, is equal to 2.44:1 (compared to 2.54:1 in 2022).

Graph 166 shows the share of month-to-month revenue from wholesale dedicated line services per Internet speed range in 2023. It revealed that this service showed a downward trend in each of the seven established speed ranges, with the speed range of over 600 Mbps reporting the highest share of revenue earned, accounting for 46.2 % of the total by year-end 2023.

Similarly, Graph 167 shows the share of month-to-month revenue from retail dedicated line services per Internet speed range in 2023. In this case in particular, the speed range of under 2 Mbps reported the highest share of revenue earned, accounting for 40.3 % of the total in 2023.

An analysis was then conducted in regard to the revenue earned per type of technology, irrespective of market, to compare the total number of connections. Graph 168 shows the year-to-year variation rate per type of technology from 2022 to 2023, revealing that VPN and digital links show a downward trend, while Ports/Others/Analog/Frames shows an upward trend, with average annual growth rates of -15.5 %, -18.6 %, and 0.73 %, respectively.

Graph 169 shows the month-to-month revenue from dedicated line services per type of technology from 2022 to 2023, revealing that all three technologies showed a downward trend, with VPN, digital links, and ports/others/analog/frames showing an annual average growth rate of -0.2 %, -0.1 %, and -0.2 %, respectively.

Lastly, Graph 170 shows the quarter-over-quarter share of revenue earned per type of technology in 2023, revealing that, in Q4, VPN accounted for 48.6 % of the total, ports/others/analog/frames accounted for 28.3 % of the total, and digital links accounted for 23.1 % of the total..

Graph 148. Costa Rica: Number of dedicated line connections and active companies in 2019-2023
(yearly figures)
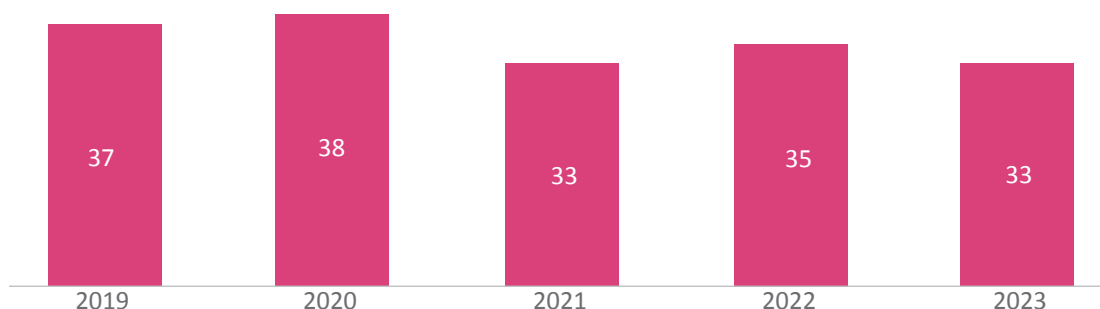
Source: SUTEL, General Directorate of Markets. Costa Rica, 2023.

Graph 149. Costa Rica: Number of dedicated line connections in 2019-2023
(yearly figures)

Year	Connections
2019	22 921
2020	23 682
2021	18 025
2022	17 294
2023	19 453
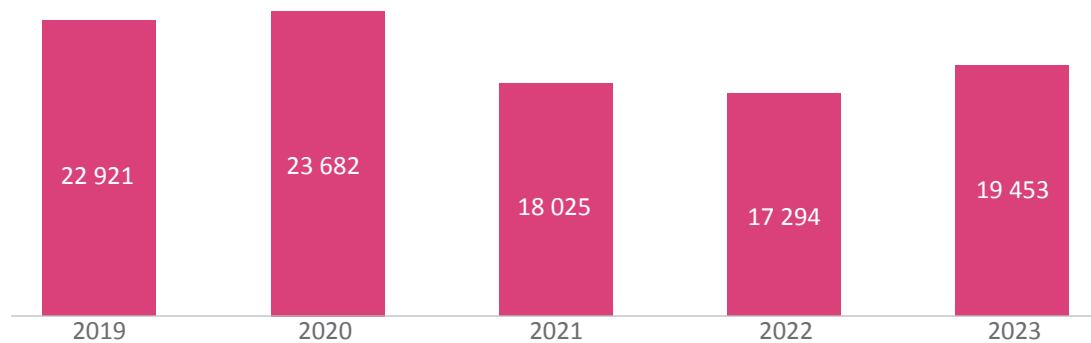
Source: SUTEL, General Directorate of Markets. Costa Rica, 2023.

Graph 150. Costa Rica: Number of dedicated line connections in 2022-2023
(Quarterly figures)

Quarter	2022	2023
Q1	17 764	17 643
Q2	17 085	17 539
Q3	17 974	19 824
Q4	17 294	19 453

● 2022 ● 2023
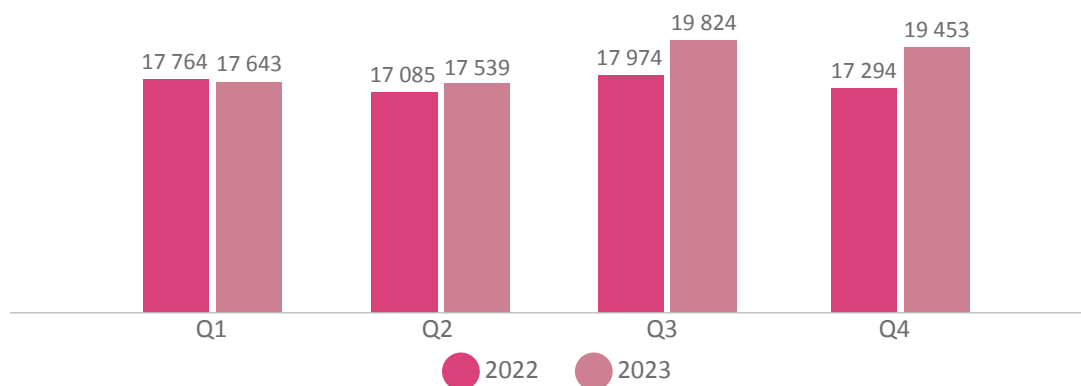
Source: SUTEL, General Directorate of Markets. Costa Rica, 2023.

Graph 151. Costa Rica: Number of dedicated line connections per market in 2023
(quarterly figures in percentage terms)

Quarter	Retail market	Wholesale market
Q1	77,8 %	22,2 %
Q2	77,6 %	22,4 %
Q3	69,9 %	30,1 %
Q4	68,5 %	31,5 %

● Wholesale market ● Retail market
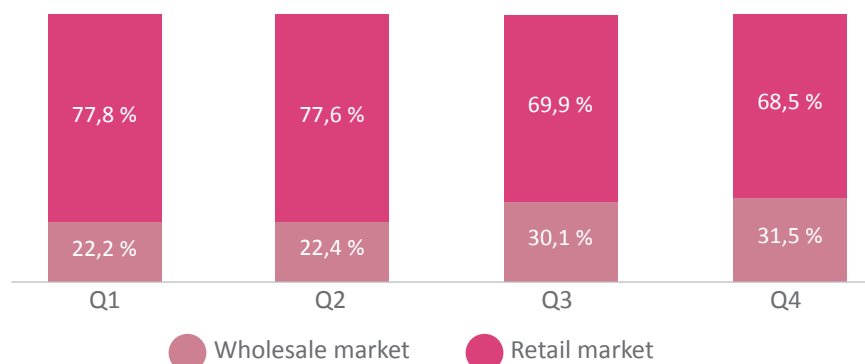
Source: SUTEL, General Directorate of Markets. Costa Rica, 2023.

Graph 152. Costa Rica: Number of dedicated line connections per territory in 2023

(quarterly figures in percentage terms)

	Q1	Q2	Q3	Q4
Domestic	97.8 %	97.9 %	98.0 %	97.8 %
International	2.2 %	2.1 %	2.0 %	2.2 %

● International   ● Domestic
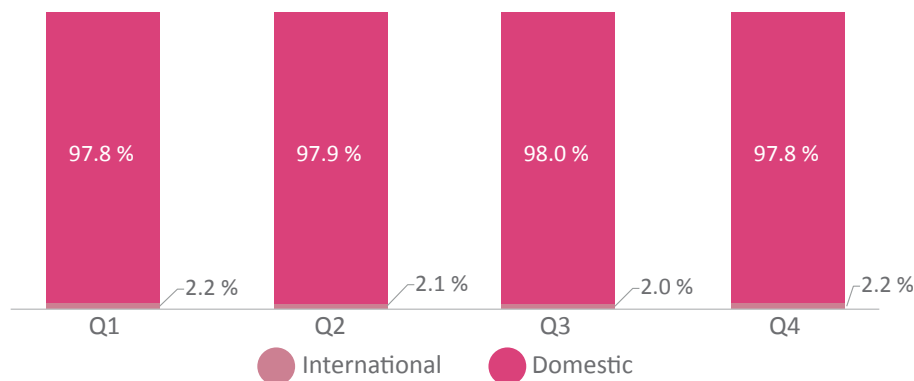
Source: SUTEL, General Directorate of Markets. Costa Rica, 2023.

Graph 153. Costa Rica: Number of dedicated line connections in the wholesale market per territory in 2023

(year-end figures in percentage terms)

4 %

96 %

Domestic
International
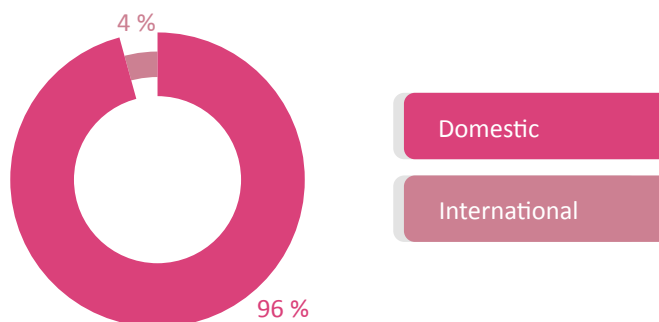
Source: SUTEL, General Directorate of Markets. Costa Rica, 2023.

Graph 154. Costa Rica: Number of dedicated line connections in the retail market per territory in 2023

(Year-end figures in percentage terms)

1 %

99 %

Domestic
International
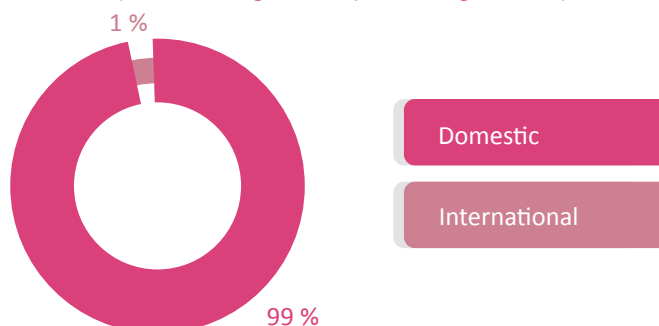
Source: SUTEL, General Directorate of Markets. Costa Rica, 2023.

Graph 155. Costa Rica: Number of dedicated line connections in the wholesale market per Internet speed in 2023
(Monthly figures)

Legend:
- V <= 2 Mbps
- 2 Mbps < V <= 10 Mbps
- 10 Mbps < V <= 30 Mbps
- 30 Mbps < V <= 100 Mbps
- 100 Mbps < V <= 250 Mbps
- 250 Mbps < V <= 600 Mbps
- V < 600 Mbps
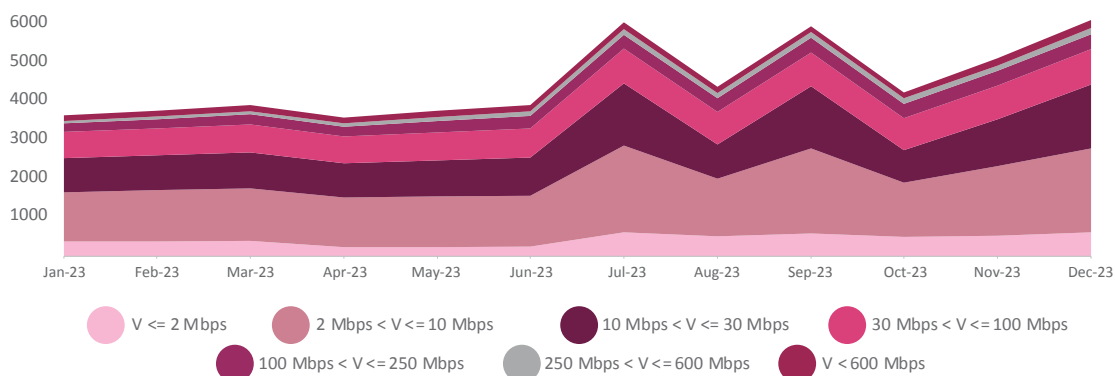
Source: SUTEL, General Directorate of Markets. Costa Rica, 2023.

Graph 156. Costa Rica: Number of dedicated line connections in the retail market per Internet speed in 2023
(Monthly figures)

Legend:
- V <= 2 Mbps
- 2 Mbps < V <= 10 Mbps
- 10 Mbps < V <= 30 Mbps
- 30 Mbps < V <= 100 Mbps
- 100 Mbps < V <= 250 Mbps
- 250 Mbps < V <= 600 Mbps
- V < 600 Mbps
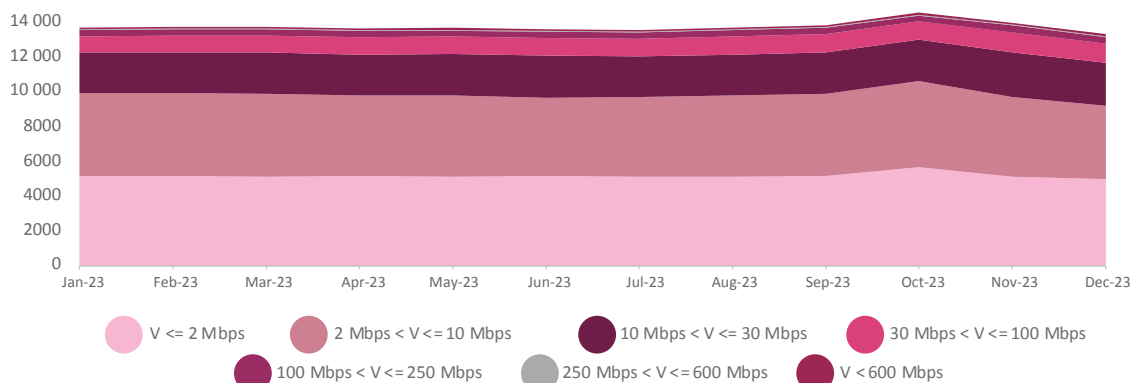
Source: SUTEL, General Directorate of Markets. Costa Rica, 2023.

Graph 157. Costa Rica: Number of total dedicated line connections per type of technology in 2022-2023
(yearly figures)

	VPN	Digital Links	Ports/Others/Analog/Frames
2022	8265	5020	4009
2023	6709	5318	7426
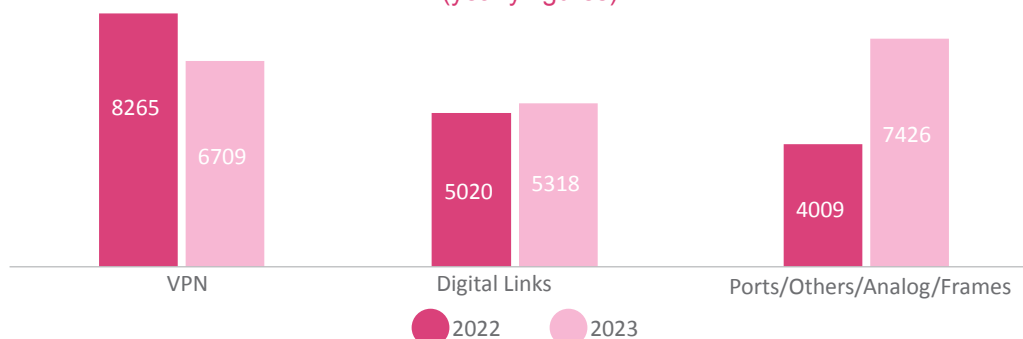
Source: SUTEL, General Directorate of Markets. Costa Rica, 2023.

Graph 158. Costa Rica: Number of total dedicated line connections per type of technology in 2023
(Monthly figures)

Legend: VPN — Enlaces Digitales — Puertos/Otros/Analógicos/Tramas
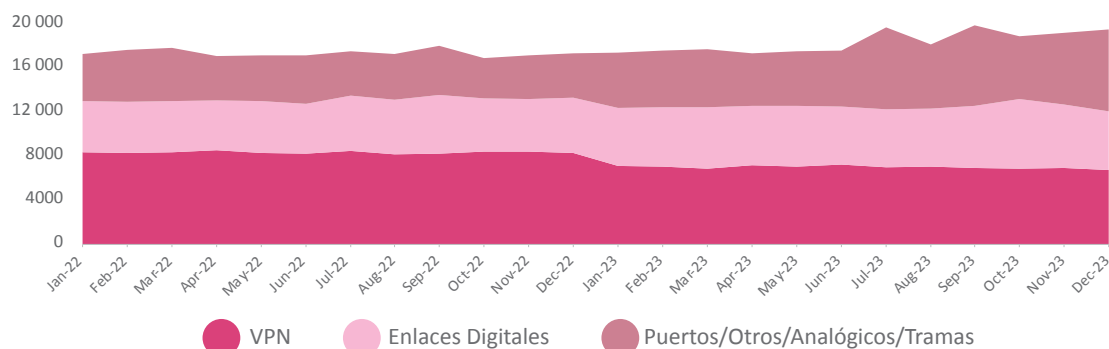
Source: SUTEL, General Directorate of Markets. Costa Rica, 2023.

Graph 159. Costa Rica: Number of total dedicated line connections per type of technology in 2023
(Quarterly figures)

	Q1	Q2	Q3	Q4
Ports/Others/Analog/Frames	29.8 %	28.9 %	37.0 %	38.2 %
Digital Links	31.3 %	29.9 %	28.1 %	27.3 %
VPN	38.8 %	41.2 %	34.9 %	34.5 %

Legend: VPN — Digital Links — Ports/Others/Analog/Frames
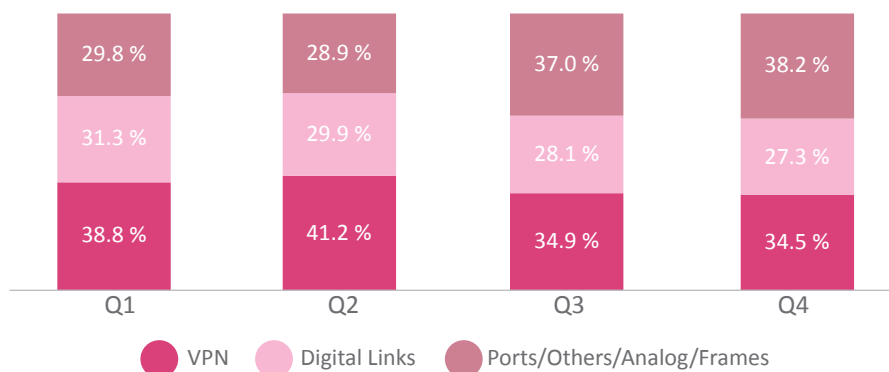
Source: SUTEL, General Directorate of Markets. Costa Rica, 2023.

Graph 160. Costa Rica: Revenue from dedicated lines in 2019-2023
(yearly figures in millions of colones)

2019	2020	2021	2022	2023
49 492	49 326	53 886	45 915	40 531
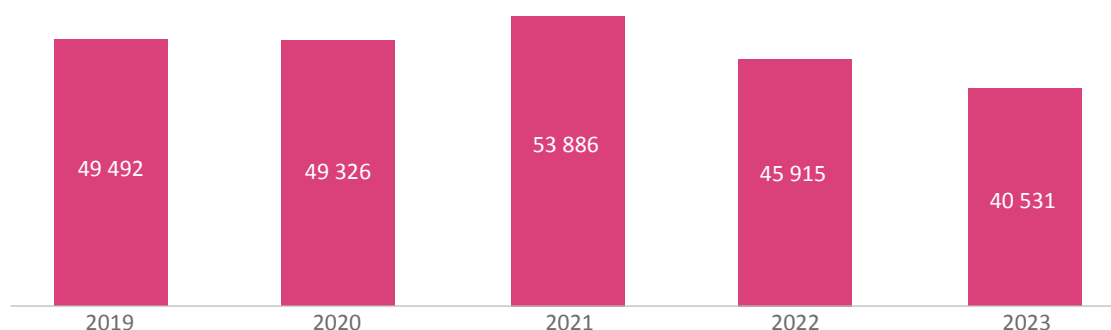
Source: SUTEL, General Directorate of Markets. Costa Rica, 2023.

Graph 161. Costa Rica: Revenue from dedicated lines in 2022-2023
(quarterly figures in millions of colones)

	Q1	Q2	Q3	Q4
2022	11 179	12 205	10 999	11 531
2023	10 671	9743	9677	10 439

● 2022 ● 2023
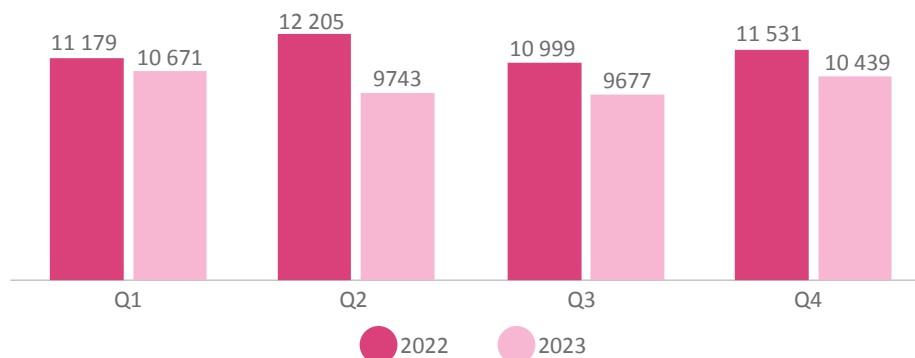
Source: SUTEL, General Directorate of Markets. Costa Rica, 2023.

Graph 162. Costa Rica: Revenue from dedicated lines per market in 2023
(quarterly figures in percentage terms)

	Q1	Q2	Q3	Q4
Retail market	62.5 %	65.3 %	67.3 %	69.2 %
Wholesale market	37.5 %	34.7 %	32.7 %	30.8 %

● Wholesale market ● Retail market
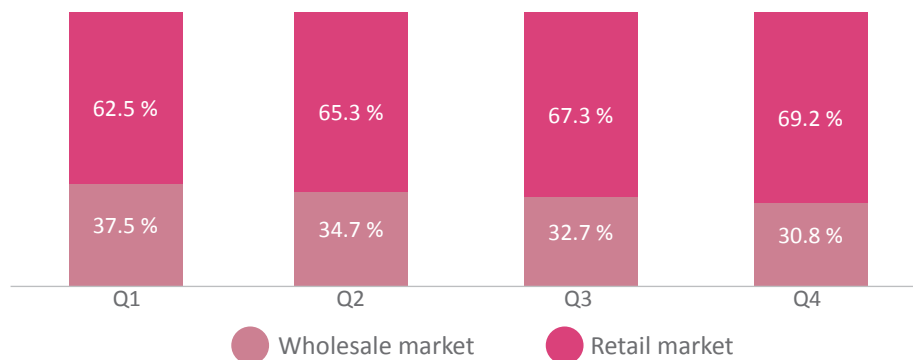
Source: SUTEL, General Directorate of Markets. Costa Rica, 2023.

Graph 163. Costa Rica: Revenue from dedicated lines per territory in 2023
(quarterly figures in percentage terms)

	Q1	Q2	Q3	Q4
Domestic	86.3 %	86.1 %	87.0 %	88.4 %
International	13.7 %	13.9 %	13.0 %	11.6 %

● International ● Domestic
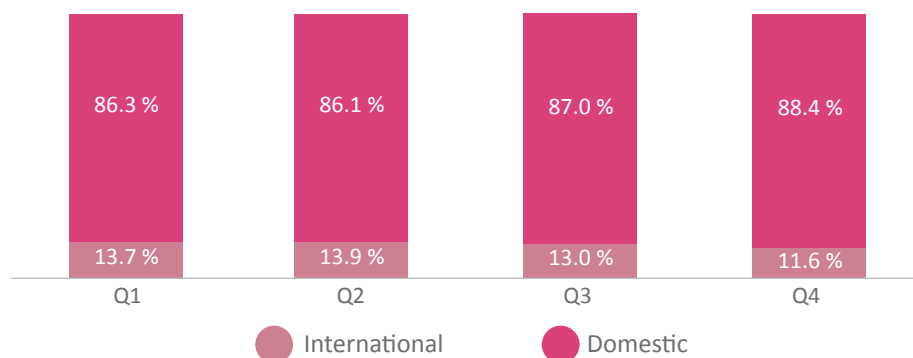
Source: SUTEL, General Directorate of Markets. Costa Rica, 2023.

Graph 164. Costa Rica: Revenue from dedicated lines in the wholesale market per territory in 2023

(year-end figures in percentage terms)

25.5 %

74.5 %

Domestic

International
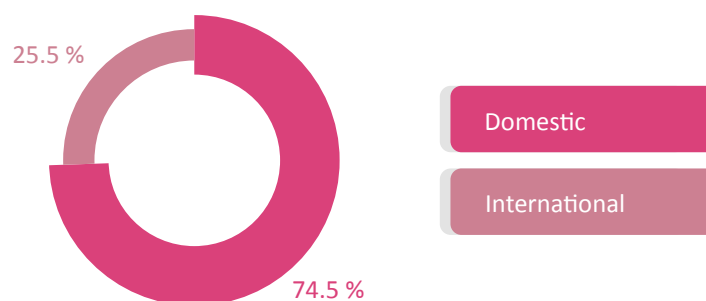
Source: SUTEL, General Directorate of Markets. Costa Rica, 2023.

Graph 165. Costa Rica: Revenue from dedicated lines in the retail market per territory in 2023

(year-end figures in percentage terms)

6.6 %

93,4 %

Domestic

International
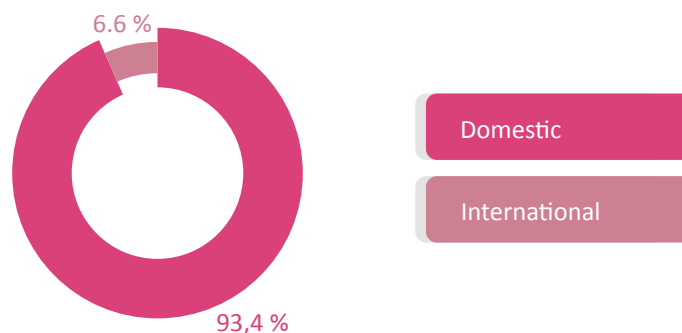
Source: SUTEL, General Directorate of Markets. Costa Rica, 2023.

Graph 166. Costa Rica: Revenue from dedicated lines in the wholesale market per Internet speed in 2023

(monthly figures in millions of colones)

- V <= 2 Mbps
- 2 Mbps < V <= 10 Mbps
- 10 Mbps < V <= 30 Mbps
- 30 Mbps < V <= 100 Mbps
- 100 Mbps < V <= 250 Mbps
- 250 Mbps < V <= 600 Mbps
- V < 600 Mbps
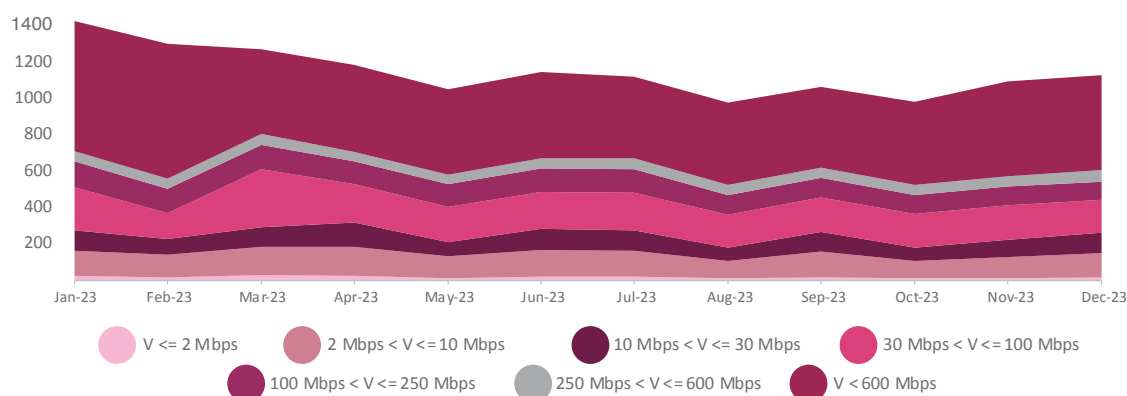
Source: SUTEL, General Directorate of Markets. Costa Rica, 2023.

Graph 167. Costa Rica: Revenue from dedicated lines in the retail market per Internet speed in 2023
(monthly figures in millions of colones)

Legend:
- V <= 2 Mbps
- 2 Mbps < V <= 10 Mbps
- 10 Mbps < V <= 30 Mbps
- 30 Mbps < V <= 100 Mbps
- 100 Mbps < V <= 250 Mbps
- 250 Mbps < V <= 600 Mbps
- V < 600 Mbps
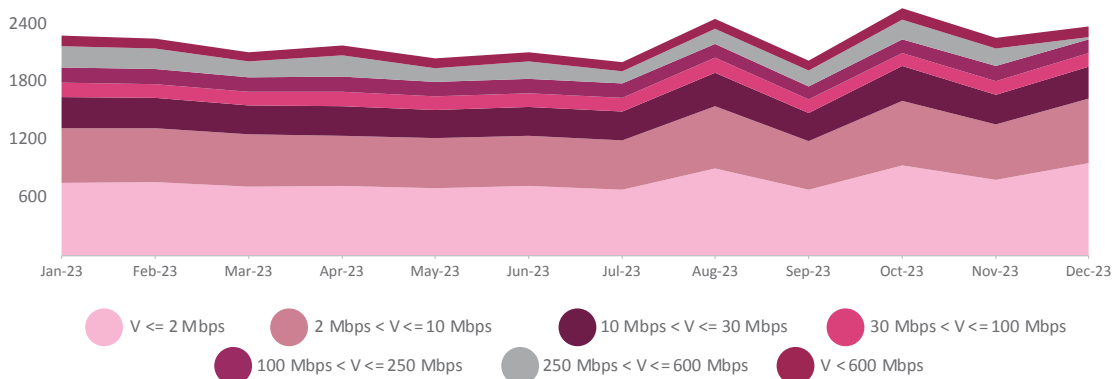
Source: SUTEL, General Directorate of Markets. Costa Rica, 2023.

Graph 168. Costa Rica: Total revenue from dedicated lines per type of technology in 2022-2023
(yearly figures in millions of colones)

	VPN	Enlaces Digitales	Puertos/Otros/Analógicos/Tramas
2022	20 951	12 001	12 962
2023	17 710	9764	13 057
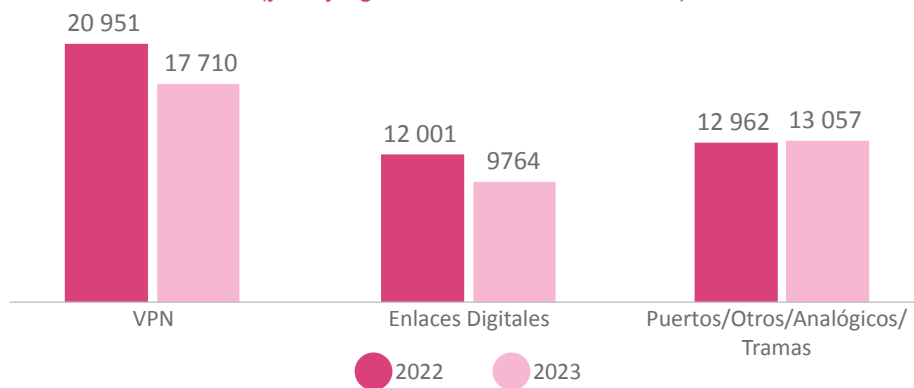
Source: SUTEL, General Directorate of Markets. Costa Rica, 2023.

Graph 169. Costa Rica: Total revenue from dedicated lines per type of technology in 2022-2023
(monthly figures in millions of colones)

Legend:
- VPN
- Digital Links
- Ports/Others/Analog/Frames
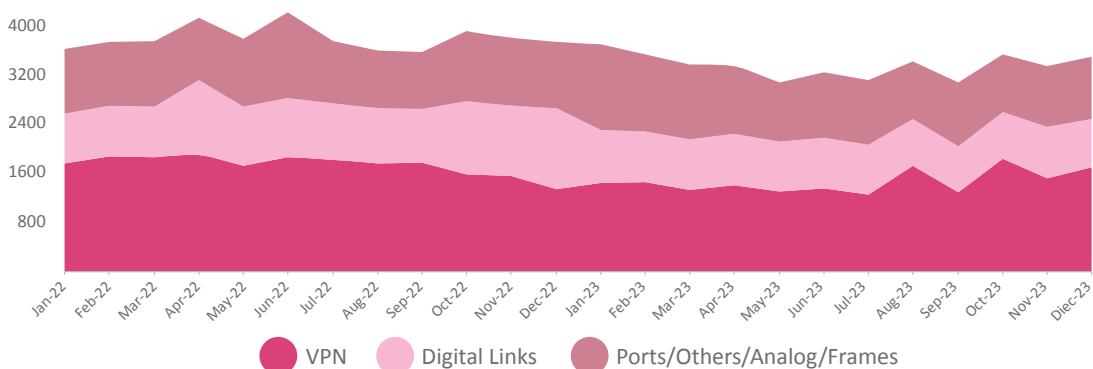
Source: SUTEL, General Directorate of Markets. Costa Rica, 2023.

Graph 170. Costa Rica: Total revenue from dedicated lines per type of technology in 2023

(quarterly figures in percentage terms)

	I Q1T	Q2	Q3	Q4
Ports/Others/Analog/Frames	36.4 %	32.5 %	31.6 %	28.3 %
Digital Links	23.7 %	25.5 %	24.1 %	23.1 %
VPN	39.9 %	42.0 %	44.3 %	48.6 %

● VPN   ● Digital Links   ● Ports/Others/Analog/Frames
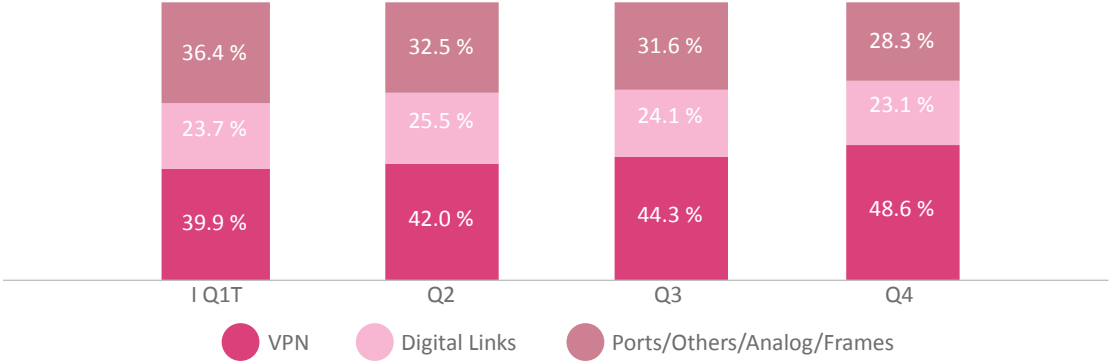
Source: SUTEL, General Directorate of Markets. Costa Rica, 2023.

❭PAY
TELEVISION

2023

As of December 2023, the commercial offers of Pay TV services continue to undergo substantial changes, in spite of the fact that, for the second consecutive year, the number of network operators and service providers remains firm at 27[46]. These offers come in three forms, namely: cable TV subscriptions (19 service providers), wireless/satellite TV subscriptions (3 service providers) and, lastly, Internet Protocol Television [IPTV] subscriptions (11 companies). Of these 11 companies, two are service providers that were previously engaged in the provision of television services, but decided to diversify their product portfolio to include this technology in 2023.

SUBSCRIPTIONS

As shown in Graph 171, a total of 819 064 pay TV subscriptions were reported in 2023, which represents a decrease of 2 % (12 515 subscriptions) in relation to the previous year.

The year-over-year growth of the total number of subscriptions per quarter from 2022 to 2023 is statistically equivalent to the year-over-year growth reported in the last five years. In other words, the year-over-year growth remained relatively consistent, showing a downward trend of less than 1 % in the period under analysis (see Graph 172).

The market share of pay TV services per type of technology in 2023 is largely unchanged in relation to 2022, with coaxial cable accounting for 52.1 % of the market, followed by IPTV with 29.3 %, and satellite television with the remaining 18.7 % (see Graph 173).

The results of this analysis, in which the number of subscriptions from 2019 to 2021 is broken down per type of technology, confirms the shift in trends observed over the last five years, seeing as the market share of coaxial cable and wireless TV subscriptions shows a downward trend, while the market share of IPTV subscriptions continues to rise (see Graph 174).

In accordance with the above, as noted over the last five years in previous reports,

> IPTV subscriptions have shown a constant growth in terms of both the number of subscriptions and the number of network operators that offer this type of technology.

As shown in Table 15, the number of subscriptions in 2023 increased by 340 % (reaching 185 188 subscriptions) in relation to 2019, and increased by 24 % (46 959 subscriptions) in relation to 2022.

By adding the total number of fixed Internet and IPTV subscriptions, and taking into account that more than 80 % of pay TV service operators also provide other telecommunication services, allowing them to offer pay TV services bundled with other services, such as fixed Internet and telephony, it is observed that there is an increase in the number of new subscribers to, and in the revenue earned from, this technology (see Graph 175).

The pay TV penetration rate dropped to 15.6 % of the total population in 2023. An analysis of the ratio of total subscriptions to the number of households showed that, in 2023, there are 46 pay TV subscriptions for every one-hundred households (see Graphs 176 and 177).

The Herfindahl-Hirschman Index [HHI][47] of the pay TV market in 2023 decreased by 29 points in relation to the previous year, reaching a total value of 1791 points, which suggests that there are no relevant structural changes to the degree of concentration in the market. In addition, a value below 3,000 points and above 1500 points suggests that the pay TV market is not considered to be a concentrated market[48] (see Graph 178).

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[46] Given that a single telecom service provider can offer multiple forms of pay TV services, this number is equal to 27.
[47] See the definition provided in the "Methodology" section of this report.
[48] Resolution RCS-082-2015 states that a market with an HHI of 3000 or greater is highly concentrated.

REVENUE

> Pay TV subscriptions reported 166 879 million colones in revenue in 2023,

which represents an increase of 6112 million colones in revenue and a year-over-year growth of 1 % in relation to 2019. The revenue from pay TV subscriptions showed a year-over-year growth of 3 % from 2022 to 2023, which represents an increase of 4509 million colones in revenue (see Graph 179).

In 2023, the average quarterly revenue totaled 41 720 million colones, which represented an average quarter-over-quarter growth of 1 %. In 2022, the average quarterly revenue totaled 40 593 million colones, which represented an average quarter-over-quarter growth of 0.4 % (see Graph 180).

Taking into the account the percentage share of revenue per type of technology, and the distribution of subscribers, results show that coaxial cable is the broadcasting technology with the largest market share. In 2023, however, the revenue from coaxial cable showed a downward trend, as did the number of coaxial cable subscriptions. Coaxial cable accounted for 60 % of the revenue in 2023, followed by IPTV and MMDS with 23 %, and satellite TV with the remaining 17 % (see Graph 181).

Notwithstanding the above, an analysis of the share of revenue from 2019 to 2023 confirmed that the shares of revenue from pay TV services have shown a shift in trends. Graph 182, for instance, showed that the share of revenue from coaxial cable services fell from 69 % in 2019 to 60 % in 2023. As did the revenue from satellite services, which fell from 25 % to 17 % during that same period.

Conversely, revenue from IPTV and MMDS services showed an upward trend, increasing by 6 % in 2019 and by 23 % in 2023. Moreover, considering that, for the most part, operators that provide these services also provide TV services and other telecommunica-

tion services, such as fixed Internet and telephony, the increase in new IPTV subscriptions is particularly noteworthy, as these services can be easily bundled with others.

In view of the above, Table 16 shows the total revenue earned from pay TV subscriptions broken down per type of technology. From 2019 to 2023, for instance, the revenue from coaxial cable and satellite services dropped by 9628 million colones and 12 655 million colones, respectively. Alternatively, the revenue from IPTV services increased by 28 440 million colones during that same period.

Similarly, from 2022 to 2023, the revenue from coaxial cable and IPTV services increased by 6527 million co-

lones (7 %) and 3400 million colones (10 %), respectively. Conversely, the revenue from satellite TV services decreased by 5418 million colones (16 %).

Finally, the average revenue per user [ARPU] showed an upward trend in 2023, rising to 16 979 colones (an annual increase of 707 colones per subscriber), which represents an increase of 4 % in relation to 2022. The ARPU per type of technology, however, continues to show substantial fluctuation in 2023, especially when compared to 2022. In relation to the previous year, for instance, the year-over-year average revenue per user of cable services increased by 2656 colones, while the year-over-year ARPU of satellite TV and IPTV services decreased by 373 colones and 1724 colones, respectively (see Graph 183 and Table 17).

Graph 171. Costa Rica: Total pay TV subscriptions in 2019-2023
(yearly figures)

2019	2020	2021	2022	2023
874 088	866 593	848 950	831 579	819 064
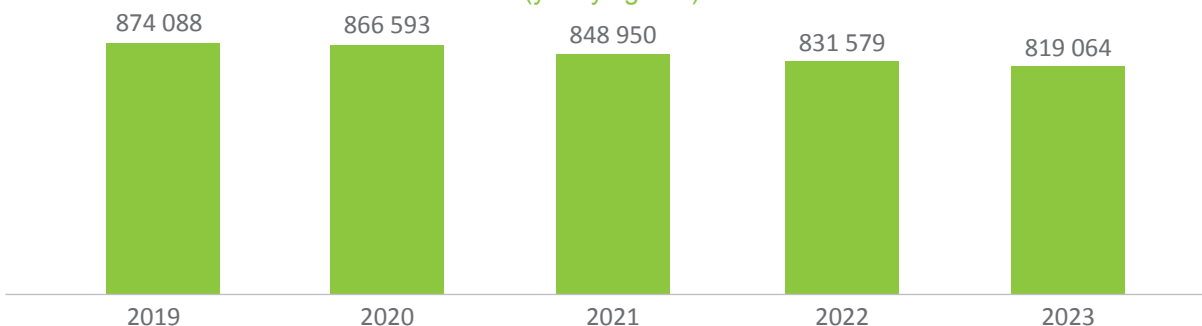
Source: SUTEL, General Directorate of Markets, Costa Rica, 2023.

Graph 172. Costa Rica: Pay TV subscriptions per quarter in 2022-2023
(yearly figures)

	Q1	Q2	Q3	Q4
2021	833 704	850 191	831 892	831 579
2022	838 772	821 976	811 184	819 064
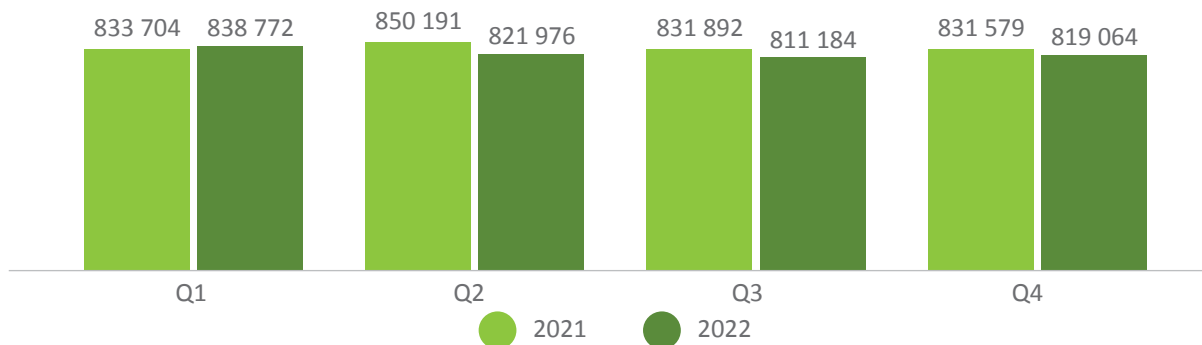
Source: SUTEL, General Directorate of Markets, Costa Rica, 2023.

Graph 173. Costa Rica: Percentage of pay TV subscriptions per type of technology in 2023

18.6 %

52.1 %

29.3 %

Cable TV

PTV & Multipoint (MMDS)

Satellite TV
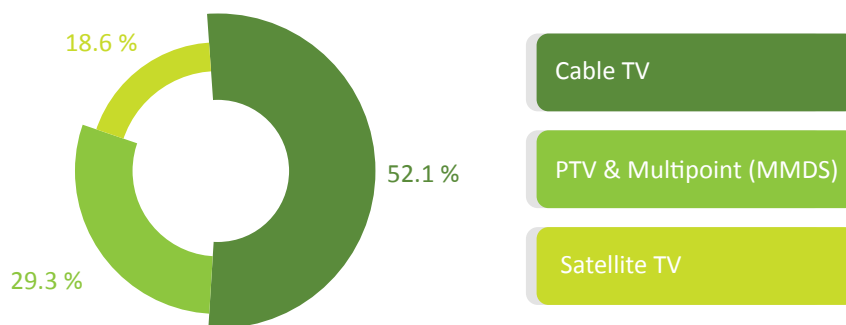
Source: SUTEL, General Directorate of Markets, Costa Rica, 2023.

Graph 174. Costa Rica: Evolution of the market share of pay TV subscriptions per type of technology in 2019-2023
(figures in percentage terms)

Year	IPTV & MMDS	Satellite television	Cable television
2019	6 %	29 %	65 %
2020	11 %	26 %	63 %
2021	17 %	23 %	60 %
2022	23 %	22 %	55 %
2023	29 %	19 %	52 %
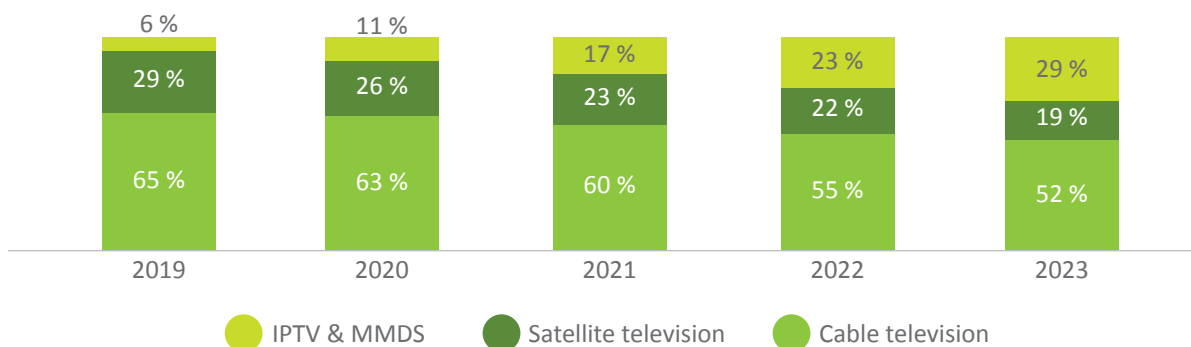
Source: SUTEL, General Directorate of Markets, Costa Rica, 2023.

Table 15. Costa Rica: Total pay TV subscriptions per type of technology in 2019-2023
(yearly figures)

Technology	2019	2020	2021	2022	2023
Cable television	570 176	548 052	506 169	461 208	426 641
Satellite television	248 269	224 465	195 722	177 666	152 759
IPTV	54 476	94 076	147 059	192 705	239 664
Terrestrial television broadcast by multipoint distribution	1167	0	0	0	0
Total	**874 088**	**866 593**	**848 950**	**831 579**	**819 064**

Source: SUTEL, General Directorate of Markets, Costa Rica, 2023.

Graph 175. Costa Rica: Total fixed Internet and IPTV subscriptions in 2019-2022
(yearly figures)

904 734   992 725   1 058 767   1 105 670   1 149 924

54 476   94 076   147 059   192 705   239 664

| 2019 | 2020 | 2021 | 2022 | 2023 |

- - - Fixed Internet   ——— IPTV
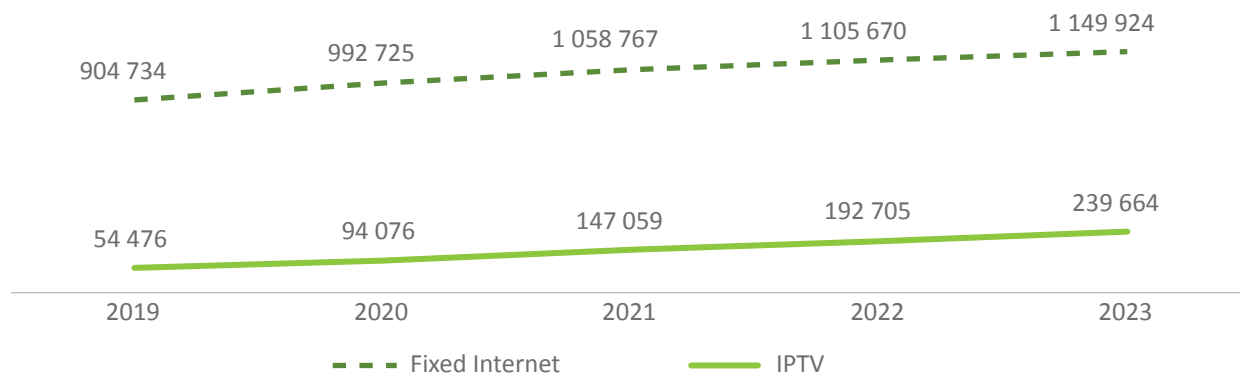
Source: SUTEL, General Directorate of Markets, Costa Rica, 2023.

Graph 176. Costa Rica: Pay TV subscriptions per every 100 inhabitants in 2019-2023
(figures in percentage terms)

17.3 %   17.0 %   16.4 %   16.0 %   15.6 %

| 2019 | 2020 | 2021 | 2022 | 2023 |
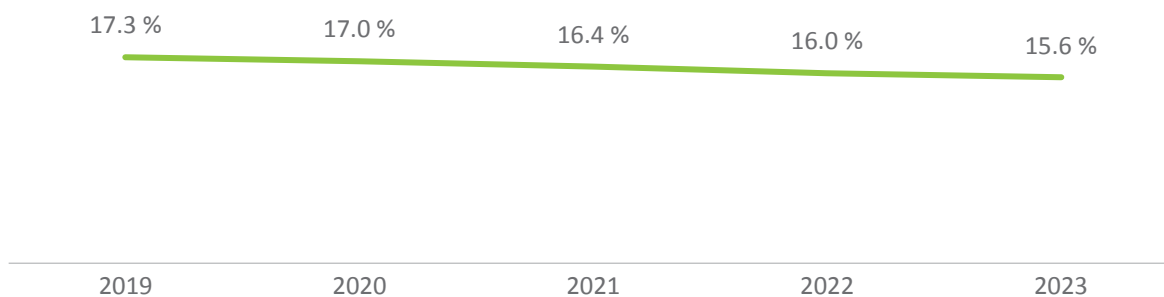
Source: SUTEL, General Directorate of Markets, Costa Rica, 2023.

Graph 177. Costa Rica: Pay TV subscriptions per every 100 households in 2019-2023
(figures in percentage terms)

55.4 %   54.8 %   51.4 %   48.3 %   46.1 %

| 2019 | 2020 | 2021 | 2022 | 2023 |
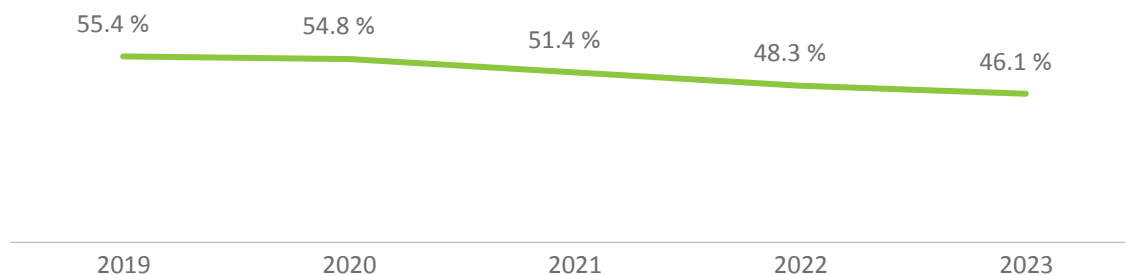
Source: SUTEL, General Directorate of Markets, Costa Rica, 2023.

Graph 178. Costa Rica: Evolution of the HHI per year. (2019-2022)

1729	1725	1819	1820	1791
2019	2020	2021	2022	2023
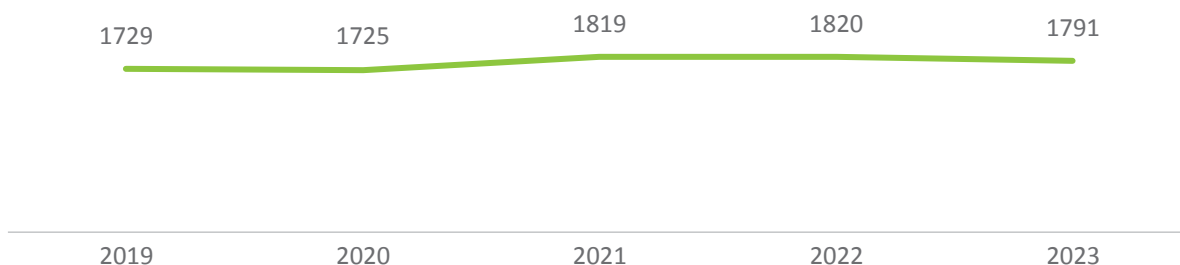
Source: SUTEL, General Directorate of Markets, Costa Rica, 2023.

Graph 179. Costa Rica: Total revenue from pay TV subscriptions in 2019-2023
(yearly figures in millions of colones)

2019	2020	2021	2022	2023
160 768	164 032	164 722	162 371	166 879
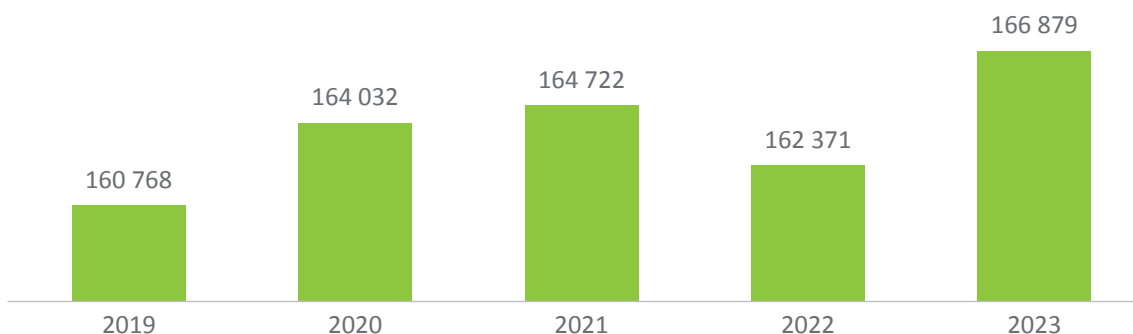
Source: SUTEL, General Directorate of Markets, Costa Rica, 2023.

Graph 180. Costa Rica: Total revenue from pay TV subscriptions per quarter in 2022-2023
(figures in millions of colones)

	Q1	Q2	Q3	Q4
2021	40 399	40 074	39 631	42 267
2022	43 250	41 564	41 061	41 004
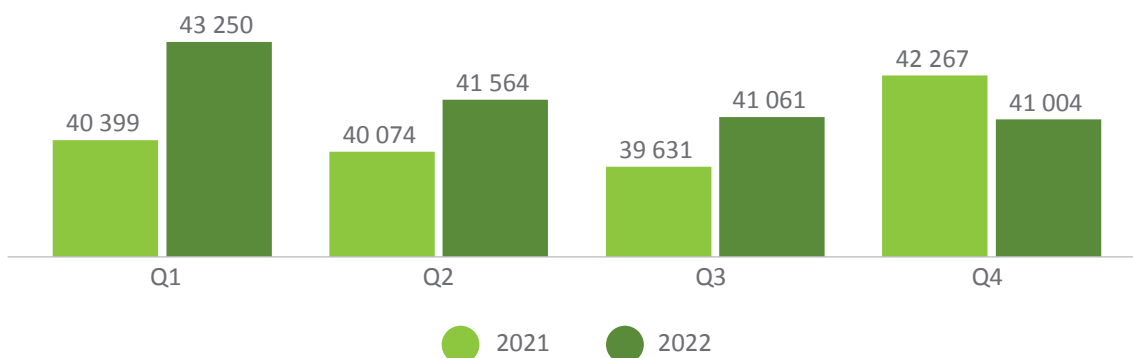
Source: SUTEL, General Directorate of Markets, Costa Rica, 2023.

Graph 181. Costa Rica: Percentage of revenue from pay TV subscriptions per type of technology in 2023

(yearly figures in millions of colones)

- Cable TV
- PTV & Multipoint (MMDS)
- Satellite TV

17 %
23 %
60 %
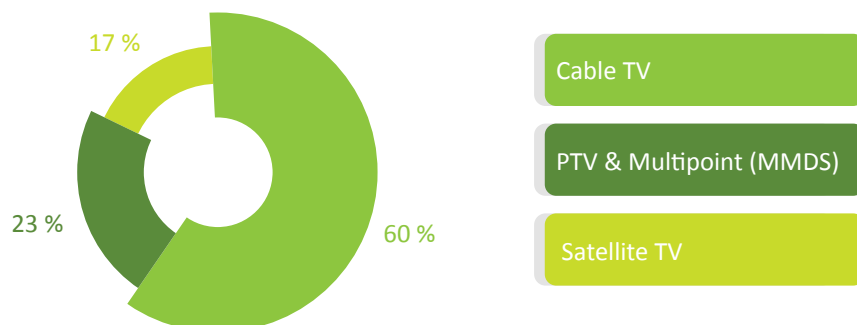
Source: SUTEL, General Directorate of Markets, Costa Rica, 2023.

Graph 182. Costa Rica: Evolution of the percentage of revenue from pay TV subscriptions per type of technology in 2019-2023

(yearly figures in percentage terms)

|	2019	2020	2021	2022	2023
IPTV & MMDS	6 %	9 %	14 %	21 %	23 %
Satellite television	25 %	25 %	24 %	21 %	17 %
Cable television	69 %	66 %	62 %	58 %	60 %
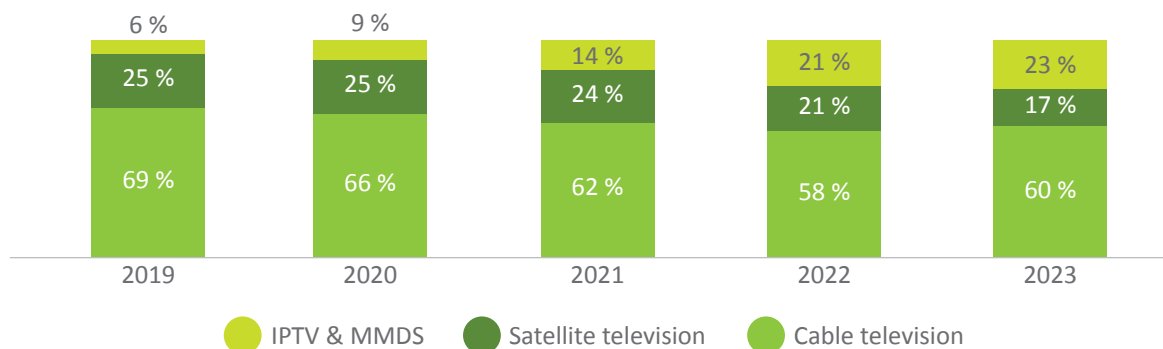
Source: SUTEL, General Directorate of Markets, Costa Rica, 2023.

Table 16. Costa Rica: Total revenue from pay TV subscriptions per type of technology by quarter in 2019-2023

(figures in millions of colones)

Technology	2019	2020	2021	2022	2023
Cable television	110 463	108 724	101 966	94 309	100 835
Satellite television	41 004	40 428	39 464	33 767	28 349
IPTV	9256	14 818	23 292	34 295	37 696
Terrestrial television broadcast by multipoint distribution	45	61	0	0	0
Total	**160 768**	**164 032**	**164 722**	**162 371**	**166 879**

Source: SUTEL, General Directorate of Markets, Costa Rica, 2023.

Graph 183. Costa Rica: Average monthly revenue per subscriber from pay TV subscriptions in 2019-2023

(yearly figures based on quarterly data in colones per subscriber)
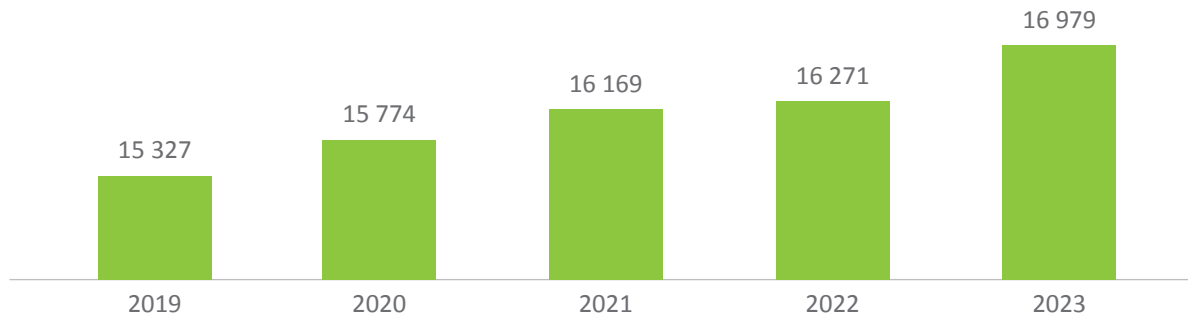
Source: SUTEL, General Directorate of Markets, Costa Rica, 2023.

Table 17. Costa Rica. Average revenue per subscriber from pay TV subscriptions in 2019-2023

(yearly figures based on quarterly data in colones per subscriber)

Technology	2019	2020	2021	2022	2023
Cable television	16 145	16 532	16 787	17 040	19 696
Satellite television	13 763	15 009	16 803	15 838	15 465
IPTV	14 159	13 126	13 199	14 831	13 107
Terrestrial television broadcast by multipoint distribution	3247	0	0	0	0
Total	**15 327**	**15 774**	**16 169**	**16 271**	**16 979**

Source: SUTEL, General Directorate of Markets, Costa Rica, 2023.

❯COMMERCIAL OFFERS AND PRICES

2023

Commercial offers continued to show consistent and sustained growth in 2023, demonstrating the adaptability of the Costa Rican telecommunications market in an increasingly demanding environment. The introduction of new offers and competitors continues to foster growth and development, leading to further diversification in business strategies by incumbent operators that seek more opportunities to attract new customers through competition, and to build stronger relationships with existing customers.

These new business strategies encourage telecom operators and service providers to diversify their marketing campaigns, thereby stimulating competitive rivalry and innovation and, ultimately, better prices and offers.

To expound on the above, this section of the report will provide an analysis of the market from a qualitative and quantitative perspective (2022 vs. 2023). Firstly, from a qualitative perspective, it is important to examine the number of offers per product, what they consist of, and how these offers have changed the mobile market in terms of postpaid and prepaid plans (voice, messages and Internet), in order to compare these findings against the bundling of fixed telecommunication services, such as fixed Internet, telephony and TV subscription services.

Secondly, from a quantitative perspective, it is important to examine the price indexes developed by SUTEL for mobile telecommunications, fixed Internet services and international call services, and how the average price of these bundled services has changed over the years.

COMMERCIAL OFFERS

Commercial offers in the mobile telecommunications market

Mobile telecommunications are mobile telephony services (voice, messages and data) offered under prepaid and postpaid plans. An analysis of how commercial offers have changed over time is presented below.

Prepaid

The analysis of prepaid subscription plans, and their commercial offers, is based on data collected from December 2022 to December 2023 via the "Mi comparador"[49] web tool (see Tables 60 and 61 in the Appendix), and pertains to the three operators engaged in this market, namely: Claro, Kölbi, and Liberty Telecomunicaciones de Costa Rica LY S. A.

> The number of commercial offers increased by 54 % in 2023, rising from 70 subscription plans in 2022 to 108 subscription plans by year-end 2023. Moreover, every single operator increased the number of available offerings,

with Claro reporting the largest relative growth rate with 93 %, followed by Kölbi with 77 %, and Liberty Telecomunicaciones de Costa Rica LY S. A. with 4 %. In terms of market share, Claro accounted for the majority of the market with 52 % of the total available offers in 2023, followed by Liberty Telecomunicaciones de Costa Rica LY S. A. with 27 %, and Kölbi with 21 %.

All three operators continued to offer a wide variety of options in terms of mobile services (i.e.: mobile data, SMS messaging, and voice). Of the total number of commercial offers available in 2023, 44 % included an Internet subscription plan, 24 % only included voice minutes, 18 % included an Internet subscription plan and voice minutes, and 14 % were classified in the "others" category, which for the most part included SMS messaging. The above results confirm that, with respect to prepaid commercial offers, most subscription plans are focused on offering Internet services and/or data usage.

Additionally, in regard to added value or complementary services bundled with these offers, the vast majority of plans include free data, either in an unlimited capacity or with a fixed data limit, for commonly used applications like WhatsApp, Waze, Instagram, Face-

book, Tik Tok, and X, among others, without limiting the purchased data threshold and, as a result, lowering the implicit cost perceived by the customer.

As for their composition, the offers that include free on-net minutes to the same operator range from 10 free on-net minutes to unlimited minutes, which is consistent with what was offered in 2022. The offers that include free minutes to all operators, however, range from 8 to 100 free minutes. This is at odds with what was offered in 2022, when free minutes ranged from 10 minutes to unlimited minutes. A wide range of options were offered in each of the two years under analysis. The commercial offers that include free data in 2023 ranged from 1 GB to unlimited GB of data usage, with options that went up to 600 GB, whereas in 2022 these ranged from 0.03 GB to unlimited GB of data usage, with options that went up to 10 GB. Moreover, by offering subscription plans with higher download data limits, this increase in the free data included with some commercial offers has created added value for customers.

As evidenced in the analysis hereto, prepaid services have shown a substantial increase. This increase can be attributable to the wide degree of options offered to satisfy the various needs of new and existing customers. This is further represented by the uptrend in the number of promotions that create added value for the customer, such as the bundling of free data for commonly used applications which add to the implicit value of these subscription plans in terms of price and other additional benefits.

Postpaid

In regard to postpaid commercial offers (see Tables 62 and 63 in the Appendix), the number of available subscription plans increased from 50 different option in 2022 to 80 different options in 2023, which represents an increase of 60 % in relation to 2022.

Liberty Telecomunicaciones de Costa Rica LY S. A. accounted for the majority of these subscription plans, rising from 12 subscription plans to 34 subscription plans, which represented an increase of 183 %, followed by Claro with 25 subscription plans, which repre-

sented an increase of 47 %. The number of subscription plans offered by Kölbi, on the other hand, remained consistent with a total of 21 subscription plans in both of the two years under analysis. In regard to the market share of the total number of available offers, Liberty Telecomunicaciones de Costa Rica LY S. A. accounted for 43 % of the market, followed by Claro with 31 % of the market, and Kölbi with 26 % of the market..

> Of the total number of postpaid commercial offers, 51 % of the options only included mobile data or Internet services, 11 % of the options included mobile voice services or minutes, and 38 % of the options included mobile voice and data services.

The above results are consistent with what was observed in respect to the number of prepaid subscription plans bundled with additional services. These bundle packages were, for the most part, paired with free data usage, either in an unlimited capacity or with a fixed data limit, for commonly used applications like WhatsApp, Facebook, Instagram, X, and Waze. This means that these apps have unrestricted data caps and do not affect the subscription plan's data allowance.

In terms of composition, the vast majority of offers that include free on-net minutes do so via unlimited minutes, which is consistent with behavior observed in 2022. Regarding free off-net minutes to another operator, options ranged from 8 to 1000 minutes, whereas in 2022 options ranged from 140 minutes to unlimited minutes. In regard to free minutes to all operators (regardless of the type of network, i.e.: fixed or mobile), options ranged from 15 minutes to unlimited minutes, which is consistent with what was observed in 2022. In regard to data, offers ranged from 1 GB to unlimited GB of data usage, with options that went up to 512 GB, whereas in 2022 these ranged from 0.003 GB to 35 GB of data usage.

The results presented above confirm that commercial offers are constantly changing. These offers are characterized by a wide range of options, a propen-

sity for price cutting, and a predisposition to increase the quality of service and the number of available options to consumers. This is evidenced by the recurrent marketing campaigns and by the increase in upload and download capacity of the subscription plans, which offer a wider range of options to the benefit of consumers.

The adjustments made on the subject of prepaid and postpaid commercial offers show that network operators are providing multiple options in an effort to strike a balance between the customers' specific need and the service standards of quality..

Commercial offers in the fixed telecommunications market

The commercial offers for fixed telecommunication services (i.e.: fixed Internet and telephony) show a trend towards bundle packages in recent years[50]. This trend can be attributed to the practicality of offering these services as a bundle package, whereby a single type of infrastructure can used to supply a household. In addition, the option to include a TV subscription bundled with other services has contributed to this trend. Operators have increased the number of options available, and improved price perception, in an effort to adapt to changing customer needs and preferences.

The majority of the fixed telecommunication packages are dual service bundles that include fixed Internet and fixed telephony, fixed telephony and pay TV, or fixed Internet and pay TV. Some packages are triple service bundles that include fixed Internet, pay TV, and fixed telephony[51]. Each package has its own added value or bundles a combination of services in an effort to promote competition in terms of price and benefits to the consumer.

In order to analyze the evolution of these commercial offers over time, this report makes use of infor-

mation provided by the leading operators in the fixed telecommunications market, namely: Millicom, Telecable, Kölbi, and Liberty Servicios Fijos LY S. A.. These operators account for 90 % of the total number of subscriptions in the market. This data is broken down in Tables 64 and 65 of the Appendix, which show the number of packages available to consumers from December 2022 to December 2023.

Of all the available offers, the packages from the four leading operators that include fixed services showed a downward trend, falling from 163 different options in 2022 to 91 different options in 2023, which represents a decrease of 44 % in the period under analysis.

This decrease can be attributed to three of the four operators, namely: Millicom, Telecable, and Kölbi. The number of packages offered by Millicom fell from 17 to 6 options, which represented a decrease of 65 %, while the packages offered by Telecable fell from 69 to 28 options, which represented a decrease of 59 %, and the packages offered by Kölbi fell from 66 to 46 options, which represented a decrease of 30 %. In contrast, Liberty Servicios Fijos LY S. A. offered a total of 11 options in each of the two years under analysis.

In terms of market share, Kölbi accounted for 51 % of the available options, followed by Telecable with 31 %, Liberty Servicios Fijos LY S. A. with 12 %, and Millicom with the remaining 7 %.

It should be noted that, in 2023, the packages that bundle Internet and pay TV services decreased by 66 %, falling from 118 options in 2022 to 40 options in 2023, while the packages that bundle fixed telephony and Internet services increased by 16 %, rising from 19 options in 2022 to 22 options in 2023. Similarly, triple packages that bundle telephony, Internet, and pay TV services increased by 8 %, rising from 25 options in 2022 to 27 options in 2023. In other words, the decrease in fixed services (i.e.: -44 %) is attributable to the decrease in the number of packages that bundle Internet and pay TV services.

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[50] It should be noted that bundling is not tied selling, which is an illegal practice. Bundled services allow customers to benefit from network economies of scale. Customers have the option to purchase a single service from one provider, to purchase a bundle package, or to purchase multiple single services from multiple providers. Given the growing uptrend in bundled services, a detailed analysis of these commercial offers will be carried out.
[51] Mobile telephony services are not currently bundled with other services in the market.

In terms of market share, double play bundles dropped from 85 % of all available offers in 2022 to 70 % of all available offers in 2023,

confirming that consumer preferences have shifted towards packages that bundle more than two services, especially considering that triple play packages (fixed Internet, pay TV, and telephony) rose from 15 % in 2022 to 30 % in 2023.

In regard to the types of technologies available, options range from hybrid packages that use cable, copper and/or fiber networks, to packages that only use fiber networks. In 2023, copper and fiber hybrid packages accounted for 31 % of all available offers, while cable and fiber hybrid packages accounted for 20 %, and fiber-only packages accounted for the remaining 49 %. It should be noted that the market share of fiber optic packages show an upward trend. Moreover, results shows that there has been an increase in the Internet speeds offered by packages that include Internet services. In 2022, for instance, the average Internet speed was 133 Mbps, whereas in 2023 the average Internet speed increased to 170 Mbps.

Therefore, it can be concluded that, in 2023, commercial offers that include fixed telecommunication services will continue to evolve, revealing a dynamic transformation in the market, marked by significant changes in the composition of services and the market share of the leading operators. Moreover, as consumers seek more comprehensive all-in-one solutions, the market share of dual-play and triple-play packages show an upward trend, revealing that consumer preferences have shifted towards options that bundle multiple services in one package. The decrease in the number of available packages suggests that the market is consolidating into a narrow range of straightforward and focused options. This change is also reflected by the increase in the number of connection

technologies, which show a growing trend towards fiber-based connections. Additionally, the increase in the Internet speeds offered by packages demonstrate a continued commitment to customer satisfaction.

PRICES

Following the qualitative analysis of the available commercial offers, a quantitative analysis of the market price will be carried out for 2022 and 2023. This comparative analysis will focus on the average price of the different packages in order to identify significant fluctuations and behaviors during the period under analysis.

In addition, the price index of retail services[52] will be analyzed to monitor trends in the retail market. This quantitative analysis will provide valuable insights, objective information, and hard data to better understand the prevailing competitive dynamics of the market. The mobile telecommunications price index [IPIF as per its acronym in Spanish], the fixed Internet price index [IPIF as per its acronym in Spanish], and the international call price index will be analyzed in accordance with the method and guidelines established and approved by the Board of Directors of the SUTEL.

Average price of commercial offers with bundled services

In regard to pricing trends (see Table 60), an analysis of the packages and download speeds revealed that the average price charged by operators showed a decrease of 6.4 %.

An analysis of the price per package revealed that packages that bundle fixed Internet and telephony showed a decrease of 13.4 %, whereas the packages that offer Internet speeds of 10 Mbps or less remained largely unchanged, showing an increase of approximately 1.5 %. The overall decrease in price can be therefore attributed to the packages that offer fas-

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[52] A retail price index measures the evolution/behavior of consumer prices in a specific market, from the reference month to the month of analysis, on the basis of a given product configuration, user and consumption level. For this reason, SUTEL has developed three different methodologies to monitor this behavior, so as to determine the evolution of the mobile telecommunications market, the fixed Internet market, and the international call service market.

ter speeds, namely: 200 Mbps, 300 Mbps, and 500 Mbps, which represented a decrease of 51 % in relation to 2022.

Double-play packages that bundle Internet and pay TV services decreased by 2.7 %. This drop was mostly prompted by the year-over-year growth of packages that offer speeds of 300 Mbps, which decreased by 41.6 %. Triple-play packages that bundle fixed Internet, pay TV, and telephony services decreased by 3.9 %. This drop was mostly prompted by the decrease in the price of Internet speeds of 30 Mbps or higher.

It should be noted that the minimum price offered for double-play packages that bundle fixed Internet and telephony services was 12 084 colones, with a speed of 1 Mbps, while the maximum price offered was 105 509 colones, with a speed of 500 Mbps. The minimum price offered for double-play packages that bundle Internet and pay TV services, with a speed of 1 Mbps, was 25 900 colones, while the maximum price offered, with a speed of 500 Mbps, was 120 463 colones. The minimum price offered for triple-play packages that bundle fixed Internet, pay TV, and telephony services, with a speed of 1 Mbps, was 29 069 colones, while the maximum price offered, with a speed of 500 Mbps, was 123 509 colones.

It should be noted that the Internet speeds of the available commercial offers in 2023 showed an upward trend, given that at least one operator offered a package with an Internet speed of 1000 Mbps.

In addition, as shown in , the downtrend in price is more pronounced the higher the Internet speed of the package, thereby encouraging customers to purchase subscriptions with faster connection speeds.

Lastly, when comparing the Internet speed ranges of 1 to 10 Mbps, the average difference in price between double-play packages that bundle Internet and pay TV services and triple-play packages that bundle fixed Internet, pay TV, and telephony services was 3296 colones.

Mobile Telecommunications Price Index [IPTM]

SUTEL developed a price index for mobile telecommunications (which include voice, SMS and mobile data services) that monitors prices as of July 2017, the reference month, which took place before the market was declared to be under fair competitive conditions (October 2017). With this SUTEL has one more element to consider when making regulatory decisions.

This price index revealed that prices have shown a downward trend since July 2017, reaching 68.1 % by the end of 2023, which represents a decrease of 31.9 percentage points in relation to the reference month; i.e.: -6.3 percentage points less than December 2022 (see Graph 184).

An analysis of the price per payment option revealed that, in 2023, postpaid subscriptions reached 65.8 %, which represents a decrease of 34.23 percentage points in relation to the reference month, and a decrease of 8.6 percentage points in relation to December 2022. This decline was mostly prompted by subscription plans that fall within the parameters of the price index due to the number of subscribers, and that offer a higher data limit and more on-net minutes in relation to the subscription plans they replaced. Similarly, prepaid subscriptions reached 85.05 %, which represents a decrease of 14.95 percentage points in relation to the reference month, and a decrease of 4.3 percentage points in relation to December 2022 (see Graphs 185 and 186).

Fixed Internet Price Index [IPIF]

This price index monitors the price per Mbps provided by operators in their commercial offers. On an ove-rall basis (see Graph 187), prices have declined by 64.64 % in relation to the reference month (i.e.: July 2018), which is after the month in which the market was declared to be under competitive conditions (i.e.: December 2017). The price index decreased by 3.6 percentage points in relation to December 2022.

International Call Price Index

The price index for international calls [IP - LLInt as per its acronym in Spanish] measures the changes in the per-minute international calling rates offered by opera-tors as of July 2021 (reference month), which is after the month in which the market was declared to be under competitive conditions (i.e.: November 2016). Results in 2023 were as follows: the second half of 2023 showed a downward trend in the price per international minute, falling to 79.06% in relation to the reference month; i.e.: -5.46 percentage points less than December 2022 (see Graph 188).

In regard to the price indexes, it would be preferable if it were made clear how much the price has dropped over the last year, and how much the price has dropped since the reference month, and to specify that the reference month takes place after the market was declared to be under competitive conditions.

Graph 184. Costa Rica: Half-yearly evolution of the national mobile telecommunications price index (reference month: July 2017) in 2017-2023
(quarterly figures in percentage terms)

| July 2017 (Reference Month) | Q4 2017 | Q4 2018 | Q4 2019 | Q4 2020 | Q4 2021 | Q4 2022 | Q4 2023 |
| 100.0 % | 95.2 % | 97.3 % | 88.0 % | 87.4 % | 86.3 % | 74.4 % | 68.1 % |
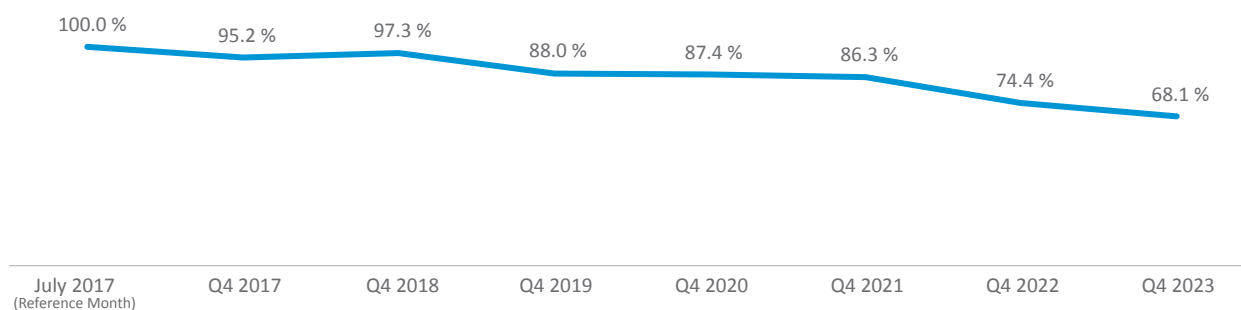
Source: SUTEL, General Directorate of Markets, Costa Rica, 2023.

Graph 185. Costa Rica: Half-yearly evolution of the postpaid mobile telephony price index (reference month: July 2017) in 2017-2023

(quarterly figures in percentage terms)

100.0 %   94.2 %   97.3 %   86.7 %   86.1 %   84.8 %   72.0 %   65.8 %

July 2017 (Reference Month)   Q4 2017   Q4 2018   Q4 2019   Q4 2020   Q4 2021   Q4 2022   Q4 2023

—— Postpaid Index
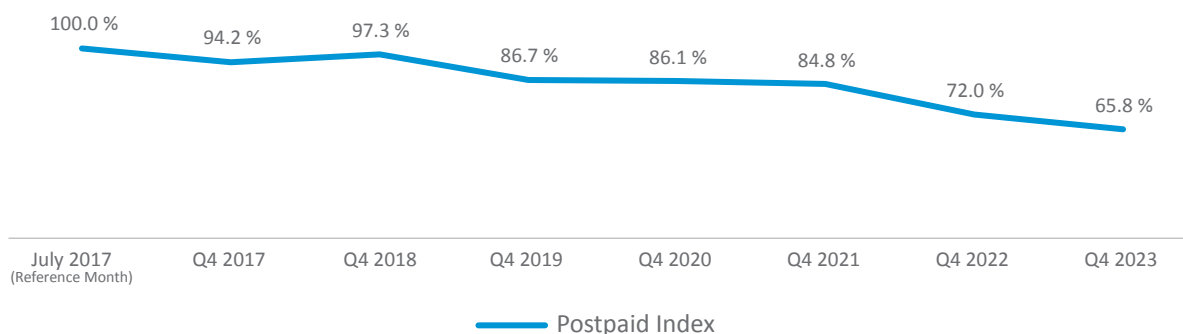
Source: SUTEL, General Directorate of Markets, Costa Rica, 2023.

Graph 186. Costa Rica: Half-yearly evolution of the prepaid mobile telephony price index (reference month: July 2017) in 2017-2023

(quarterly figures in percentage terms)

100.00%   96.44%   97.28%   92.00%   92.49%   92.29%   88.90%   85.05%

July 2017 (Reference Month)   Q4 2017   Q4 2018   Q4 2019   Q4 2020   Q4 2021   Q4 2022   Q4 2023
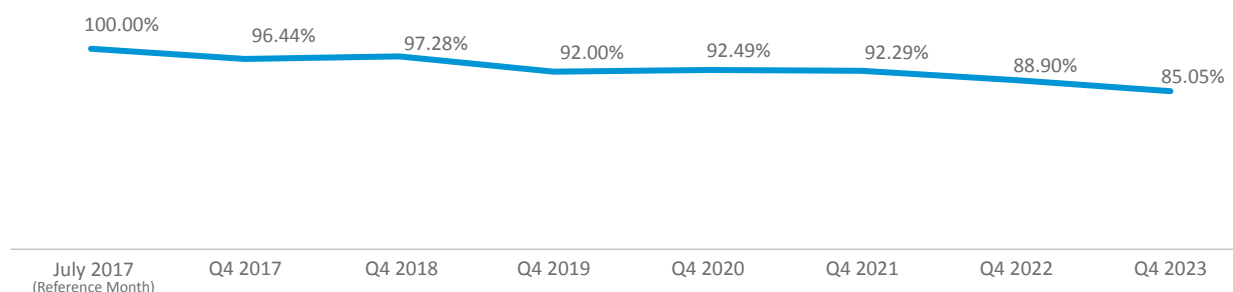
Source: SUTEL, General Directorate of Markets, Costa Rica, 2023.

Graph 187. Costa Rica. Evolution of the fixed Internet price index (reference month: July 2018) in 2018-2023

(half-yearly figures in percentage terms)

100 %   88.8 %   68.9 %   64.6 %   60.5 %   58.0 %   50.6 %   38.9 %   35.4 %

July 2018 (Reference Month)   Q4 2018   Q4 2019   Q4 2019   Q4 2020   Q4 2020   Q4 2021   Q4 2022   Q4 2023
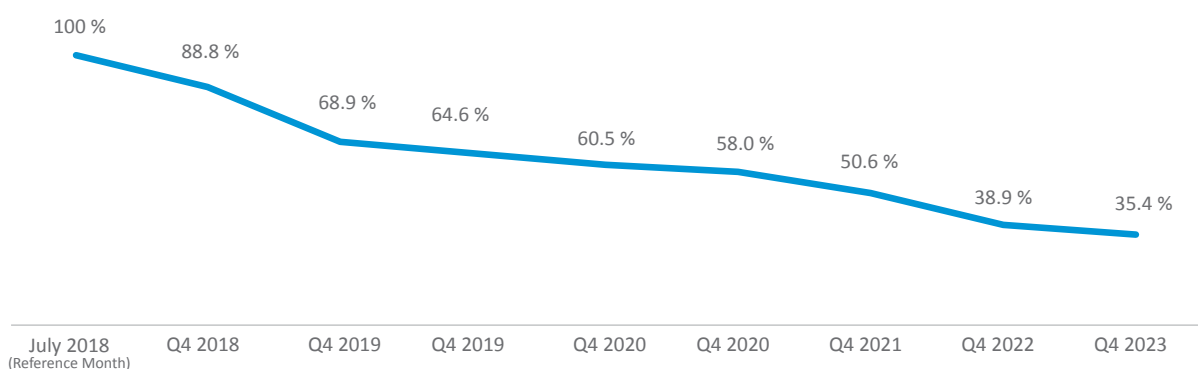
Source: SUTEL, General Directorate of Markets, Costa Rica, 2023.

Graph 188. Costa Rica. Evolution of the International Voice Call price index (reference month: July 2021) in 2023
(half-yearly figures in percentage terms)
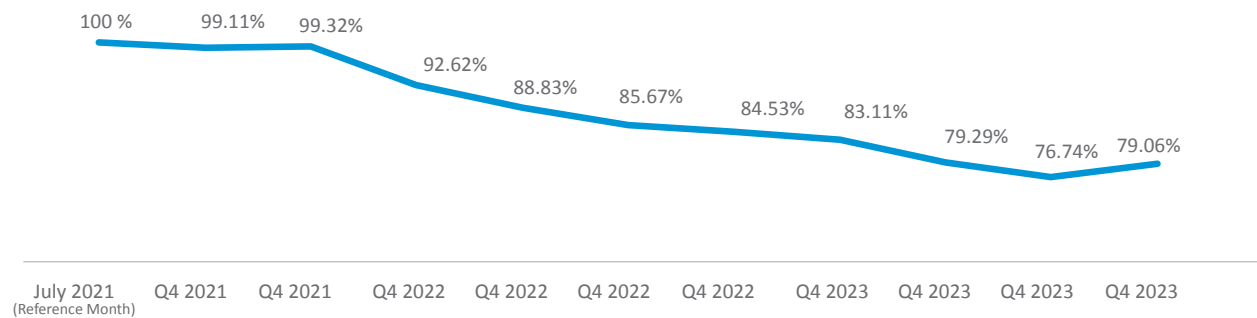
Source: SUTEL, General Directorate of Markets, Costa Rica, 2023.

NETWORK QUALITY AND PERFORMANCE

2023

1 QUALITY OF FIXED INTERNET SERVICES

This section of the report outlines the results of the fixed Internet quality assessments conducted from 2019 to 2023. This section shows the results of the field measurements taken via the specialized measurement probes that monitor a total of 255 Internet services across the country. These results are then compared against the threshold [i.e.: the target value] established by the SUTEL in the Service Provision and Quality Regulations[53] and its associated resolutions.

Measurements are taken in accordance with the methodology described in this report, and in compliance with the stipulations set forth by the Board of Directors of SUTEL in Resolution No. RCS-019-2018, titled: "Resolution on measurement methodologies applicable to the service provision and quality regulations".

The following sections present the results for each of the quality indicators that were calculated to assess the quality of the fixed Internet service provided.

1.1. Local latency results

Graph 189 shows the results of the local latency assessments conducted from 2019 to 2023. The local latency indicator measures the response time of an operator's network. In other words, it measures how fast a data packet travels through an operator's network, where the lower the value, the better the latency.

The regulatory threshold determined by SUTEL for this indicator is 50 ms (milliseconds). None of the operators have exceeded this threshold, according to their national average results, in any of the years under evaluation. Two of the four operators reported an improvement in the performance of this indicator in comparison to the previous year, or in other words, a decrease in latency, i.e.: **Telecable** went from 22.4 ms to 6.3 ms, while **Kölbi** went from 15.7 ms to 14.6 ms. Conversely, **Liberty Servicios Fijos** went from 13.9 ms to 16.6 ms, while **Tigo** went from 17.0 ms to 22.4 ms. In 2023, the four leading operators met the maximum latency threshold specified in the applicable regulations.

Graph 189 shows that **Telecable** made significant improvements in this regard, becoming the first operator to achieve a latency of less than two digits, with an average low latency value of 6.3 ms. These improvements can be attributed to the increase in fiber optic services reported by Telecable, which accounted for 60 % of the total number of connections that were assessed for this operator. Similarly, **Kölbi** reported low latency values which have remained stable over the last three years [i.e.: from 2021 to 2023], with an average latency of 15 ms during that three-year period.

> Local latency values have been steadily improving in recent years. The nationwide median value, for instance, went from 31 ms in 2019 to 15 ms in 2023, denoting that the median local latency value has been cut in half over the last five years. These improvements can be largely attributed to widespread adoption of faster technologies by network operators.

53 The Service Provision and Quality Regulations [RPCS] was published on February 17th, 2017, in the Official Gazette "La Gaceta" No. 36, and became effective as of February 17th, 2018.

Graph 190 shows the latency values of each operator broken down per province in 2023. In accordance with nationwide trends, Telecable reported the best latency results per province[54], except for Puntarenas, where Kölbi had the lowest latency results.

San Jose reported the best latency results with an average value of 12.8 ms, followed by Heredia with 14.1 ms, Alajuela with 15.8 ms, Guanacaste with 16.4 ms, Cartago with 18.1 ms, Limon with 18.4 ms, and Puntarenas with 23.5 ms.

Table 18 shows the local latency values per province from 2019 to 2023, and highlights the local latency results per province that are lower than the 2023 nationwide median value of 15 ms. This table also reveals that there has been a marked improvement from 2021 onwards, particularly in San Jose and Heredia, which reported annual latency results under the nationwide median value of 15 ms.

It should also be noted that, as shown in Table 18, the coastal provinces of Puntarenas and Limon are the only two provinces not to have reported annual latency results under the nationwide median value of 15 ms. This is consistent with the limited market penetration of fiber-based services in these two provinces in relation to other provinces within the Greater Metropolitan Area. In concrete terms, 12 % of the services evaluated by the SUTEL in 2023 in the province of Puntarenas were fiber-based services, whereas in the rest of the country these services accounted for over 35 % of the total.

1.2. International latency results

Graph 191 shows the international latency results from 2019 to 2023. The key performance indicator for international latency is a purely informative parameter that measures the response time of an operator's network. In other words, it measures how fast a data packet travels between an operator's network and an international network, where the lower the value, the better the latency.

The regulatory threshold determined by SUTEL for this indicator is 150 ms (milliseconds). None of the operators have exceeded this threshold, according to their national average results, in any of the years under evaluation. Two of the four operators reported an improvement in the performance of this indicator in comparison to the previous year, or in other words, a decrease in latency, to wit: **Telecable** went from 76.9 ms to 60.3 ms, while **Tigo** went from 66.9 ms to 64.7 ms. Conversely, the local latency of **Kölbi** and **Liberty Servicios Fijos** rose by 0.8 ms and 3.7 ms (totaling 63.3 ms and 58.5 ms), respectively. This worsening in latency is relatively small when compared to the nationwide latency reported in 2023, which was 62 ms.

> Much like local latency, international latency values have been steadily improving in recent years,
>
> falling from 74 ms in 2020 to 62 ms in 2023, which represents an improvement of 16 % over the last four years.

Graph 192 shows the international latency per province in 2023. This breakdown of the results shows that **Liberty Servicios Fijos** reported the best international latency results per province, except for Guanacaste, where **Kölbi** and **Telecable** reported an international latency of 62.8 ms and 62.7 ms, respectively.

Heredia reported the best international latency results with an average value of 58.4 ms, followed San Jose with 61 ms, Alajuela with 62.4 ms, Cartago with 62.5 ms, Guanacaste with 65.5 ms, Limon with 65.7 ms, and Puntarenas with 72 ms.

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[54] There were no local latency assessments made in the province of Limon for Telecable in 2023 due to the operator's limited market penetration, which made it difficult to install test equipment and obtain measurements.

Table 19 shows the international latency per province from 2019 to 2023, and highlights the results per province that are lower than the 2023 nationwide median value of 62 ms. This table also reveals that there has been a marked improvement over the last three years, from 2021 to 2023, particularly in San Jose and Heredia, which reported annual latency results under the nationwide median value of 62 ms.

Table 19 also shows that, in 2023, none of the operators in the coastal provinces of Guanacaste, Puntarenas, and Limon achieved an international latency under the nationwide median value of 62 ms, whereas in Heredia, every single operator reported exceptionally favorable international latency values in 2023.

1.3. Measured download speed vs provisioned download speed

The quality assessments conducted by the SUTEL make it possible to compare the measured download speed and provisioned download speed for every service under analysis. The ratio of measured download speed to provisioned download speed is shown in percentage, and represents how much of the advertised bandwidth a given operator actually provides per customer. Regarding download speed, the resulting ratio expresses the relation between the measured download speed and the download speed advertised by the operator for each service under analysis.

Graph 193 shows the results of the measurements recorded from 2019 to 2023; it includes all the services under evaluation in all the relevant markets. This indicator measures how much is obtained in relation to what was advertised, which means that the higher the value, the better the result. It should be noted that the SUTEL has determined that an operator must meet a minimum regulatory threshold of no less than 80 %, and that, in 2023, the four leading operators under analysis achieved ratios that exceed said threshold, as shown in Graph 193.

Graph 193 shows that Telecable achieved a ratio of 100 % for the services under analysis. This means that every single customer that purchased an Inter-

net subscription plan of 30 Mbps enjoyed a download speed of 30 Mbps. Similarly, Tigo achieved a ratio of 100 % for Internet services with an advertised download speed of 50 Mbps.

Graph 193 also shows that Kölbi, the state-owned operator, achieved a ratio of 97 % in 2023. This means that customers that purchased an Internet subscription plan of 10 Mbps observed an average speed of 9.7 Mbps. In addition, Liberty Servicios Fijos achieved a ratio of 93 %, which means that customers that purchased an Internet subscription plan of 80 Mbps observed an average speed of 74 Mbps.

Graph 193 shows an overall improvement in the two most recent years [i.e.: 2022 and 2023], with an average increase of 10 percentage points in relation to the median value observed from 2019 to 2021.

> The ratio of measured download speed to provisioned download speed in 2021 was 80 %. This ratio increased to 92 % in 2022, and to 98 % in 2023.

Graph 194 shows the ratio of measured download speed to provisioned download speed per province in 2023. It revealed that the province of Heredia achieved the best average results with a ratio of 100 %, followed by San Jose with 99 %, Cartago with 98%, Alajuela with 97 %, and Puntarenas with 96 %. The provinces of Guanacaste and Limon also showed relatively high-performance ratios, with 93 % and 91 %, respectively.

Table 20 shows the results per province from 2019 to 2023, and highlights the results per province that achieved a ratio greater than 100 %, as these are cases in which the provisioned download speed was better than the advertised download speed, exceeding the contractually agreed Internet speed between the operator and the customer. This table also shows that

the provinces that form part of the Greater Metropolitan Area achieved the most results above 100 %, with Heredia reporting the best overall results in 2023.

1.4. Measured upload speed vs provisioned upload speed

In exactly same way as with download speeds, the ratio of measured upload speed to provisioned upload speed is shown in percentage, and represents how much of the advertised bandwidth a given operator actually provides per customer. The resulting ratio expresses the relation between the measured upload speed and the upload speed advertised by the operator for each service under analysis.

Graph 195 shows the results of the measurements recorded from 2019 to 2023; it includes all the services under evaluation in all the relevant markets. This indicator measures how much is obtained in relation to what was advertised, which means that the higher the value, the better the result. Moreover, if the ratio exceeds 100 %, then the provisioned speed was even greater than the contractually agreed Internet speed between the operator and the customer. The minimum regulatory threshold established by the SUTEL for upload speeds is also 80 %. In 2023, the four leading operators under analysis achieved ratios that exceed said threshold, as shown in Graph 195.

Graph 195 shows that Kölbi achieved a ratio of 100 % for the services under analysis. This means that every single customer that purchased an Internet subscription plan of 4 Mbps enjoyed an upload speed of 4 Mbps. Similarly, Liberty Servicios Fijos and Telecable achieved an average ratio of 100 % for the Internet services under analysis, which had advertised upload speeds of 10 Mbps and 30 Mbps, respectively. Graph 195 also shows that Telecable achieved a ratio of 94 % in 2023. This means that customers that purchased an Internet subscription plan of 7 Mbps observed an average upload speed of 6.6 Mbps.

Graph 195 shows an overall improvement in upload speeds, with an average increase of 7 percentage points in the nationwide median value over the last three years.

Mientras que en 2020 el resultado promedio de la velocidad de envío respecto de la velocidad contratada fue de 93 %, para 2021 y 2022 ese mismo indicador fue de 94 % y en 2023 alcanzó el 100 %.

Graph 196 shows the ratio of measured upload speed to provisioned upload speed per province in 2023. It revealed that the provinces of San Jose, Heredia, Limon, and Alajuela achieved the best average results with a ratio of 100 %. The provinces of Cartago, Puntarenas, and Guanacaste achieved high performance ratios of 98 %, 96 %, and 94 %, respectively,

Table 21 shows the results per province from 2019 to 2023, and highlights the results per province that achieved a ratio greater than 100 %, as these are cases in which the provisioned download speed was better than the advertised download speed, exceeding the contractually agreed Internet speed between the operator and the customer. This table also shows that **Kölbi** achieved excellent performance results in six of the seven provinces across the country, whereas Telecable achieved excellent results in two of the seven provinces, and both **Liberty Servicios Fijos** and **Tigo** achieved excellent results in one province.

2 QUALITY OF MOBILE SERVICES

As part of the ongoing process of evaluating the quality of service of the 2G, 3G and 4G networks operated by **Kölbi**, **Claro** and **Liberty Telecomunicaciones de Costa Rica LY**, the Superintendency of Telecommunications [SUTEL] compiled and analyzed measurements recorded from January 1st, 2022, to December 31st, 2022.

It should be noted that this report includes data from 2022 and not from 2023 since, as of the cutoff date of this report, the results for 2023 are still in the data processing stage.

2.1. Coverage results (percent coverage)

To properly analyze coverage, results must be examined in accordance with the respective areas covered by the operators and reported to SUTEL, namely: (i) inside buildings; (ii) inside motor vehicles; and (iii) outdoors. The coverage layers reported by **Claro**, **Kölbi** and **Liberty Telecomunicaciones de Costa Rica LY** in 2022 were examined to determine compliance levels.

For the purposes of this analysis, data was filtered via SUTEL's Geographic Information System [GIS] to verify that the intensity of the signal strength recorded in the field is consistent with the information reported by the operators, in terms of the different types of coverage, who make this information public on their respective websites.

In 2022, the percent coverage of **Claro** in 2G networks was 95.5 %, followed by **Kölbi** with 91.5 %, and **Liberty Telecomunicaciones de Costa Rica LY** with 80.2 %, as shown in Graph 197.

Regarding the 3G network, Graph 198 shows that, in 2022, Claro recorded a percent coverage of 89.9 %, followed by **Kölbi** and **Liberty Telecomunicaciones de Costa Rica LY**, who recorded 98.6 % and 96.5 %, respectively.

Finally, in 2022, the percent coverage of **Claro** in 4G networks (see Graph 199) was 75.5 %, followed by **Kölbi** with 83.8 % and **Liberty Telecomunicaciones de Costa Rica LY** with 99.5 %.

This indicator measures the degree of coverage that a given operator fulfills in terms of what was advertised to customers. In Graph 199, for example, results show that, with respect to 4G technology, 75.5 % of the measurements taken by the SUTEL about Claro were found to be complying. In other words, 24.5 % of

Claro's measurements did not meet the minimum coverage threshold promised by said operator. Similarly, regarding **Kölbi**, 83.8 % of measurements exceeded the coverage advertised by the operator, while 16.2 % of the measurements did not meet the minimum coverage threshold reported by the state-owned operator in 2022. **Liberty Telecomunicaciones de Costa Rica LY S. A.** achieved the best results in terms of coverage layers, achieving a performance ratio of 99.5 %, with only 0.5 % of the measurements failing to fulfill the coverage level promised in 2022.

2.2. Voice service results

The call-failed indicator measures the percentage of failed call attempts that were unsuccessful due to technical difficulties with the operator's network. As such, the lower the number, the better the quality of the service.

Regarding the nationwide median value for 2G technology, the three operators under analysis achieved a call-failed ratio below the regulatory threshold of 3 %, with **Claro** achieving a ratio of 2.5 %, **Kölbi** achieving a ratio of 2.9 %, and **Liberty Telecomunicaciones de Costa Rica LY S. A.** achieving a ratio of 2.2 %. Regarding 3G technology, **Claro** achieved a ratio of 1.5 %, **Kölbi** achieved a ratio of 3.1 %, and **Liberty Telecomunicaciones de Costa Rica LY S A.** achieved a ratio of 1.8 %. Graph 200 shows the call-failed indicator results for 2G and 3G networks in 2022.

The dropped-call indicator measures the percentage of calls that, after a successful connection, are unexpectedly dropped before normal termination due to technical difficulties with the operator's network. As with the previous indicator, the lower the number, the better the quality of the service. Regarding 2G technology, the three operators under analysis failed to meet the regulatory threshold of 2 %, with claro achieving a ratio of 6.9 %, **Kölbi** achieving a ratio of 3.3 %, and **Liberty Telecomunicaciones de Costa Rica LY S. A.** achieving a ratio of 4.8 %. Regarding the 3G network, Claro recorded a dropped-call rate of 1.2 %, while **Kölbi** recorded 3.6 %, and **Liberty Telecomu-**

nicaciones de Costa Rica LY recorded 1.7 %. shows the dropped-call indicator results for 2G and 3G networks in 2022.

The call set-up time indicator measures the duration of time needed in seconds from the moment a user initiates a call to the moment a dial tone is heard. The regulatory threshold for this indicator states that call set-up time should not exceed 8 seconds. Consequently, the lower the number of seconds, the better the quality of the service. Regarding the 2G network, **Claro** recorded a call set-up time of 4.5 seconds, while **Kölbi** recorded 3.4 seconds, and **Liberty Telecomunicaciones de Costa Rica LY** recorded 4.6 seconds. Regarding the 3G network, **Claro** recorded a call set-up time of 5.1 seconds, while **Kölbi** recorded 3.1 seconds, and **Liberty Telecomunicaciones**

de Costa Rica LY recorded 3.3 seconds. shows the call set-up time indicator results for 2G and 3G networks in 2022.

The voice quality indicator measures the audio quality of a telephone call on a scale of 1 to 5, where values above 3 reflect good voice quality, and the closer the result is to a value of 5, the better the voice quality of the call. Regarding the 2G network, in 2022, **Claro** recorded a voice quality score of 3.6, while **Kölbi** recorded a score of 3.0, and **Liberty Telecomunicaciones de Costa Rica LY** recorded a score of 3.6. Regarding the 3G network, **Claro** recorded a voice quality score of 3.3, while **Kölbi** recorded a score of 3.2, and **Liberty Telecomunicaciones de Costa Rica LY** recorded a score of 3.6. shows the voice quality indicator results for 2G and 3G networks.

2.3. Data service results

The local latency indicator is determined by conducting ping tests against a dedicated server in Costa Rica, located in the Internet Exchange Point [IXP] operated by "NIC Costa Rica," commonly referred to as CRIX, in accordance with the provisions established in article 44 of the Service Provision and Quality Regulations. For the purposes of this indicator, the lower the number of milliseconds, the better the quality of the service. Regarding the 3G network, in 2022, **Claro** recorded a local latency of 141.8 milliseconds, while **Kölbi** recorded a latency of 56.6 milliseconds, and **Liberty Telecomunicaciones de Costa Rica LY** recorded a latency of 56.5 milliseconds. Regarding the 4G network, **Claro** recorded a local latency of 38.2 milliseconds, while **Kölbi** recorded a latency of 40.9 milliseconds, and **Liberty Telecomunicaciones de Costa Rica LY** recorded a latency of 38.4 milliseconds. Graph 204 shows the call local latency indicator results for 3G and 4G networks in 2022.

Field measurements were taken, via probes traveling along the country's highways, to gather data transfer rate samples from each operator and determine the connection speed of their mobile services. The results of these speed measurements were used to calculate this indicator in terms of the two types of coverage layers offered by operators, namely: "indoors" and "in-vehicle."

Graph 205 shows the download speeds of the 3G and 4G networks. **Claro** recorded a download speed of 3.4 Mbps in 3G networks and 16.6 Mbps in 4G networks, while **Kölbi** recorded a speed of 3.2 Mbps in 3G and 18.6 Mbps in 4G, and **Liberty Telecomunicaciones de Costa Rica LY** recorded a speed of 3.2 Mbps in 3G and 11.5 Mbps in 4G. It should be noted that the speeds shown in Graph 205 heavily depend on the characteristics of the data plans of the devices used to take the measurements and could, therefore, differ from the speeds perceived by some users.

Graph 206 shows the upload speeds of the 3G and 4G networks. **Claro** recorded an upload speed of 4.5 Mbps in 3G networks and 16.0 Mbps in 4G networks, while **Kölbi** recorded a speed of 0.9 Mbps in 3G and

12.5 Mbps in 4G, and **Liberty Telecomunicaciones de Costa Rica LY** recorded a speed of 0.5 Mbps in 3G and 11.3 Mbps in 4G. It should be noted that the speeds shown in Graph 206 heavily depend on the characteristics of the data plans of the devices used to take the measurements and could, therefore, differ from the speeds perceived by some users.

3 QUALITY OF THE MOBILE INTERNET USER EXPERIENCE

This section of the report outlines the results of the quality of the user experience, which was determined using the Opensignal speed test application. The app is free of charge and collects data from users who voluntarily install the application to their mobile device. This data is, therefore, sourced from a variety of terminal devices with different data plans, and is applicable to the various services provided to users based on their respective data plan.

Starting in 2016, Opensignal has allowed SUTEL to generate reports on the quality of service experienced by the user [QoE] from the data collected via this tool. This collaborative tool was designed to collect data directly from the user's terminal device (mobile phone).

The data used to generate these reports is collected irrespective of the user's location or, in other words, with no regard to whether the user is indoors or outdoors, in a rural or urban area, stationary or in motion, or in a city or traveling the country's highways and roads. The performance of the networks is measured under different scenarios comparable to the experience a user would have when utilizing mobile services.

Graph 207 shows how the 3G speeds of each operator have changed in Costa Rica from 2019 to 2023. The three operators under evaluation maintained a steady growth rate during the first half of 2021. From the second half of 2021 onwards, however, these growth rates experienced abrupt changes, only to la-

ter return to a level comparable to what was observed during the first half of 2021 . The Internet speeds of **Kölbi** and **Claro** remained stable at over 4 Mbps in 2023, whereas customers of **Liberty Telecomunicaciones de Costa Rica LY S. A.** enjoyed average speeds of over 6 Mbps.

Graph 208 shows how the download speed of 4G networks has changed over time, revealing a marked difference when compared to 3G networks. **Kölbi** has reported stable Internet speeds from 2019 to 2023 in a range of 10 Mbps, between 23 Mbps and 33 Mbps, reaching approximately 27 Mbps in 2023. The Internet speeds of **Liberty Telecomunicaciones de Costa Rica LY S. A.** have been steadily increasing over the last 5 years, with 2023 reporting the most notable increase, when it rose from 10 Mbps to 17 Mbps by year-end 2023. **Claro** ranked first in 2023 in terms of highest Internet browsing speed in 4G networks, reaching an average speed of 29 Mbps by year's end.

Graph 209 shows the percentage of time that a user of a specific operator is connected to a 4G network, and is representative of the quality of service experienced by users, as it reflects the ease with which users can enjoy high Internet speeds in a 4G network. In regard to this indicator,

the latest results in 2023 reveal that Claro and Liberty Telecomunicaciones de Costa Rica LY S. A. show an upward trend in terms of 4G coverage, reaching a value of 90 % and 84 %, respectively,

whereas Kölbi's coverage remained largely unchanged since 2020, reaching a 4G coverage of 68 % by year-end 2023.

Graph 189. Costa Rica: Local latency from 2019 to 2023
(figures in milliseconds)

| | 2019 | 2020 | 2021 | 2022 | 2023 |
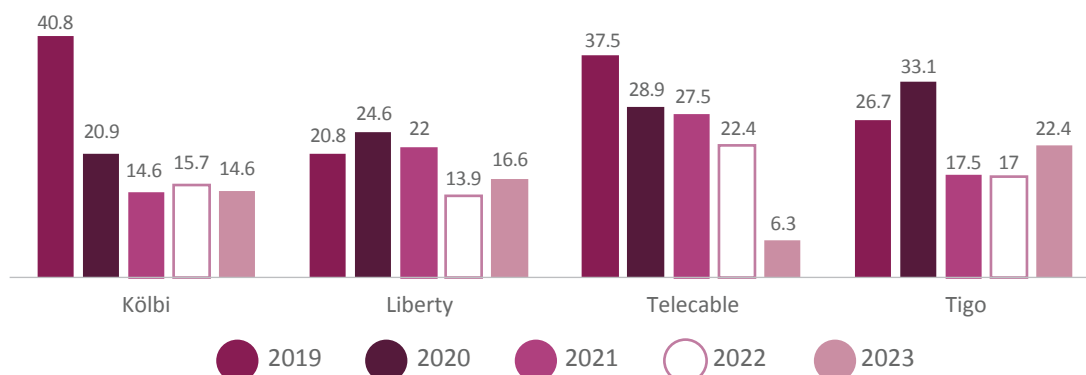
Source: SUTEL, Directorate of Quality. Costa Rica, 2023.

Graph 190. Costa Rica: Local latency per province in 2023
(figures in milliseconds)
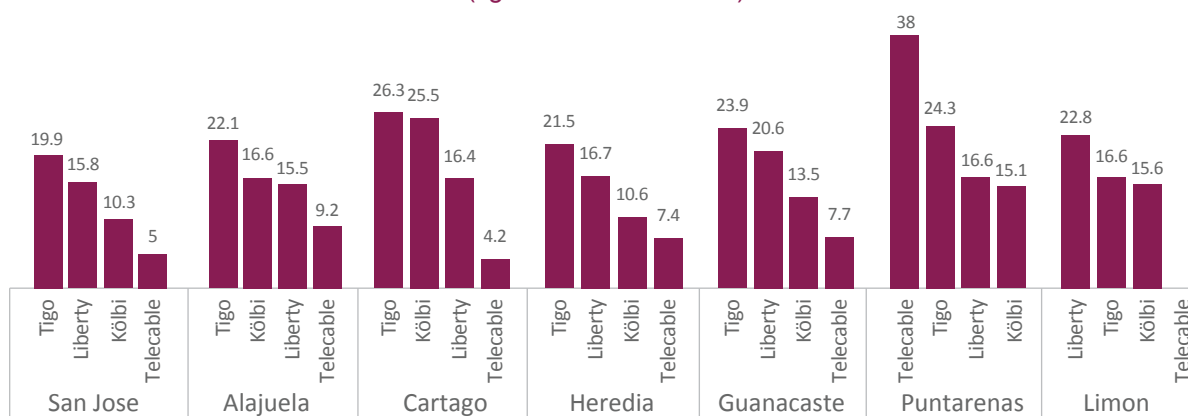
Source: SUTEL, Directorate of Quality. Costa Rica, 2023.

DGC Table 18. Costa Rica: Local latency per province from 2019 to 2023
(figures in milliseconds)

Province	Operator	2019	2020	2021	2022	2023
San Jose	Kölbi	39.2	18.2	11.2	12.1	10.3
	Liberty	20.8	25.6	17.9	12.4	15.8
	Telecable	38.6	29.6	26.9	10.6	5.0
	Tigo	24.9	28.3	13.3	13.2	19.9
Alajuela	Kölbi	39.2	17.9	16.9	18.5	16.6
	Liberty	17.1	20.5	15.1	14.3	15.5
	Telecable	46.3	33.1	32.9	55.2	9.2
	Tigo	25.8	37.0	23.7	18.3	22.1

Province	Operator	2019	2020	2021	2022	2023
Cartago	Kölbi	37.2	23.5	13.8	17.4	25.5
	Liberty	24.5	47.4	33.6	12.7	16.4
	Telecable	33.2	17.7	15.0	32.1	4.2
	Tigo	26.9	29.0	16.4	16.8	26.3
Heredia	Kölbi	44.6	17.0	9.7	14.6	10.6
	Liberty	18.9	17.5	40.3	12.8	16.7
	Telecable	33.0	30.2	34.5	29.4	7.4
	Tigo	28.1	28.4	13.6	17.6	21.5
Guanacaste	Kölbi	45.6	36.3	24.7	18.7	13.5
	Liberty	33.5	27.6	16.7	17.4	20.6
	Telecable	41.0	50.7	18.8	8.8	7.7
	Tigo	21.2	48.2	19.3	19.4	23.9
Puntarenas	Kölbi	44.1	23.7	17.2	19.0	15.1
	Liberty	18.0	19.8	21.1	16.6	16.6
	Telecable	37.4	17.7	20.7	18.4	38.0
	Tigo	36.4	30.8	20.2	19.5	24.3
Limon	Kölbi	44.9	17.7	15.5	16.1	15.6
	Liberty	21.9	25.2	18.7	20.4	22.8
	Telecable					
	Tigo	33.0	33.7	18.9	19.4	16.6

Source: SUTEL, General Directorate of Quality [DGC as per its acronym in Spanish]. Costa Rica, 2023.

Graph 191. Costa Rica: International latency 2019 - 2023
(figures in milliseconds)

Kölbi: 68.2, 72.9, 61.9, 62.5, 63.3
Liberty: 59.7, 66, 57.4, 54.8, 58.5
Telecable: 78, 79.6, 79.4, 76.9, 60.3
Tigo: 68.4, 78.5, 70.7, 66.9, 64.7

● 2019 ● 2020 ● 2021 ○ 2022 ● 2023
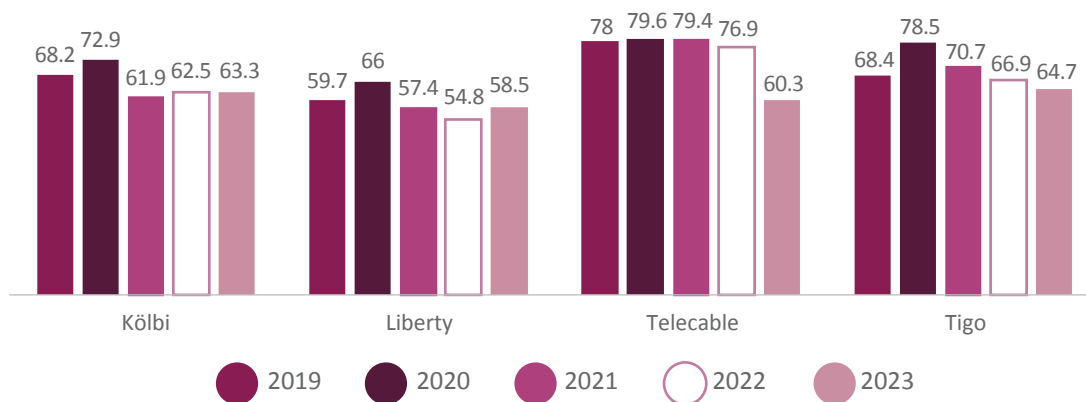
Source: SUTEL, Directorate of Quality. Costa Rica, 2023.

Graph 192. Costa Rica: International latency per province in 2023
(figures in milliseconds)
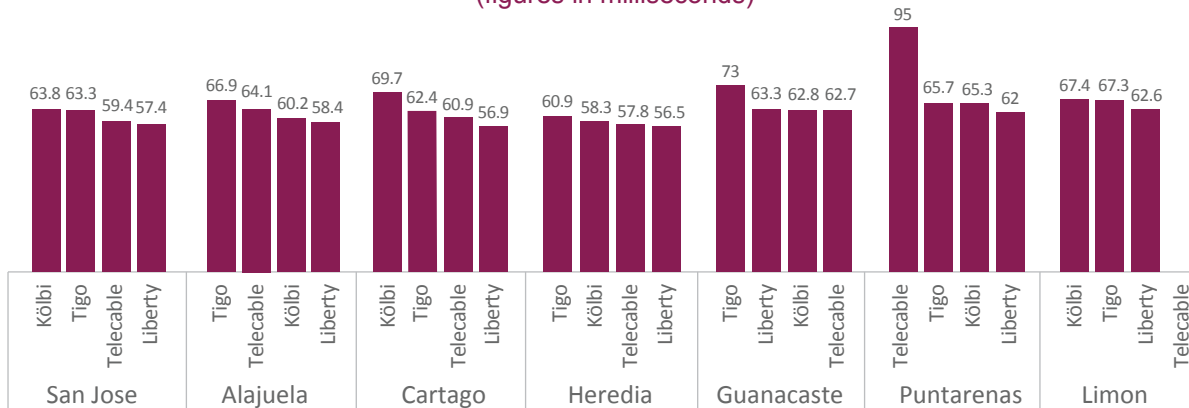
Source: SUTEL, Directorate of Quality. Costa Rica, 2023.

DGC Table 19. Costa Rica: International latency per province in 2019-2023
(figures in milliseconds)

Province	Operator	2019	2020	2021	2022	2023
San Jose	Kölbi	70.1	74.3	60.9	62.4	63.8
	Liberty	58.9	65.0	55.6	53.9	57.4
	Telecable	79.0	80.5	79.3	65.0	59.4
	Tigo	68.5	75.0	61.7	61.6	63.3
Alajuela	Kölbi	67.5	67.8	62.8	63.0	60.2
	Liberty	60.5	65.8	56.9	54.8	58.4
	Telecable	80.8	84.1	84.3	113.1	64.1
	Tigo	69.8	83.3	81.9	66.9	66.9
Cartago	Kölbi	78.5	76.5	62.2	62.1	69.7
	Liberty	58.7	79.3	55.4	54,0	56.9
	Telecable	73.6	70.0	67.2	85.7	60.9
	Tigo	70.6	73.2	61.9	68.4	62.4
Heredia	Kölbi	56.3	68.5	57.2	57,6	58.3
	Liberty	58.5	62.6	59.9	53.7	56.5
	Telecable	76.6	78.8	85.0	82.7	57.8
	Tigo	66.7	72.9	70.3	65.2	60.9
Guanacaste	Kölbi	66.6	76.4	67.1	66.5	62.8
	Liberty	61.2	66.5	59.0	58.4	63.3
	Telecable	82.3	103.4	71.5	67.7	62.7
	Tigo	64.5	93.4	74.3	75.9	73.0

Province	Operator	2019	2020	2021	2022	2023
Puntarenas	Kölbi	65.3	79.1	64.2	67.9	65.3
	Liberty	61.6	65.4	59.9	55.4	62,0
	Telecable	73.3	70.4	73.0	73.5	95.0
	Tigo	71.2	75.4	72.4	68.5	65.7
Limon	Kölbi	64.3	68.0	60.2	64.0	67.4
	Liberty	66.4	72.7	61.6	61.2	62.6
	Telecable					
	Tigo	66.9	78.4	70.4	75.9	67.3

Source: SUTEL, Directorate of Quality. Costa Rica, 2023.

Graph 193. Costa Rica: Download speed vs advertised subscription speed in 2019-2023
(figures in percentage terms)
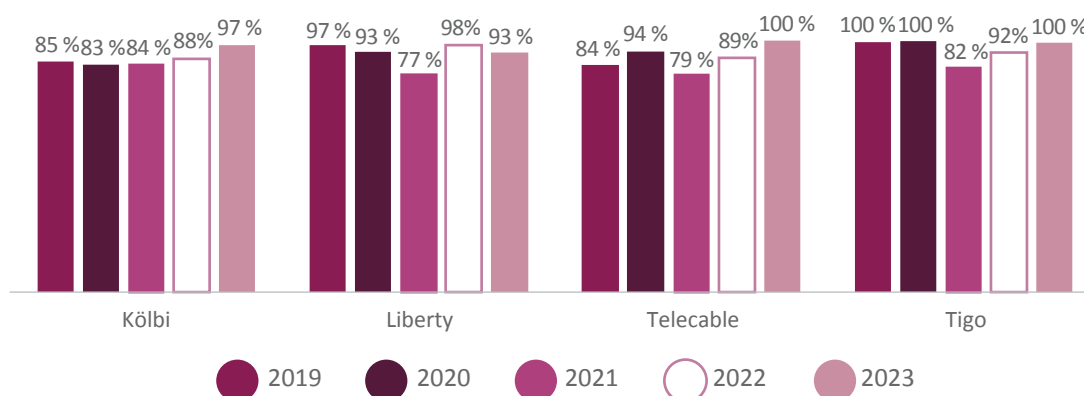
Source: SUTEL, Directorate of Quality. Costa Rica, 2023.

Graph 194. Costa Rica: Download speed vs advertised subscription speed per province in 2019-2023
(figures in percentage terms)
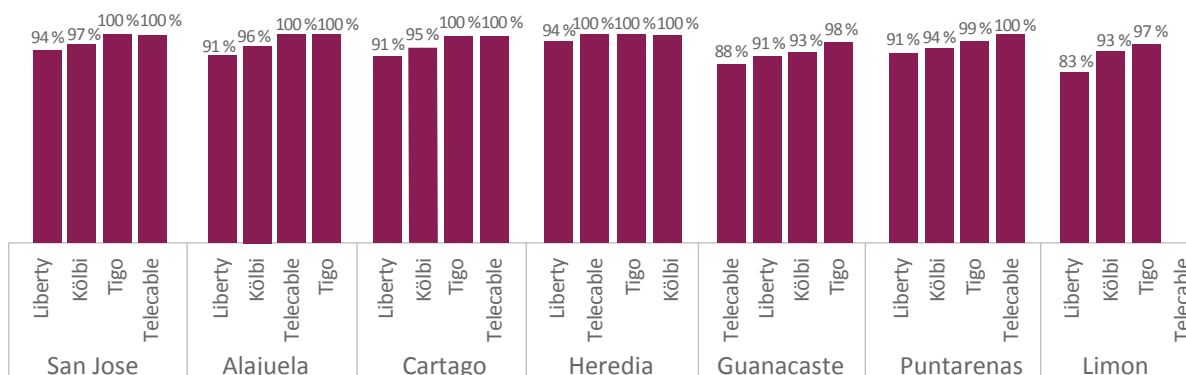
Source: SUTEL, Directorate of Quality. Costa Rica, 2023.

DGC Table 20. Costa Rica: Download speed vs advertised subscription speed per province in 2019-2023
(figures in percentage terms)

Province	Operator	2019	2020	2021	2022	2023
San Jose	Kölbi	81 %	83 %	82 %	87 %	97 %
	Liberty	97 %	94 %	77 %	98 %	94 %
	Telecable	82 %	94 %	79 %	91 %	100 %
	Tigo	100 %	100 %	87 %	93 %	100 %
Alajuela	Kölbi	86 %	84 %	86 %	90 %	96 %
	Liberty	98 %	96 %	77 %	98 %	91 %
	Telecable	86 %	89 %	82 %	83 %	100 %
	Tigo	98 %	100 %	79 %	93 %	100 %
Cartago	Kölbi	86 %	83 %	78 %	84 %	95 %
	Liberty	91 %	88 %	83 %	99 %	91 %
	Telecable	85 %	100 %	84 %	92 %	100 %
	Tigo	100 %	100 %	81 %	92 %	100 %
Heredia	Kölbi	94 %	82 %	91 %	94 %	100 %
	Liberty	100 %	93 %	80 %	99 %	94 %
	Telecable	85 %	90 %	73 %	84 %	100 %
	Tigo	100 %	100 %	83 %	92 %	100 %
Guanacaste	Kölbi	85 %	83 %	85 %	89 %	93 %
	Liberty	88 %	87 %	76 %	98 %	91 %
	Telecable	84 %	86 %	81 %	98 %	88 %
	Tigo	100 %	100 %	72 %	90 %	98 %
Puntarenas	Kölbi	91 %	84 %	81 %	83 %	94 %
	Liberty	98 %	94 %	75 %	94 %	91 %
	Telecable	88 %	93 %	82 %	88 %	100 %
	Tigo	100 %	100 %	82 %	91 %	99 %
Limon	Kölbi	80 %	85 %	89 %	89 %	93 %
	Liberty	81 %	91 %	73 %	97 %	83 %
	Telecable					
	Tigo	100 %	100 %	83 %	86 %	97 %

Source: SUTEL, Directorate of Quality. Costa Rica, 2023.

Graph 195. Costa Rica: Average sending speed vs advertised subscription speed in 2019-2023
(figures in percentage terms)

Legend: 2019, 2020, 2021, 2022, 2023
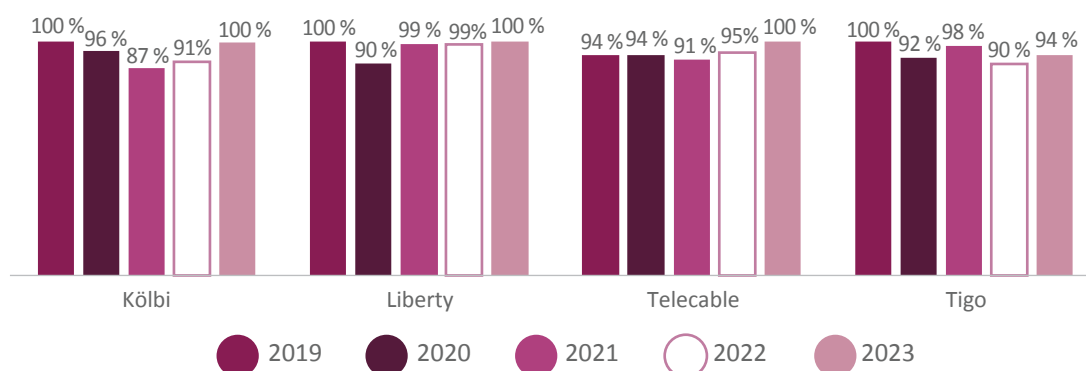
Source: SUTEL, Directorate of Quality. Costa Rica, 2023.

Graph 196. Costa Rica: Average sending speed vs advertised subscription speed per province in 2019-2023
(figures in percentage terms)
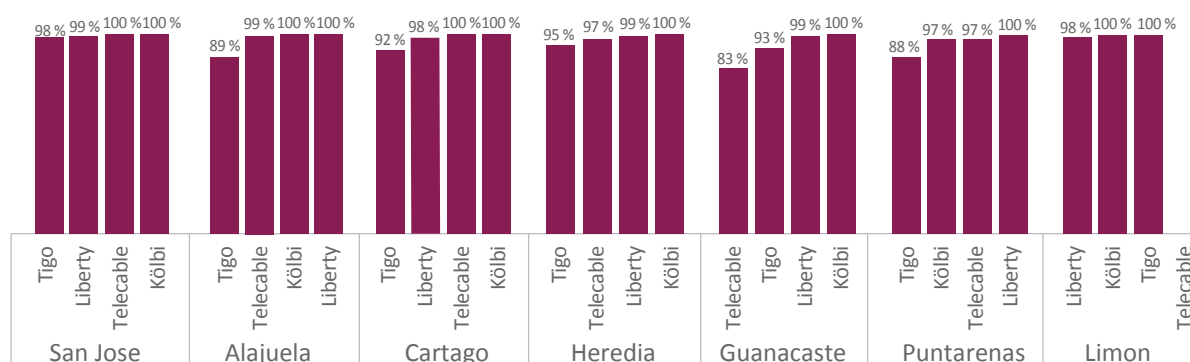
Source: SUTEL, Directorate of Quality. Costa Rica, 2023.

DGC Table 21. Costa Rica: Average sending speed vs advertised subscription speed per province in 2019-2023
(figures in percentage terms)

Province	Operator	2019	2020	2021	2022	2023
San Jose	Kölbi	100 %	100 %	89 %	90 %	100 %
	Liberty	100 %	87 %	99 %	99 %	99 %
	Telecable	93 %	95 %	91 %	92 %	100 %
	Tigo	98 %	96 %	99 %	90 %	98 %
Alajuela	Kölbi	100 %	92 %	86 %	91 %	100 %
	Liberty	100 %	88 %	99 %	97 %	100 %
	Telecable	94 %	92 %	92 %	97 %	99 %
	Tigo	100 %	90 %	98 %	88 %	89 %

Province	Operator	2019	2020	2021	2022	2023
Cartago	Kölbi	100 %	79 %	80 %	87 %	100 %
	Liberty	100 %	89 %	100 %	100 %	98 %
	Telecable	94 %	99 %	90 %	98 %	100 %
	Tigo	95 %	81 %	99 %	90 %	92 %
Heredia	Kölbi	100 %	86 %	89 %	96 %	100 %
	Liberty	100 %	98 %	99 %	99 %	99 %
	Telecable	94 %	93 %	93 %	99 %	97 %
	Tigo	100 %	94 %	99 %	90 %	95 %
Guanacaste	Kölbi	97 %	94 %	89 %	91 %	100 %
	Liberty	100 %	92 %	97 %	98 %	99 %
	Telecable	92 %	86 %	89 %	100 %	83 %
	Tigo	100 %	99 %	99 %	90 %	93 %
Puntarenas	Kölbi	100 %	88 %	86 %	89 %	97 %
	Liberty	100 %	93 %	100 %	99 %	100 %
	Telecable	97 %	98 %	96 %	98 %	97 %
	Tigo	100 %	86 %	92 %	83 %	88 %
Limon	Kölbi	100 %	100 %	89 %	89 %	100 %
	Liberty	100 %	97 %	100 %	99 %	98 %
	Telecable					
	Tigo	90 %	90 %	98 %	90 %	100 %

Source: SUTEL, General Directorate of Quality [DGC as per its acronym in Spanish]. Costa Rica, 2023..

Graph 197. Costa Rica: Measurements that coincide with the 2G coverage reported by the operator in 2022
(Figures in percentage terms)
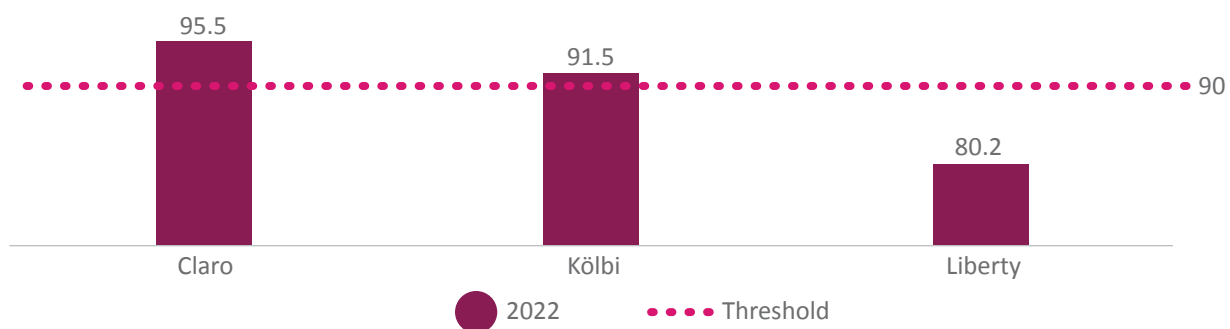
Source: SUTEL, Directorate of Quality. Costa Rica, 2023.

Graph 198. Costa Rica: Measurements that coincide with the 3G coverage reported by the operator in 2022
(Figures in percentage terms)

Claro: 89.9
Kölbi: 98.6
Liberty: 96.5
Threshold: 90

● 2022   ●●●● Threshold
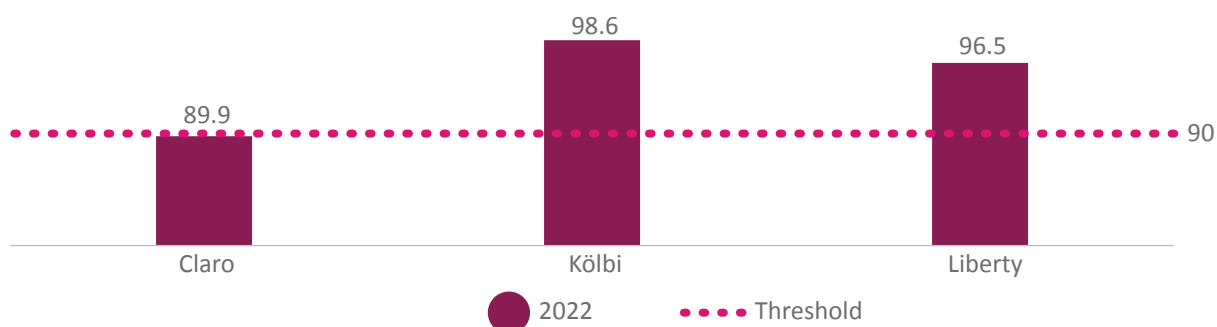
Source: SUTEL, Directorate of Quality. Costa Rica, 2023.

Graph 199. Costa Rica: Measurements that coincide with the 4G coverage reported by the operator in 2022
(Figures in percentage terms)

Claro: 75.5
Kölbi: 83.8
Liberty: 99.5
Threshold: 90

● 2022   ●●●● Threshold
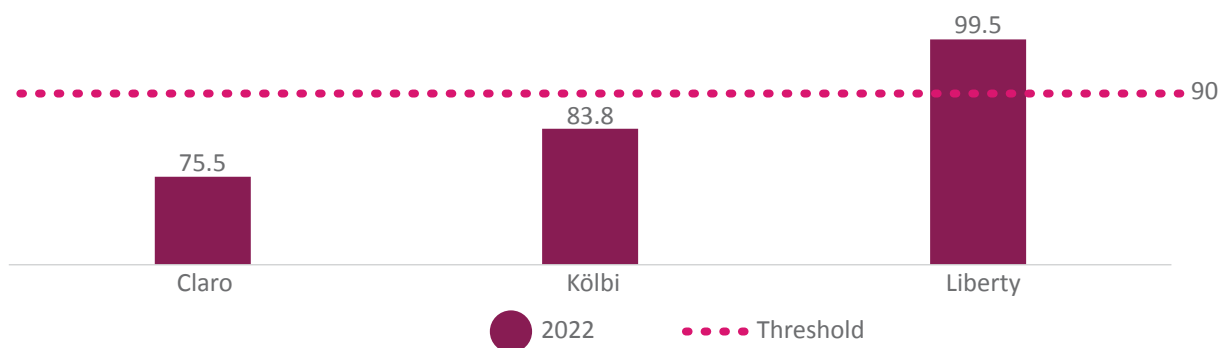
Source: SUTEL, Directorate of Quality. Costa Rica, 2023.

Graph 200. Costa Rica: Number of unsuccessful call attempts in 2022
(figures in percentage terms)

	2G			3G	
Claro	Kölbi	Liberty	Claro	Kölbi	Liberty
2.5	2.9	2.2	1.5	3.1	1.8

Threshold: 3
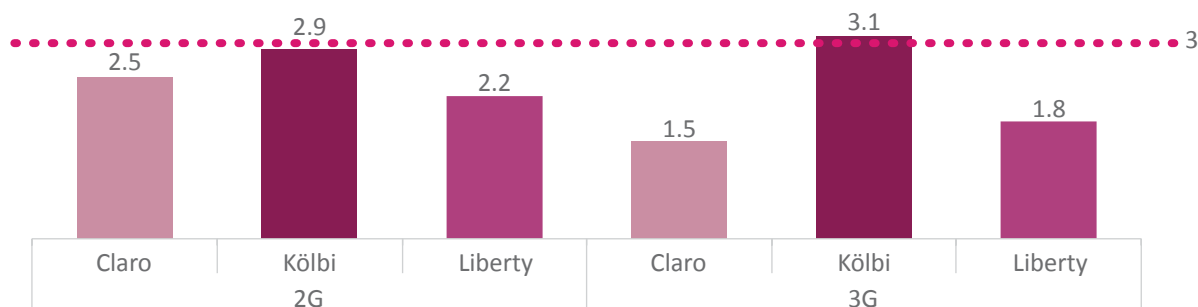
Source: SUTEL, Directorate of Quality. Costa Rica, 2023.

Graph 201. Costa Rica: Number of dropped calls in 2022
(figures in percentage terms)

	2G			3G	
Claro	Kölbi	Liberty	Claro	Kölbi	Liberty
6.9	3.3	4.8	1.2	3.6	1.7

(dotted reference line at 2)
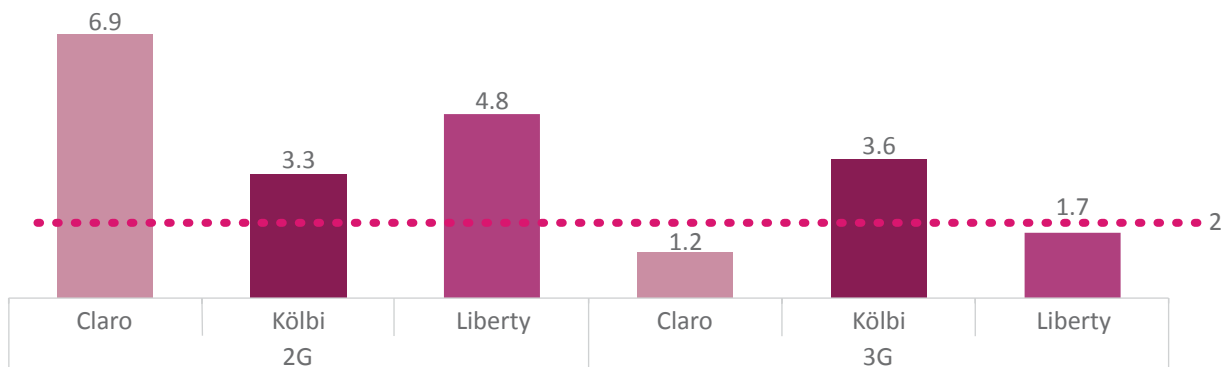
Source: SUTEL, Directorate of Quality. Costa Rica, 2023.

Graph 202. Costa Rica: Call setup times in 2022
(figures in seconds)

	2G			3G	
Claro	Kölbi	Liberty	Claro	Kölbi	Liberty
4.5	3.4	4.6	5.1	3.1	3.3

(dotted reference line at 8)
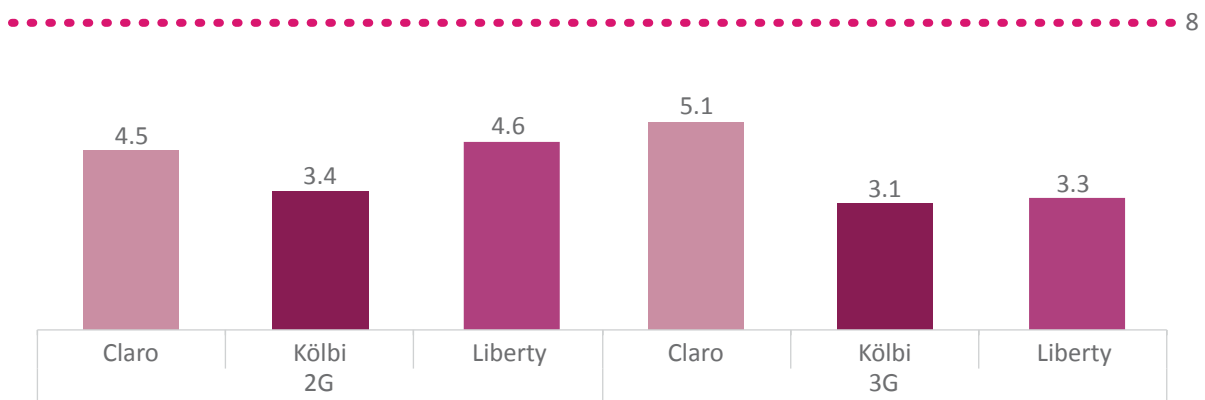
Source: SUTEL, Directorate of Quality. Costa Rica, 2023.

Graph 203. Costa Rica: Voice quality mean opinion score [MOS] in 2022
(figures are expressed on a scale of 1 to 5)

	2G			3G	
Claro	Kölbi	Liberty	Claro	Kölbi	Liberty
3.6	3	3.6	3.3	3.2	3.6

(dotted reference line at 3.5)
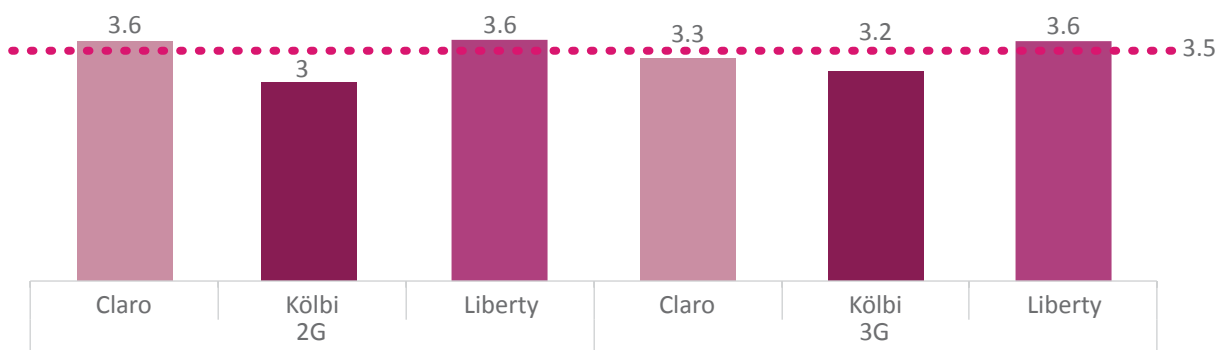
Source: SUTEL, Directorate of Quality. Costa Rica, 2023.

Graph 204. Costa Rica: Nationwide local latency in 2022
(figures in milliseconds)

	3G			4G	
Claro	Kölbi	Liberty	Claro	Kölbi	Liberty
141.8	56.6	56.5	38.2	40.9	38.4

200
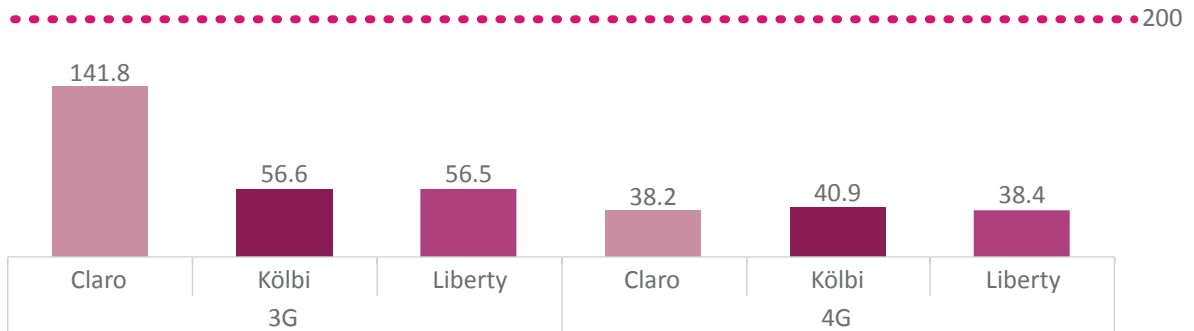
Source: SUTEL, Directorate of Quality. Costa Rica, 2023.

Graph 205. Costa Rica: Average download speed of 3G and 4G networks in 2022
(figures in Mbps)

	Claro	Kölbi	Liberty
3G	3.4	3.2	3.2
4G	16.6	18.6	11.5

● 3G   ● 4G
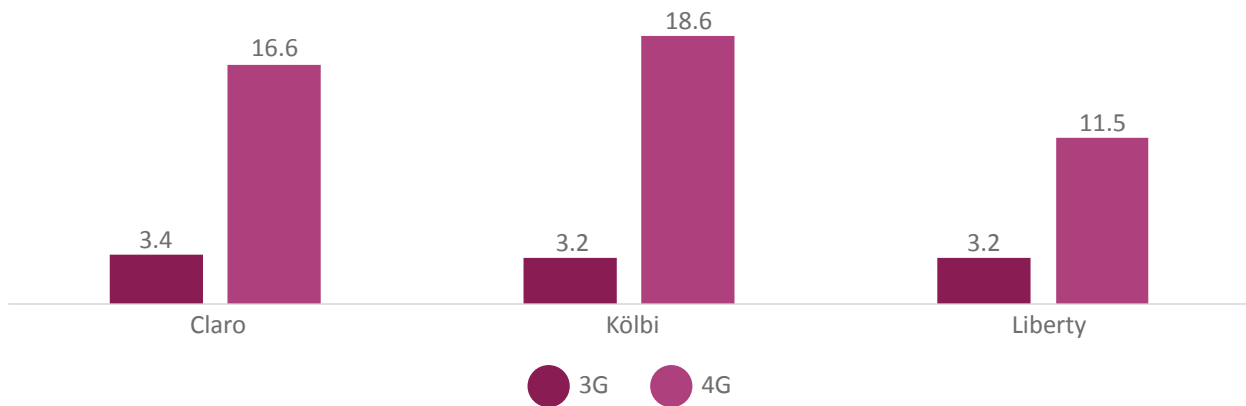
Source: SUTEL, Directorate of Quality. Costa Rica, 2023.

Graph 206. Costa Rica: Average upload speed of 3G and 4G networks in 2022
(figures in Mbps)

	Claro	Kölbi	Liberty
3G	4.5	0.9	0.5
4G	16	12.5	11.3

● 3G   ● 4G
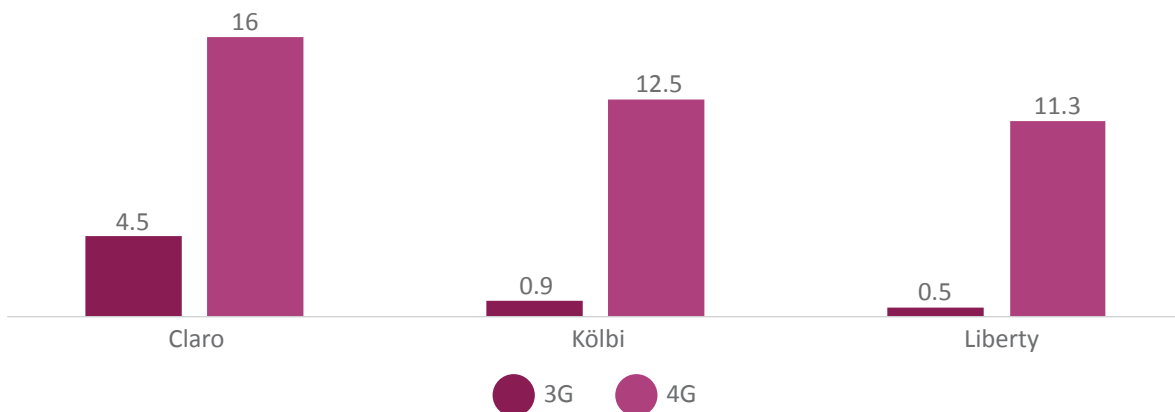
Source: SUTEL, Directorate of Quality. Costa Rica, 2023.

Graph 207. Costa Rica: Download speed in 3G networks
(figures in Mbps)

Period	Kölbi	Liberty	Claro
1st Sem 2019	3.4	2.9	2.6
2nd Sem 2019	3.6	3.1	2.8
1st Sem 2020	3.5	3.2	3.3
2nd Sem 2020	3.7	3	3.5
1st Sem 2021	3.8	3.5	3.7
2nd Sem 2021	4.4	5.2	6.6
1st Sem 2022	4.8	5.7	7.4
2nd Sem 2022	4.7	5.7	8.3
1st Sem 2023	4.1	5.4	4.6
2nd Sem 2023	4.1	6.3	4.4
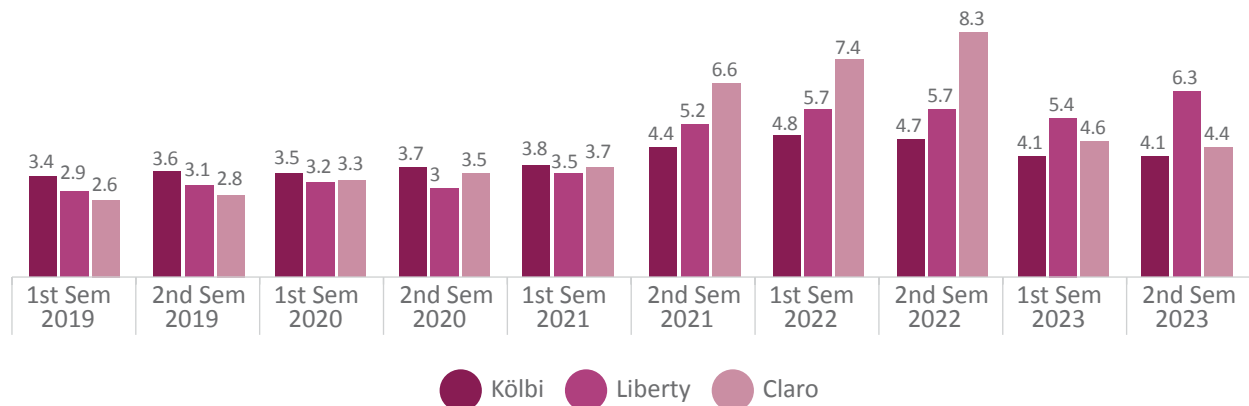
Source: SUTEL, Directorate of Quality. Costa Rica, 2023.

Graph 208. Costa Rica: Download speed in 4G networks
(figures in Mbps)

Period	Kölbi	Liberty	Claro
1st Sem 2019	23.5	9.8	13.8
2nd Sem 2019	26	10	12.9
1st Sem 2020	26.3	10.6	13.7
2nd Sem 2020	33	10.3	15.8
1st Sem 2021	30.8	9.2	19
2nd Sem 2021	30.7	10	22.3
1st Sem 2022	29.6	9.8	21.3
2nd Sem 2022	28.6	9.9	24.1
1st Sem 2023	26.8	15.6	28.7
2nd Sem 2023	27.1	17.2	29
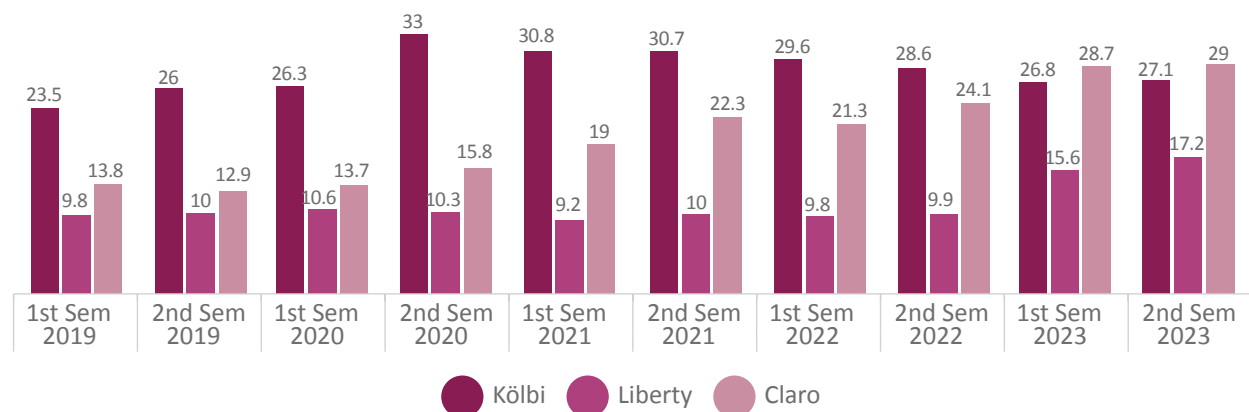
Source: SUTEL, Directorate of Quality. Costa Rica, 2023.

Graph 209. Costa Rica: Percentage of time spent connected to 4G networks
(figures in percentage terms)

Period	Kölbi	Liberty	Claro
1st Sem 2018	61 %	69 %	46 %
2nd Sem 2018	63 %	70 %	46 %
1st Sem 2019	69 %	70 %	54 %
2nd Sem 2019	70 %	74 %	65 %
1st Sem 2020	74 %	79 %	76 %
2nd Sem 2020	67 %	77 %	78 %
1st Sem 2021	70 %	81 %	84 %
2nd Sem 2021	67 %	81 %	85 %
1st Sem 2022	69 %	83 %	86 %
2nd Sem 2022	67 %	83 %	87 %
1st Sem 2023	69 %	85 %	89 %
2nd Sem 2023	68 %	84 %	90 %
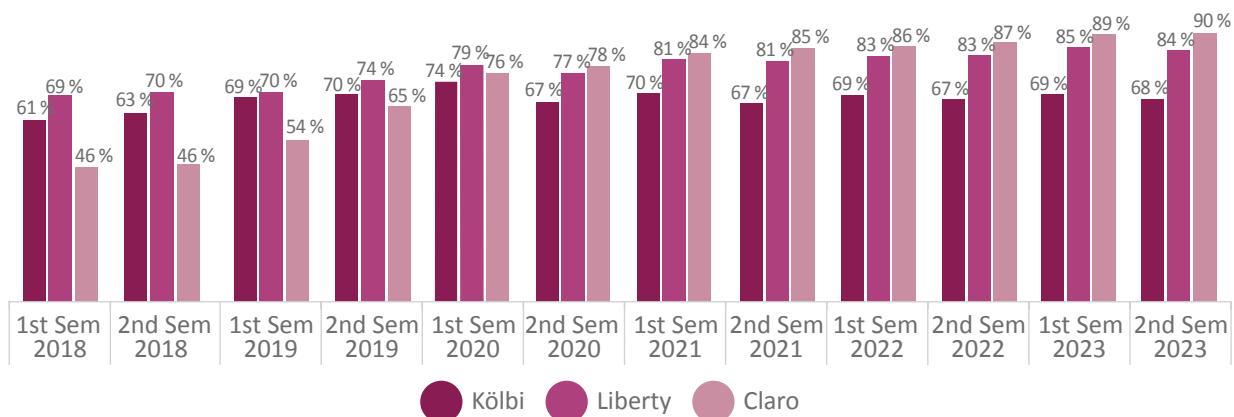
Source: SUTEL, Directorate of Quality. Costa Rica, 2023.

) FONATEL

2023

Kokotsakubata Education Center,
Duchii Indigenous Territory

AGGREGATE RESULTS

In 2023, the Superintendency of Telecommunications [SUTEL] celebrated 11 years of coordinating programs and projects in an effort to bridge the digital divide in accordance with the objectives set forth in the General Telecommunications Act [LGT as per its acronym in Spanish], Act No. 8642, and the goals and priorities of public policy established in the National Telecommunications Development Plan [PNDT as per its acronym in Spanish].

The portfolio of programs and projects of the National Telecommunications Fund [FONATEL] is currently comprised of 5 programs and 34 projects, which range from the provision of subsidies for expanding access to telecommunication services to the dispensing of devices and technological solutions for the use and enjoyment of these services by the target population. The logical framework of the programs and projects funded with FONATEL resources impacts the level of access, reduces the digital divide gap, and indirectly raises awareness of this framework.

The findings shown below summarize the results of the Connected Communities Program, the Connected Households Program, the Provisioned Public Centers Program, the Connected Public Spaces Program, and the Bicentennial Education Network Program from 2015 to 2023[55].

Goal achievement indicators of the National Telecommunications Development Plan [PNDT]

The 2022-2027 PNDT, published on December 15, 2022, contains nine goals pertaining to universal access, universal services, and solidarity (i.e.: Goals No. 3, 4, 5, 6, 7, 18, 19, 20 and 21). Of these, four were previously introduced in the 2015-2021 PNDT (i.e.:

Goals No. 3, 4, 5 and 7), and five are entirely new (i.e.: Goals No. 6, 18, 19, 20 and 21). Moreover, Goal No. 6 brings continuity to one of the results of the Connected Communities Program concerning the connectivity of the Centers for the Provision of Public Services [CPSP as per its acronym in Spanish].

The PNDT was published before an action plan[56] had been developed for Goals No. 5, 6, 7, 18, 19, 20 and 21. In addition, despite significant efforts by SUTEL to ensure that the sector's planning instrument is completed and signed by the institutions responsible for these goals, the only action plans that have been finalized are in relation to Goals No. 3, 4 and 18. SUTEL and FONATEL are solely responsible for two of these three goals (i.e.: Goals No. 3 and 4), while the remaining goal (i.e.: Goal No. 18) is the joint responsibility of the SUTEL, the FONATEL, the Education and Nutrition Centers, and the Children's Comprehensive Care Centers [CEN-CINAI as per its acronym in Spanish].

In light of the above, the progress percentage for each of the 2022-2027 PNDT's annual and overall goals was recorded in 2023:

- Goal No. 3: 93 % of the annual goal has been completed, and 58 % of the 2026 overall goal has been completed. The action plan has been signed and slated for 2023.

- Goal No. 4: 49 % of the 2027 overall goal has been completed. The action plan has been signed, but the timetable for 2023 has not been decided.

- Goal No. 5: 27 % of the 2027 overall goal has been completed. The action plan has not been signed, and the timetable for 2023 has not been decided, due to pending information from the MEP. The progress made thus far is the result of ongoing efforts made as part of the 2015-2021 PNDT's Goal No. 14.

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[55] See the description for FONATEL programs provided in the "Methodology" section of this report.
[56] In accordance with the methodology of the Monitoring, Evaluation, and Modification processes of the 2022-2027 PNDT: "The Ministry of Science, Innovation, Technology and Telecommunications [MICITT as per its acronym in Spanish] is responsible for defining and designing a template for a Goal's Action Plan, which is a tool that is used to implement said goals and to serve as a foundation for the M&E processes assigned to the MICITT". [M&E = Monitoring and Evaluation] A proper definition for "action plan" is not provided in the "Methodology" section of this report. However, an action plan is a document that defines the scope of a goal, namely: description, objectives, legal basis, methodology, timetable, budget, monitoring indicator, risks, and the roles and responsibilities of the stakeholders.

- Goal No. 6: 99 % of the annual goal has been completed, and 40 % of the 2027 overall goal has been completed. The action plan has not been signed due to pending information from the MICITT. However, the timetable for 2023 has been decided. The progress made thus far is the result of CPSP connectivity efforts made as part of the 2015-2021 PNDT's Goal No. 1.

- Goal No. 7: 84 % of the annual goal and the 2023 overall goal has been completed. The goal is expected to be 100 % complete by April 2024. The action plan has not been signed due to pending information from the IMAS. However, the timetable for 2023 has been decided. The progress made thus far is the result of ongoing efforts made as part of the 2015-2021 PNDT's Goal No. 43.

- Goal No. 18: 15 % of the 2024 overall goal has been completed. The progress made thus far is the result of ongoing efforts made as part of the 2015-2021 PNDT's Goal No. 9. The action plan has been signed and the Invitation to Bid [ITB] document has been prepared, but the timetable for 2023 has not been decided.

- Goals No. 19 and 20: The action plan has not been signed, and the timetable for 2023 has not been decided, due to pending clarification by the National Council for Persons with Disabilities [CONAPDIS as per its acronym in Spanish] and the National Resource Center for Inclusive Education [CENAREC as per its acronym in Spanish] in terms of the scope of engagement. There was no progress in 2023.

- Goal No. 21: 75 % of the overall goal has been completed. The progress made thus far is the result of ongoing efforts made as part of the 2015-2021 PNDT's Goal No. 9. The action plan has not been signed and the timetable for 2023 has not been decided. The scope of engagement of the MICITT is pending.

Table 22 shows the progress percentage of the goals set forth in the 2022-2027 PNDT that were assigned to FONATEL. It includes the nine goals pertaining to universal access, universal services, and solidarity, their respective descriptions, the goals in progress per year, and the advancements made in 2021, in addition to the progress percentages of the annual and overall goals. This table does not include the progress percentages of Goals No. 5 and 13, which were set forth in 2015-2021 PNDT, as this document is no longer in effect. However, the subsidies provided in accordance with the scope of both of these projects are in the "in-progress" phase.

Management indicators

As previously stated, FONATEL has five programs and 34 projects in different phases of the development life cycle[57]. There are four fewer projects in relation to 2022. These four projects were previously in the "in-planning" phase and were intended to bring connectivity to several districts in the Central Region. The projects were not included, however, as the connectivity of these districts will be carried out through the 5G spectrum bidding process, in accordance with the public policy objectives and guidelines given to the SUTEL by the Ministry of Science, Innovation, Technology and Telecommunications [MICITT]. These projects were not included for the aforementioned reasons and, once the bidding process is completed, an analysis will be carried out as to whether it is necessary to incorporate said projects within the FONATEL framework to ensure coverage of the 134 districts prioritized by the MICITT.

Of the 34 ongoing projects, 28 (82 %) form part of the Connected Communities Program, whose objective is to provide connectivity to rural and low-income areas. In total, there are 30 projects in the "In-progress" phase, 1 in the "In-planning" phase, and 3 in the "in-closing" phase (see Graph 210). The Roxana

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[57]   For more information on the different phases of the development life cycle of programs and projects, please refer to the Methodology and Scope section of this report about the monitoring and evaluation system of programs and projects financed with FONATEL resources, and the achievement of goals set forth in the National Telecommunications Development Plan.

and Pacuarito projects of the Connected Communities Program, which were awarded to ICE and Liberty (formerly Telefónica)[58], respectively, have been completed. In addition, the Provisioned Public Centers Program was expanded. Even though the projects in Guatuso and Los Chiles, which were awarded to Telefónica [currently known as "Liberty"][59], were declared in-closing phase in 2020, they were nonetheless extended by an additional year in May 2021[60]. This allowed Liberty to provide connectivity to 8 additional districts, and 132 different Centers for the Provision of Public Services [CPSP as per its acronym in Spanish], during the additional 12-month period. This project was permanently closed in 2022. For this reason, the data on the number of subscriptions to telecommunication services gained due to the infrastructure deployed under this project is not included.

In total, the five programs under development with FONATEL resources had projects in 491[61] of the existing 492 districts, which represents approximately 100 % of the total districts in the country. Of the total number of districts with ongoing FONATEL programs, 3 % have a single program in progress, 17 % have two programs in progress, 47 % have three programs in progress, 23 % have four programs in progress, and 11 % have five programs in progress (see Graph 211). This is important considering that all programs complement each other in providing solutions to bridge the digital divide across various communities.

In 2023, a total of 310 201 devices for accessing and using ICTs were provided with FONATEL resources through the Connected Households Program and the Provisioned Public Centers Program, which represented an increase of 3 % in relation to 2022 (see Graph 212), thereby providing broadband solutions to bridge the digital divide in a comprehensive manner. Moreover, FONATEL was able to bring the Connected Communities Program, the Provisioned Public Centers Program, and the Bicentennial Education Network Program to a total of 8930 Centers for the Provision of Public Services [CPSP], which represented an increase of 5 % (+400 more centers) in relation to 2022 (see Graph 213).

Beneficiaries indicators

The Connected Communities Program and the Connected Households Program have helped to increase connectivity in low-income areas, and in regions with little to no connectivity that are not very profitable for telecommunication operators and service providers (i.e.: rural areas, areas with low population density, indigenous territories, etc.) and with low-income population segments.

> By year-end 2023, 515 835 households[62] (29 % of the total households) were reported to have benefited from this program,

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[58]   The projects under the Connected Communities Program were awarded to Telefónica. This operator merged with Cabletica to form Liberty in 2022. The operator named in the documentation pertaining to the awarding and execution of these projects is Telefónica. Instead of updating the name, it is noted that the operator is currently known as Liberty.
[59]   Idem
[60]   The projects in Guatuso and Los Chiles were extended for an additional year by way of an addendum to the original contract, which was signed on May 17th, 2021.
[61]   Districts with at least one project under development due to a program funded by FONATEL with (total or partial) connectivity to voice and data services, or with at least one household who has benefited from an Internet service subsidy and a device with which to use this service, or with a CPSP that has devices for accessing and using ICTs, or with a free Internet access zone, or with an education center connected to the Bicentennial Education Network.
[62]   The number of households per district with access to voice and data services due to the Connected Communities Program is estimated by dividing the total population of the districts with (total or partial) connectivity to voice and data services provided through this program, which is determined on the basis of the projections published by the National Institute of Statistics and Censuses [INEC], by the total number of people per household as estimated in the National Household Survey [ENAHO], to wit: people per household: 3.31 (2015), 3.27 (2016), 3.24 (2017), 3.20 (2018), 3.16 (2019), 3.19 (2020), 3.10 (2021), 3.03 (2022) and 2.96 (2023). If a given district has at least one project under development due to the Connected Communities Program and/or the Connected Households Program, only the total number of households in the district will be considered for calculation purposes.

representing 1 758 452 inhabitants (33 % of the total population) who have been provided access to voice and data services in districts where FONATEL programs are being developed

(see Graph 214). This represents an increase of 2 % in the number of households, and a decrease of 1 % in the number of inhabitants[63], with access to voice and data services due to FONATEL programs in relation to 2022.

The resources provided by FONATEL to the different programs under development were invested to universalize telecommunication services, and to expand access to these services nationwide. With the resources invested as of 2023, these projects have yielded 5679 additional fixed telephony subscriptions and 269 417 additional fixed Internet subscriptions. This represents an increase of 2% in fixed telephony subscriptions, and an increase of 9% in fixed Internet subscriptions, in relation to 2022 (see Graph 215).

The above results imply that 15 out of every 100 housing units nationwide have fixed voice and data services because of programs developed with FONATEL resources, increasing the market penetration of fixed telephony services by 0.9 %, and the market penetration of fixed Internet services per housing unit by 23.4 %.

Mobile subscriptions acquired due to the telecommunication infrastructure subsidized with FONATEL resources increased to 97 519 in 2023, which represents a decrease of 2 % in relation to 2022.

In total, by year-end 2023, 1 304 195 people were benefited from the use of voice and data services due to programs funded with FONATEL resources, an increase of 5 % in relation to 2022 (see Graph 216). This means that FONATEL programs benefit approximately 25 % of the total population in Costa Rica.

Financial indicators

The total equity of the Fund as of December 2023 was reported to be 104 921 million colones, a decrease of 52 250 million colones in relation to 2022 (see Graph 217). This represents a decrease of 33.2 % in equity, largely due to the greater disbursement of investments in 2023 in relation to 2022, which is, essentially, the ultimate purpose of the fund; i.e.: to execute investments in order to bridge the digital divide.

According to the most recent data provided by the Ministry of Finance as of December 2023, the Special Parafiscal Contribution [CEPF as per its acronym in Spanish] in 2023 totaled 14 285 million colones, which represented an increase of 3886 million colones (37 %) (see Graph 218).

The investments made to further the objectives of the programs under development reached 49 054 million colones during the year, which represents a decrease of 6721 million colones (12 %) in relation to 2022 (see Graph 219). The aforementioned decrease can be attributed to the following aspects:

a) The projects carried out under the Connected Communities Program are nearly to complete the entirety of the planned telecommunications infrastructure specified in the 2015-2021 PNDT's Goals No. 1 and 2, and the 2022-2027 PNDT's Goal No. 3.

b) The 134 districts identified by the MICITT in the 2022-2027 PNDT will be provided coverage within the framework of the 5G spectrum bidding process.

c) The extension of the Provisioned Public Centers Program has concluded, as have the subsidies of the first free Internet access zones [ZAIG as per its acronym in Spanish] made available under the Connected Public Spaces Program.

d) There are six goals without a signed action plan; i.e.: SUTEL/FONATEL requires clarification about the scope of engagement. Even though

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[63]   This decline can be attributed to a decrease in the number of users connected to free Internet access zones [ZAIG as per its acronym in Spanish] made available under the Connected Public Spaces Program, and in the number of users connected to the Bicentennial Education Network.

the SUTEL was able to move forward with projects pertaining to two of these goals in 2023 (i.e.: Goals No. 5 and 7), because these goals were set forth in the previous PNDT, progress has been limited due to the method in which information about the target population is sent to the SUTEL. It is imperative to have these action plans in place, not only to expedite attainment of the PNDT's annual goals, but to ensure that the overall goals will be achieved.

e) ICE's non-compliance with the accounting deliverables of the projects awarded under the 2015-2021 PNDT's Goal No. 1.

f) Delays in the verification processes of free operating cash flow and financial audits due to a change of Trustee from Banco Nacional de Costa Rica to Banco de Costa Rica.

The cumulative investment made over the last 10 years (2013-2023) in relation to management of programs and projects developed with FONATEL resources reached an aggregate nominal value of 240 881 million colones, which is equivalent to 52 % of the total budget allocated for these programs (see Graph 219). The remaining portion of the total budget allocated for FONATEL programs (48 %) is reserved for financing initiatives related to the maintenance of the subsidy terms established in each of the programs. Financial commitments arising from FONATEL programs are estimated to reach 190 432 million colones in 2027. This would exceed the equity of the fund by 85 511 million colones. The deficit between FONATEL's financial commitments and its equity must be offset with new resources by increasing the Special Parafiscal Contribution.

Resources were invested into each of the five programs in 2023, with the Connected Households Program reporting the largest investment of financial resources during that period, to wit: 115 285 million colones were invested between 2016 and 2023. This represents approximately 48 % of the total resources invested by FONATEL into the portfolio of programs and projects since 2013 (240 881 million colones in investments) (see Graph 220).

The FONATEL resources that were allocated in 2023 were distributed among 12 different network operators and service providers, namely: Telecable S. A. (Telecable), Liberty Communications of Costa Rica LLC (Liberty), Millicom Cable Costa Rica S. A. (Tigo), Instituto Costarricense de Electricidad (ICE), Claro CR Telecomunicaciones S. A. (Claro), Cooperativa de Electrificación Rural de San Carlos R. L. (Coopelesca), Cooperativa de Electrificación Rural de Los Santos R. L. (Coopesantos), Cooperativa de Electrificación Rural de Zarcero R. L. (Coopealfaroruiz), Cooperativa de Electrificación Rural de Guanacaste R. L. (Coopeguanacaste), Servicios Femarroca (Teki or Cable Pacayas), Radiográfica Costarricense S.A. (RACSA), and Cable Caribe S.A. (Cable Caribe). Cinema Turrialba S.A. (Cablenet) became an Internet provider under the Connected Households Program [PHC as per its acronym in Spanish] since December 2023. The company did not, however, use any FONATEL funds during that year.

RACSA spent the most financial resources in 2023, and from 2013 to 2023, to wit: 18 684 million colones (38 %) and 59 426 million colones (25 %), respectively. Followed by: Telecable with 9389 million colones (19 %) in 2023 and 45 393 million colones (19 %) from 2013-2023, ICE with 4848 million colones (10 %) in 2023 and 44 194 million colones (18 %) from 2013-2023 (see Graph 221).

RESULTS PER PROGRAM

The main results, from 2019 to 2023, of the performance evaluations of each program in FONATEL's portfolio are presented below.

Rey Curré Indigenous Territory

Connected Communities Program [PCC]

Goal achievement indicators of the National Telecommunications Development Plan [PNDT]

The 2022-2027 PNDT will continue to pursue the 2015-2021 PNDT's Goals No. 1 and 2 through Goals No. 3 and 4, respectively, in an effort to expand coverage in 24 indigenous territories across the country, and in 262 low-income districts with the purpose of deploying telecommunications infrastructure.

> From 2013 to 2023, the Connected Communities Program has provided telecommunication services to 128 districts and 13 indigenous territories nationwide,

providing a total of 14 territories with telecommunication services thanks to this program, namely: Cabagra, Këköldi, Salitre, Talamanca Bribrí, Curré, Talamanca Cabécar, Tayní, Ujarrás, Chirripó Duchii,

Matambú, Guatuso, Altos de San Antonio, Conteburica and Quitirrisí (covered under commercial offers without FONATEL intervention)[64]. These results suggest that 93 % of Goal No. 3 was completed in 2023, which represents 58 % of the 2026 overall goal (see Graph 222). In addition, 49 % of the 2022-2027 PNDT's Goal No. 4 was completed (see Graph 223). In order to serve the remaining 134 districts listed under Goal No. 4, the SUTEL is planning and preparing a new bidding process for the following radio spectrum bands: 700 MHz, 850 MHz, 1800 MHz, 1900 MHz, 2100 MHz, 2300 MHz, 2600 MHz, 3330 MHz, 3400 MHz, 3500 MHz, 3600 MHz, 3700 MHz, 26 GHz and 28 GHz. This would allow for the deployment of 5G networks and would include an obligation to cover the 700 MHz band in these districts.

The districts with (total or partial) connectivity that were given access to voice and data services due to this program are spread across the peripheral regions of the country and throughout all seven provinces (see Map 2). The indigenous territories with (total or partial) connectivity that were given access to voice and data services are spread across the northern and southern regions of the country (see Map 3). There was an upward trend in the number of indigenous territories included in this program in 2023, increasing by 4 territories , rising from 9 to 13 total territories in relation to 2022, along with an additional territory that was included as a result of the market development in Quitirrisí[65]. 26 % of all districts nationwide have been provided access to voice and data services through this program (see Graph 224).

128 districts have benefited from the first project under the Connected Communities Program. The distribution of these districts per region is as follows: 40 districts in the Chorotega Region (31 %), 30 districts in the Brunca Region (23 %), 25 districts in the Huetar Norte Region (20 %), 19 districts in the Huetar Caribe Region (15 %), and 14 districts in the Pacífico Central Region (11 %) (see Graph 225).

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[64]   The Quitirrisí indigenous territory has access to telecommunication services despite not being part of a FONATEL program. This is the result of organic growth and the expansion of market services. The SUTEL, however, is planning to conduct on-site inspections to determine if FONATEL resources are required to ensure that the entire population in this territory has access to telecommunication services.
[65]   This territory is included as part of the baseline to determine the number of districts with access to telecommunication services. However, it should be noted that FONATEL resources have not been used to provide support in this territory.

The Connected Communities Program consists of 28 projects; four less than in 2022. The number of projects under the Connected Communities Program remained largely unchanged from 2021 to 2022. In 2023, however, four projects in the Central Region, which were in the "in-planning" phase, were omitted from the results because the districts that were to be served under these projects will be provided coverage within the framework of the 5G spectrum bidding process.

Two projects[66] that had been completed in 2020 were extended in 2021. This resulted in an increase of 8 % in the number of projects in the "In-progress" phase between 2020 and 2021, and a decrease of 50 % in the number of "in-closing" phase projects (see Graph 226). The projects in the "In-progress" phase continue to represent the majority (93% of the total projects under this program).

30 additional telecommunication towers were made operational in 2023 due to the Connected Communities Program, reaching a total of 681 towers[67] and representing 11 % of the total number of towers nationwide. This brought connectivity to 128 districts and 13 indigenous territories across the country. The infrastructure made available in 2023 represented an increase of 5 % in the number of towers in operation in relation to 2022. This increase was largely due to the progress made in projects located in the Brunca, Huetar Caribe, Chorotega and Central Pacific regions, particularly within indigenous territories (see Graph 227).

21 telecommunication towers were made operational in indigenous territories in 2023, bringing the total number of telecommunication towers deployed in these territories through the Connected Communities Program to 51. This represents an increase of 70 % in relation to 2022 (see Graph 228). Most of the towers in operation (80 %) provide coverage to the Bribrí, Cabécar, and Guaymi ethnic groups.

One of the objectives of the projects under this program is providing connectivity to Centers for the Provision of Public Services [CPSP], which showed an increase of 5 % in 2023 in relation to 2022. This means that 88 additional CPSPs have been provided connectivity with FONATEL resources. In total, over the course of 5 years, this program has subsidized the connection and monthly consumption of fixed voice and data services of 1916 CPSPs from 2013 to 2023. Of these CPSPs, 1744 (91 %) are education centers of the Ministry of Public Education [MEP], 103 (5 %) are Education and Nutrition Centers and Children's Comprehensive Care Centers [CEN-CINAI] managed by the Ministry of Health, 39 (2 %) are Periodic Visiting Posts [PVP] of the Social Security Administration of Costa Rica [CCSS], and 30 (2 %) are Intelligence Community Centers [CECI] managed by the Ministry of Science, Innovation, Technology and Telecommunications [MICITT] (see Graph 229). 21 CPSPs in indigenous territories benefited from this program in 2023, reaching a total of 69 CPSPs from 2016 to 2023. These results represent an increase of 44 % from 2022 to 2023 (see Graph 230).

Beneficiaries indicators

The infrastructure that was made operational under the Connected Communities Program has increased universal access to telecommunication services, by providing a larger number of inhabitants with access to voice and data services in geographic areas where the cost of installing and maintaining the telecommunications infrastructure makes the provision of these services unprofitable for operators and providers as rural areas and indigenous territories.

128 districts and 966 467 inhabitants were provided access to voice and data services in 2023,

which represents an increase of 1 %, or 11 207 inhabitants, in relation to the previous year. The increase in

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66 Guatuso (Contract No. 005-2013) and Los Chiles (Contract No. 006-2013).
67 This includes newly constructed towers and preexisting towers that were made operational with new equipment.

coverage in these districts made it possible to extend this benefit to 326 621 housing units, which represents an increase of 10 991 (3 %) in relation to 2022 (see Graph 231).

140 528 subscriptions were provided under the Connected Communities Program in 2023, which represents an increase of 850 subscriptions (1 %) in relation to 2022. The number of subscriptions mentioned above includes fixed voice and data services and mobile telephony services. With that in mind, it should be noted that the projects that were awarded under the Connected Communities Program originally stipulated that extending the coverage of fixed telephony and fixed Internet services was a contractual obligation.

In some of these areas, however, the operators who were awarded the project implemented a convergent solution that allowed for the provision of fixed and mobile telecommunication services. In accordance with the amendment made by MICITT to the 2015-2021 PNDT, and in furtherance of provision 4.5 set forth in report DFOEIFR-IF-0001-2020 of the Office of the Comptroller General of the Republic [CGR], the Board of Directors of SUTEL instructed the trustee of the trust, and its management units, to include mobile telephony services as part of these projects as of September 2020.

An analysis of the number of users per type of service revealed that, in 2023, subscriptions to fixed voice and data services increased in relation to 2022, whereas subscriptions to mobile telephony services decreased as detailed below:

- 5679 fixed telephony subscriptions were reported in 2023, which represents an increase of 577 (11 %) subscriptions in relation to 2022 (see Graph 232).

- 37 330 fixed Internet subscriptions were reported in 2023, which represents an increase of 2152 (6 %) subscriptions in relation to 2022 (see Graph 232).

- 97 519 mobile Internet subscriptions were reported in 2023, which represents a decrease of 1879 (2 %) subscriptions in relation to 2022 (see

Graph 233). This decrease can be attributed to the lack of data reported by Telefónica (currently known as Liberty) in Guatuso.

In 2023, the subscriptions to fixed telephony and fixed Internet services provided under the Connected Communities Program contributed to an increase in market penetration nationwide of 0.9 % and 3.2 %, respectively (see Graph 234).

Similarly, the subscriptions to mobile telephony services provided with infrastructure subsidized with FONATEL resources reported a market penetration of 1.9 %, which is equivalent to 1.3 % of the country's total market penetration (see Graph 233).

An analysis of the percentage share of fixed services (voice and data) per planification region revealed that, in 2023, approximately half (45 %) of all fixed Internet subscriptions provided under the Connected Communities Program were recorded in the Huetar Norte region, where five different projects were awarded to, and are being developed by, Telefónica (currently known as Liberty) and Claro. The number of subscriptions to this service in this region, however, showed a slight decrease, falling from 16 869 subscriptions in 2022 to 16 647 subscriptions in 2023, which represents a decrease of 1 % (222 subscriptions).

In 2023, the fixed Internet subscriptions in all regions, with the exception of the Huetar Norte region, showed an upward trend in relation to 2022 due to the Connected Communities Program. The Chorotega Region reported the most relative growth (i.e.: 23 %) with an increase of 368 subscriptions, going from 1613 subscriptions to 1981 subscriptions. This was closely followed by the Huetar Caribe and Pacífico Central regions, with an increase of 18 % (1585 subscriptions) and 17 % (163 subscriptions), respectively (see Graph 235).

In regard to the fixed telephony services provided through this program in 2023, the Chorotega, Pacífico Central, and Huetar Caribe regions showed an increase in the number of subscriptions to this service in relation to 2022, growing by 23 % (368 subscriptions), 15 % (163 subscriptions), and 16 % (204 subscriptions), respectively. The Chorotega Region reported the largest number of subscriptions to this service (35 % of the total) (see Graph 236).

The mobile service subscriptions provided under the projects financed by the Fund were marketed in the Huetar Norte, Huetar Caribe and Brunca regions. The number of subscriptions to this service in the Huetar Norte Region increased by 1290 subscriptions (7 %) in 2023, while the number of subscriptions in the Brunca Region increased by 2489 subscriptions (9 %) in relation to 2022. The only region that reported a decrease was the Huetar Caribe Region, with a decrease of 11 % (5651 subscriptions) from 2022 to 2023 (see Graph 237).

210 738 inhabitants have been benefited with fixed and mobile services subscription under the Connected Communities Program, which, by year-end 2023, represents 4 % of the country's total population. The results mentioned above represent an increase of 1 % (12 621 inhabitants) in relation to 2022 (see Graph 238).

Financial indicators

The Connected Communities Program reported an investment of 2904 million colones in 2023 (6 % of the total investment made by FONATEL in that year), totaling a cumulative investment of 40 674 million colones from 2013 to 2023.

The allocation of investments made in 2023 under this program, per operator, is as follows: Claro was awarded 1683 million colones (58 %), ICE was awarded 1129 million colones (39 %), Liberty was awarded 65 million colones (2 %), and Telecable was awarded 27 million colones (1 %). Of the operators mentioned above, only Liberty reported an increase in the number of FONATEL resources allocated from 2022 to 2023, in the amount of 40 million colones (161 %).

ICE and Claro reported a decrease of 79 % (4150 million colones) and 13 % (256 million colones), respectively.

The cumulative investment made under this program since its inception in 2013 amounts to 40 674 million colones, which represents 17 % of the total cumulative investment made by the Fund in furtherance of its programs (see Graph 239).

Connected Households Program [PHC as per its acronym in Spanish]

Goal achievement indicators of the National Telecommunications Development Plan

This program has two projects in the "in-progress" phase. The first of these two projects was started on June 6th, 2016, in furtherance of the 2015-2021 PNDT's Goal No. 5. The goal was carried out at 100 % in the first half of 2023, providing 186 558 households with a subsidy based on the quintile of household income, for a period of 5 years, for the purpose of acquiring Internet services with a speed of 5/1 Mbps and a laptop computer. This subsidy is currently applied to the monthly bill of each beneficiary household, over a period of 5 years until 2028, in accordance with the date on which each household enters the program.

The second of these two projects, which was carried out in furtherance of the 2015-2021 PNDT's Goal No. 7, seeks to provide 100 684 socioeconomically vulnerable households, with at least one student duly enrolled in the Costa Rican public education system, with a subsidy based on the quintile of household income, over a period of 3 years, for the purpose of acquiring Internet services with a speed of 5/1 Mbps. This includes any subsidy provided for the purpose of acquiring a "MIFI" device, in the event that the service is provided through mobile technology. This project was started on December 28th, 2020. By year-end 2023, 84 % of the project had been completed and 84 317 households had been granted a subsidy. The project's progress percentage in 2023 increased by 44 percentage points in relation to 2022 (see Graph 240).

> Through the joint implementation of the PHC projects, 270,875 subsidies were provided, corresponding to 232,087 households in poverty conditions benefited.

Out of this total, 186 558 households (69 %) were granted a subsidy for the purpose of acquiring both a computer and Internet service for a period of five years, in accordance with the objectives of the first project, and 84 317 households (31 %) were granted a subsidy for the purpose of acquiring Internet services for a period of three years, in accordance with the objectives of the second project (see Graph 241).

The total number of households that benefited under the PHC (232 087) increased by 10 % (20 366) in relation to 2022 (211 721[68]). The second of these two projects reported the largest increase with 110 % (44 167), increasing from 40 150 households in 2022 to 84 317 households in 2023. It should be noted that 46 % (38 788) of the households that benefited from the second project under the PHC also benefited from the first project. As such, given that these households are benefiting from both projects, the subsidy granted for the purpose of acquiring Internet services will be provided for a period of 8 years. This was done in pursuance to official letter MICITT-DVT-OF-762-2021, which was issued by the Ministry of Science, Innovation, Technology and Telecommunications [MICITT] on December 14th, 2021, with the purpose of granting an extension to socioeconomically vulnerable households with at least one student duly enrolled in the Costa Rican public education system.

Of the 84 317 households that benefited from the second project under the PHC in 2023, 75 546 households (90 %) have active Internet services, which represents an increase of 119 % (40 981 households) in relation to 2022.

The first project under the PHC reported 156 new households in 2023. This small increase can be attributed to the accomplishment of the public policy goal of the project. Of the 186 558 households that benefited from the first project under the PHC, 113 972 households (61 %) have active Internet services. This represents a decrease of 21 873 households (16 %) in relation to 2022. The number of households with active Internet services has been decreasing at a faster rate since 2022. This is a direct result of the of the five-year subsidy expiration (see Graph 242).

The distribution of households that benefited under the PHC per quintile of income, variable used as a criteria for definition of the program benefited population, shows that 78 % (180 713) of the households that benefited under projects 1 and 2 of the PHC form part of the first quintile of income, while 18 % (40 795 households) form part of the second quintile of income, and 5 % (10 579 households) form part of the third quintile of income. The relative weight of the number of beneficiary households in the first quintile of income decreased by 1 percentage point from 2022 to 2023, whereas the second and third quintiles of household income increased by 2 percentage points and 1 percentage point, respectively. The changes in the percentage distribution of beneficiary households per quintile of income can be attributed to the expiration of the subsidy and the inclusion of new households under the second project of the program (see Graph 243).

It should be noted that, even though these households are categorized by quintile of income, they are all considered to be living in poverty as they have been specifically selected by IMAS from its own database.

12 Internet service providers participate in the Connected Households Program to grant households access to these services, namely: Telecable S. A. (Telecable), Liberty Communications of Costa Rica LLC (Liberty)[69], Millicom Cable Costa Rica S. A. (Tigo),

[68]   The number of beneficiaries in 2022 was adjusted following an exhaustive analysis of the data collected from the first of these two projects. During said audit, it was determined that a number of households had been incorrectly categorized under the "assigned" status even though these households had not actually been granted a subsidy due to some restriction. In light of the above, the entire data set reported in association to this program was adjusted for 2022.

[69]   The data from this service provider includes the data reported by "Liberty Telecomunicaciones (Telefónica)" and "Liberty Servicios Fijos (Cabletica)". These used to be reported separately in previous reports. The data is now aggregated due to the merger of "Telefónica" and "Cabletica" under the "Liberty" brand in 2022. The data collected from FONATEL programs and projects is not broken down by company name or license, but rather by network operator and/or service provider.

Instituto Costarricense de Electricidad (ICE), Claro CR Telecomunicaciones S. A. (Claro), Cooperativa de Electrificación Rural de San Carlos R. L. (Coopelesca), Cooperativa de Electrificación Rural de Los Santos R. L. (Coopesantos), Cooperativa de Electrificación Rural de Zarcero R. L. (Coopealfaroruiz), Cooperativa de Electrificación Rural de Guanacaste R. L. (Coopeguanacaste), Servicios Femarroca (Teki or Cable Pacayas), Cable Caribe S.A. (Cable Caribe), and Cinema Turrialba S.A. (Cable Net). Telecable, Liberty, Tigo and ICE account for 91 % (210 604) of the benefiting households, with Telecable as the predominant Internet provider at 31 % of the total benefiting households (see Graph 244).

Management indicators

> In 2023, 13 % of all households nationwide benefited from the Connected Households Program,

11 percentage point more than what was reported in 2022. The provinces of Puntarenas and Guanacaste reported the highest penetration of the program+[70] with 20 % and 18 % of the total number of beneficiary households. Followed by Cartago (13 %), San Jose and Alajuela (12 % each), Limon (11 %), and Heredia (9 %). Of all the provinces, only Puntarenas, San Jose, Alajuela and Cartago showed an upward trend from 2022 to 2023, with all four provinces recording an increase of 1-2 % in relation to the previous year (see Graph 245).

The increase in the number of households that benefited from this program made it possible to expand both projects under the Connected Households Program, reaching a total of 487 districts (99 %) across the country with at least one household that benefited from this program, which represented an increase of 1 % (3 more districts) in relation to 2022 (see Graph 246). Specifically, the first project (Goal No. 5 of the 2015-2021 PNDT) is being implemented in 484 districts (98 % of the total number of districts nationwide), while the second project (Goal No. 7 of the 2022-2027 PNDT) is being implemented in 485 districts (99 %) of the total number of districts nationwide (see Map 4).

Beneficiaries indicators

The total number of active fixed Internet subscriptions[71] subsidized under the Connected Households Program (projects 1 and 2) showed an upward trend in 2023, reaching a total of 189 519 subscriptions, which represents an increase of 19 108 (11 %) in relation to 2022 (see Graph 247). Likewise, the net number of active subsidized subscriptions for 2023 was estimated to be 130 767 subscriptions, which represents an increase of 13 185 (11 %) subscriptions from 2022 to 2023.

Considering that the penetration rate of fixed Internet services in the market per every 100 households in 2023[72] was 64.7 %, it is estimated that the Connected Households Program contributed to the penetration of fixed Internet services in the market by 16.5 % in 2023, which represents an increase of 1.1 percentage points in relation to 2022. Likewise, the market penetration of the program's fixed Internet services increased from 9.9 % in 2022 to 10.7 % in 2023 (see Graph 248).

The 232 087 households that benefited under the PHC made it possible for 800 635 inhabitants to access the benefits of this program, which represents an increase of 74 737 (10 %) from 2022 to 2023. Of the total number of people that benefited from this program, 618 925 (77 %) did so under the first project (Goal No. 5 of the 2015-2021 PNDT) and 310 393 (23 %) did so under the second project (Goal No. 7 of the 2022-2027 PNDT) (see Graph 249). In addition, regarding the composition of these households, an analysis in 2023 revealed that 150 603 households (81 %) were women-headed households, and that 389 256 households (49 %) had minor, which represented an increase of 9 % and 11 %, respectively, in relation to 2022.

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[70] Market penetration is calculated by dividing the total number of beneficiary households by the total number of households in each province.
[71] This includes all households with an active subsidized Internet subscription.
[72] Data extracted from the Data Transfer section of this report: "Statistics of the Telecommunications Sector", SUTEL, 2023.

Financial indicators

18 919 million colones from FONATEL were executed in 2023 under the PHC, which represented an increase of 6222 million colones (49 %) in relation to 2022. A total of 115 285 million colones from FONATEL were executed under the PHC from 2016 to 2023 (see Graph 250).

The decrease in investment made under the Connected Households Program can be attributed to the following two factors:

− The winding-down of the first project under the PHC, which slowed down due to the achievement of the 2015-2021 PNDT's Goal No.5, and the expiration of the 5-year subsidy term on July 31st, 2022. This directly resulted in a number of households leaving the PHC.

− The lack of progress in the implementation of the second project under the PHC (Goal No.7 of the 2022-2027 PNDT) on account of the difficulties with the IMAS database of potential beneficiaries.

The investments made in 2023 under the Connected Households Program were allocated among 11 of the 12 Internet service providers that form part of the program. The largest share of the total amount of investment was allocated to Telecable (31 %), followed by ICE (20 %), and Liberty and Tigo (18 % each). These four Internet service providers account for 87 % of the total investment made under this program.

Provisioned Public Centers Program [PCPE as per its acronym in Spanish]

Goal achievement indicators of the National Telecommunications Development Plan del Plan Nacional de Desarrollo de las Telecomunicaciones

The 2022-2027 PNDT includes four goals geared towards the provision of support devices and products[73] with FONATEL resources, with the purpose of serving the CENCINAI, the National Resource Center for Inclusive Education [CENAREC], the National Council for Persons with Disabilities [CONAPDIS], and the MICITT's Intelligence Community Centers [CECI], namely:

• Goal No.18: Provide 7113 Internet connectivity devices to CENCINAI by 2024.

• Goal No.19: Provide 7722 Internet connectivity devices to CONAPDIS by 2024.

• Goal No.20: Provide 476 Internet connectivity devices to CENAREC by 2024

• Goal No.21: Provide 6738 Internet connectivity devices to CECI by 2024.

Of the goals mentioned above, only Goal No. 18 has a project in the "in-planning" phase. None of the remaining goals have a signed action plan due to a lack of clarity, in terms of the scope of engagement, on the part of the CONAPDIS, the CENAREC, and the MICITT's CECIs.

Management indicators

Two projects were carried out with FONATEL resources under the Provisioned Public Centers Program, namely:

a) The first of these two projects was carried out to 100 % from 2017 to 2018 in furtherance of the 2015-2021 PNDT's Goal No. 9. A total of 36 831 Internet connectivity support devices and products were provided to 3809 public institutions serving socioeconomically vulnerable populations (MEP, MICITT, CENCINAI, and the Ministry of Health).

b) The second of these two projects was carried out to completion from 2021 to April 2023 in furtherance to the 2015-2021 PNDT's Goal No.9, after it was given an extension. A total of 86 812 support devices and products were provided to 2772 education centers of the MEP with the purpose of assisting students in socioeconomi-

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73 Support devices and products are defined as devices, equipment and/or instruments that support access to Information and Communication Technologies [ICT], including technologies, software and products designed to promote the personal autonomy of people with disabilities.

cally vulnerable conditions within the Costa Rican education system amongst the first and fifth quintiles of household income.

> Through the joint implementation of these two projects, a total of 123 643 support devices and products were provided to 6332 Centers for the Provision of Public Services [CPSPs][74] that serve socioeconomically vulnerable population

in accordance with Act 8642 (see Graph 251). An analysis of the distribution of these devices revealed that 113 200 devices (92 %) were provided to education centers of the Ministry of Public Education [MEP], 5058 devices (4 %) were provided to Intelligence Community Centers [CECI] of the Ministry of Science, Innovation, Technology and Telecommunications [MICITT], 4318 devices (3 %) were provided to Periodic Visiting Posts [PVP] of the Social Security Administration of Costa Rica [CCSS], and 1067 devices (1 %) were provided to Education and Nutrition Centers and Children's Comprehensive Care Centers [CEN-CINAI]. From 2022 to 2023, only the education centers of the MEP reported a change in the percentage distribution of devices, with an increase of 8 % or, in other words, 8326 support devices and products (see Graph 252).

The 6332 Centers for the Provision of Public Services that benefited from this program are scattered across 468 districts (95 %) nationwide, which represents an increase of 3 % in relation to 2022 (see Graph 253 and Map 5). Of the total number of centers, 3134 (49 %) were Periodic Visiting Posts of the CCSS, 2858 (45 %) were education centers of the MEP, 268 (4 %) were Intelligence Community Centers of the MICITT, and 72 (1 %) were Education and Nutrition Centers and Children's Comprehensive Care Centers of the Ministry of Health (see Graph 254).

Financial indicators

A total of 46 897 million colones were invested to carry out the two projects mentioned above from 2017 to 2023, representing 19 % of the total cumulative investment executed by FONATEL for the development of the programs. A total of 13 857 million colones were invested in 2023, which represents 30 % of the total cumulative investment made under this program (see Graph 255).

Connected Public Spaces Program [PEPC]

Management indicators

There is one project in the "in-progress" phase under the Connected Public Spaces Program [PEPC as per its acronym in Spanish]. This project intends to make 513 free Internet access zones operational. The project, defined in Goal No. 13 of the 2015-2021 PNDT, was carried out to completion on January 4th, 2021. A total of 419 free Internet access zones (82 %) were made operational in public spaces, 61 free Internet access zones (12 %) were made operational in public libraries of the SINABI, 28 free Internet access zones (5 %) were made operational in train stations of the INCOFER, and 7 free Internet access zones (1 %) were made operational in Civic Centers for Peace. It should be noted that two of these zones are classified as both a library and a civil center. As such, in the breakdown per type of zone, these are counted twice and should total 515, instead of the 513 free Internet access zones specified in the goal.

Even though the public policy goal was carried out to completion, the SUTEL continues to provide operational and financial assistance to each free Internet access zone, in keeping with the subsidy term of each zone. The subsidies are provided for a term of 3, 5, or 7 years, depending on the type of zone. There were a total of 411 free Internet access zones (80 %) with an active subsidy

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[74]   249 CPSPs benefited from both projects under the Provisioned Public Centers Program; these were only counted once in the results.

term and 102 free Internet access zones with an expired subsidy term as of December 31st, 2023. Of these Internet access zones with an expired subsidy, 65 zones (13 %) maintain an active service funded with their own resources (see Graph 256).

Beneficiaries indicators

More than 1.5 million users (with devices that connected to the "Zii for all" network) were reported in 2023 among the different operating regions, with a total data traffic of 718 123 gigabytes (GB) (see Graph 257). In addition, 5.5 million sessions were initiated, with an average duration of 2.2 hours, in 2023, totaling 3.4 million hours of usage (see Graph 258). Given that 37 free Internet access zones permanently ceased operations, the number of users, data traffic, hours of usage, and initiated sessions decreased by 25 %, 44 %, 30 %, and 31 %, respectively.

> Since its inception, 2.4 million unique users have benefited from the program (representing 45 % of the country's total population),

accruing more than 6.3 million users, 24.8 million sessions were initiated, 24.8 million hours of usage, and 3.3 million GB of data traffic.

Financial indicators

5957 million colones from FONATEL were executed under this program in 2023, which represents a decrease of 1750 million colones (23 %) in relation to 2022. 24 396 million colones have been invested under the Connected Public Spaces Program from 2019 to 2023 (see Graph 259). The total investment made under this program is distributed among the three participating service providers as follows: 9511 million colones (44 %) were awarded to the "RACSA-ICE-PC Central" consortium, 8390 million colones (32 %) were awarded to Coopeguanacaste, and 7035 million colones (25 %) were awarded to Telecable.

Bicentennial Education Network Program [PREB]

Goal achievement indicators of the National Telecommunications Development Plan

As part of this program, SUTEL/FONATEL is responsible for providing Internet connectivity of 15 to 500 Mbps to education centers in rural and hard-to-reach areas by making use of FONATEL resources to subsidize the installation of the telecommunications infrastructure required to implement Layer 1 (Internet connectivity), Layer 2 (passive infrastructure) and Layer 3a (switches and wireless access points), and to subsidize the Internet service bill for a period of 5 years.

This program was developed in accordance with the Goal No. 14 of the 2015-2021 PNDT and is continued in the Goal No. 5 of the 2022-2027 PNDT. As of this date, however, the action plan is pending because the MEP has yet to provide the information required to determine the scope of the goal, including a full list of the education centers scheduled for service.

In addition to the lack of information and the problems involving the signing of the action plan for Goal No. 5 of the 2022-2027 PNDT, the program has faced significant challenges in terms of providing accurate information in a timely manner in regard to the physical and electrical conditions of the education center's infrastructure, including which of these centers are or will be served by the MEP and not by SUTEL/FONATEL.

In spite of the above, the SUTEL remains committed to bringing high-speed Internet to public education centers, and to continue to program, within the scope of the action plan of the Goal No. 14 of the 2015-2021 PNDT (i.e.: 2375 education centers), and to assist the MEP in the identification of some of these education centers. In light of the above, as of December 31st, 2023, 682 education centers have been connected to the Bicentennial Education Network [REB as per its acronym in Spanish], which is 27 % of the 100 % goal set for 2027 (see Graph 260). In 2023, 82 education centers were connected to the REB, representing a decrease of 84 % in relation to 2022 (517 fewer education centers) (see Graph 261). This decrease in the

number of education centers is the direct result of the delays and difficulties encountered by the MEP with regard to the scoping of the 2022-2027 PNDT's Goal No. 5.

Management indicators

In 2023, a total of 748 education centers were visited to analyze the solution to be implemented (an increase of 23 centers in relation to 2022). Of this total, 747 were inspected to determine the technical requirements for the implementation, 693 (93 %) were presented a proposal of solution for the approval of the pertinent authorities, 685 (92 %) were found to have approved the proposed solution, and 682 (91 %) were connected to the REB (providing Internet connectivity and an internal network). This accounts for the total number of education centers scheduled for service, pending the adoption of an action plan for the remaining centers (see Graph 262).

As mentioned above, these education centers will be provided Internet speeds between 15 Mbps and 500 Mbps. Of the 682 education centers connected to the REB in 2023, 352 (52 %) were provided an Internet speed of 100 Mbps, 159 (23 %) were provided an Internet speed of 175 Mbps, 70 (10 %) were provided an Internet speed of 300 Mbps, 53 (8 %) were provided an Internet speed of 40 Mbps, 34 (5 %) were provided an Internet speed of 15 Mbps, and 14 (2 %) were provided an Internet speed of 500 Mbps (see Graph 263).

An analysis of the distribution of the 682 education centers connected to the REB in 2023 per operator revealed that Coopeguanacaste reported the largest number of education centers with 253 (37 %), followed by the "RACSA-ICE-PC Central" consortium with 205 (30 %), Telecable with 185 (27 %), and Liberty with 39 (6 %) (see Graph 264).

In order to provide these 682 education centers with Internet, 4606 access points were installed (511 more than in 2022) across 176 districts (36 %) nationwide, which represents an increase of 7 districts in relation to 2022 (see Graph 265). An analysis of the distribution of education centers per province revealed that, in 2023, the provinces of Limon and Alajuela repor-

ted the largest number of educations centers with 157 and 156 (23 %), respectively, followed by Puntarenas with 109 (16 %), Guanacaste with 102 (15 %), San Jose with 96 (14 %), Heredia with 37 (5 %), and Cartago with 25 (4 %) (see Graph 266). The percentage distribution of the education centers connected to the REB per region is shown in Map 6.

Beneficiaries indicators

> Providing Internet connectivity to 682 education centers has made it possible to serve 161 564 students, representing an increase of 14 % in relation to 2022 (141 861 students),

which, in turn, represents an average of 237 students per education center (see Graph 267). A total of 2.9 million users (students, teachers and administrative staff) were reported to have used the installed networks (representing 55 % of the country's total population). These users initiated 19.0 million sessions and accounted for 15.1 million hours of use and 1.6 million terabytes (TB) of data traffic.

Financial indicators

A total of 13 089 million colones from FONATEL were invested in order to develop this program from 2021 to 2023. Of this total, 7417 million colones were invested in 2023, representing an increase of 59 % (2757 million colones) in relation to 2022, and accounting for 57 % of the total resources invested under this program from 2021 to 2023.

Coopeguanacaste was awarded the largest amount of resources under this program with 5122 million colones, accounting for 39 % of the total, followed by Telecable with 3644 million colones (28 %), ICE-RACSA-PC with 3014 million colones (23 %), and Liberty with 1309 million colones (10 %). The first three operators showed an increase between 21 % and 178 % in relation to 2022 (see Graph 268).

Table 22. Costa Rica: Achievement of goals established in the 2022-2027 PNDT under FONATEL programs in 2022-2027

Description of Goal	Year	Current goal[1]	Progress in 2023[2]	Achievement % of annual goal	Achievement % of total goal
Goal No.3: 24 indigenous territories with fixed and mobile telecommunications services coverage by 2026.	2022	9	9	100 %	38 %
	2023	15	14	93 %	58 %
	2024	17	NA	NA	NA
	2025	22	NA	NA	NA
	2026	24	NA	NA	NA
	2027	NA	NA	NA	NA
Goal No.4: 262 districts with fixed and mobile telecommunications services coverage, with Internet speeds as defined in the PNDT, by 2027.	2022	MSP[3]	128	NA	49 %
	2023	MSP[3]	128	NA	49 %
	2024	138	NA	NA	NA
	2025	188	NA	NA	NA
	2026	238	NA	NA	NA
	2027	262	NA	NA	NA
Goal No.5: 100% of FONATEL's Bicentennial Education Network Program by 2027.	2022	MSP[3]	25,8 %	NA	26 %
	2023	MSP[3]	26,5 %	NA	27 %
	2024	MSP[3]	NA	NA	NA
	2025	MSP[3]	NA	NA	NA
	2026	MSP[3]	NA	NA	NA
	2027	100 %	NA	NA	NA
Goal No.6: 331 CPSPs with a three-year Internet service subsidy by 2027. Note: CECI, CEN CINAI	2022	MSP[3]	124	NA	37 %
	2023	134	133	99 %	40 %
	2024	174	NA	NA	NA
	2025	224	NA	NA	NA
	2026	274	NA	NA	NA
	2027	331	NA	NA	NA
Goal No.7: 100,684 socioeconomically vulnerable households with at least one student duly enrolled in the Costa Rican public education system, with Internet service subsidized by 2023.	2022	40 684	40 150	99 %	40 %
	2023	100 684	84 317	84 %	84 %
Goal No.18: Provide 7113 Internet connectivity devices to CENCINAI by 2024	2022	MSP[3]	1067	NA	15 %
	2023	MSP[3]	1067	NA	15 %
	2024	7113	NA	NA	NA

Description of Goal	Year	Current goal[1]	Progress in 2023[2]	Achievement % of annual goal	Achievement % of total goal
Goal No.19: Provide 7722 Internet connectivity devices to CONAPDIS by 2024	2022	MSP[3]	0	NA	NA
	2023	MSP[3]	0	NA	NA
	2024	7722	NA	NA	NA
Goal No.20: Provide 476 Internet connectivity devices to CENAREC by 2024	2022	MSP[3]	0	NA	NA
	2023	MSP[3]	0	NA	NA
	2024	476	NA	NA	NA
Goal No.21: Provide 6738 Internet connectivity devices to CECI by 2024	2022	MSP[3]	5058	NA	75 %
	2023	MSP[3]	5058	NA	75 %
	2024	6738	NA	NA	NA

[1] The goals established in the goal matrix of the 2022-2027 PNDT published in December 2022.
[2] Progress is determined as per the reports of the trustee of the FONATEL trust.
[3] MSP: Unscheduled goal
Source: SUTEL, General Directorate of FONATEL. Costa Rica, 2023.

Graph 210. Costa Rica: Projects developed by FONATEL per project life cycle phase in 2019-2023
(yearly total figures)
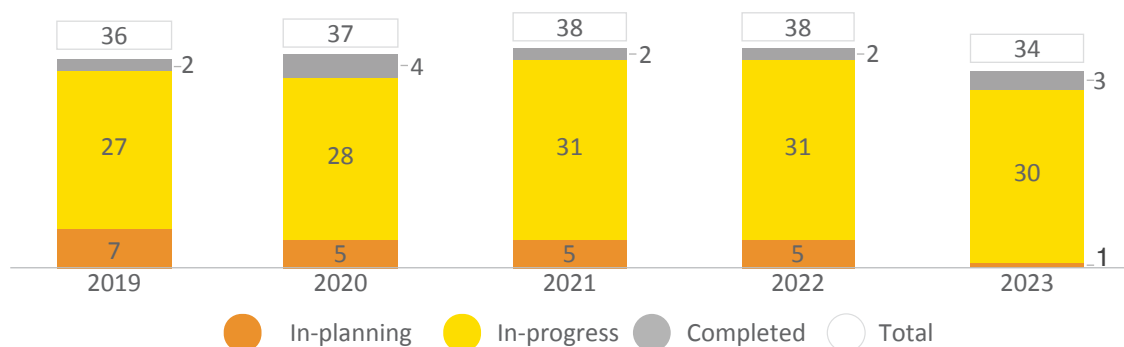
Note: Results showed a decrease of four projects in relation to 2022, as the assignment of the 5G spectrum that is required to provide the districts with connectivity was carried out via a bidding process.
Source: SUTEL, General Directorate of FONATEL. Costa Rica, 2023.

Graph 211. Costa Rica: Number of districts with at least one program in development with FONATEL resources in 2019-2023
(figures in quantity and percentage terms)
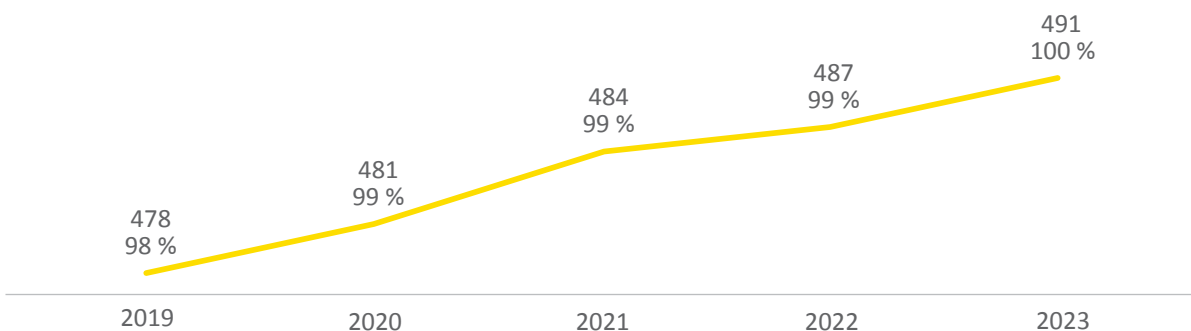
Source: SUTEL, General Directorate of FONATEL. Costa Rica, 2023.

Graph 212. Costa Rica: Number of devices granted through programs developed with FONATEL resources to provide access to ICTs, per program, in 2019-2023

(yearly aggregate figures)

Year	Connected Households P.	Provisioned Public Centers P.	Total
2019	130 579	36 831	167 410
2020	148 426	36 831	185 257
2021	181 644	36 831	218 475
2022	186 402	115 317	301 719
2023	186 558	123 643	310 201
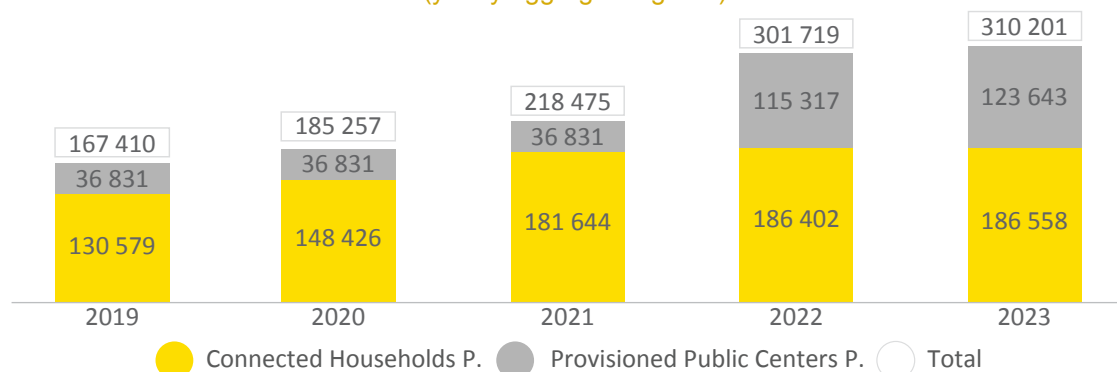
Note: The number of beneficiaries in 2022 under the Connected Households Program was adjusted following an exhaustive analysis of the data collected from Project No.1. During said audit, it was determined that Delivered devices Connected under the "assigned" status, which were waiting for assistance due to some restriction, were incorrectly counted towards the total.

Source: SUTEL, General Directorate of FONATEL. Costa Rica, 2023.

Graph 213. Costa Rica: Number of Centers for the Provision of Public Services that have received benefits through FONATEL programs, per program, in 2019-2023

(yearly aggregate figures)

Year	Connected Communities P.	Provisioned Public Centers P.	Bicentennial Education Network P.	Total
2019	997	3809		4806
2020	1447	3809		5256
2021	1777	3809	83	5669
2022	1828	6102	600	8530
2023	1916	6332	682	8930
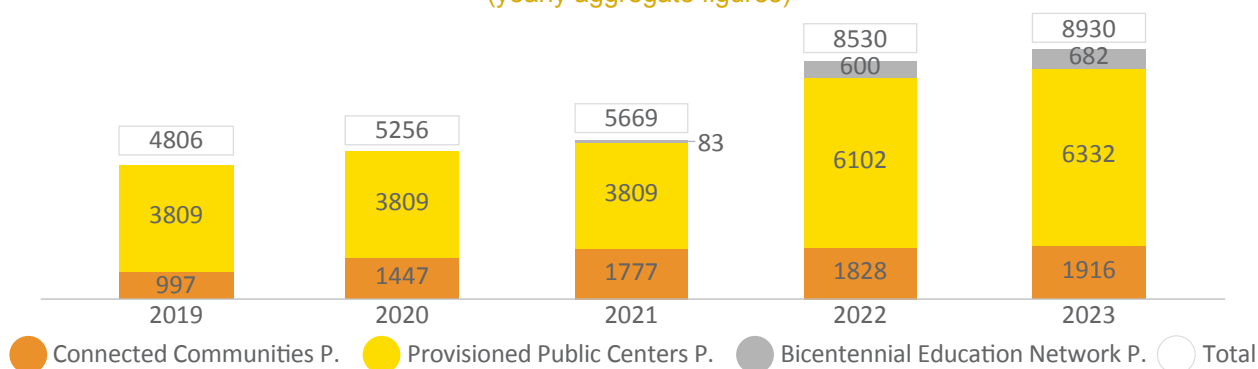
Source: SUTEL, General Directorate of FONATEL. Costa Rica, 2023.

Graph 214. Costa Rica: Number of inhabitants and households with access to voice and data services in districts in which programs are in development with FONATEL resources in 2019-2023

(figures in thousands)

Year	Households	Inhabitants
2019	371	1172
2020	420	1369
2021	468	1695
2022	508	1782
2023	516	1758
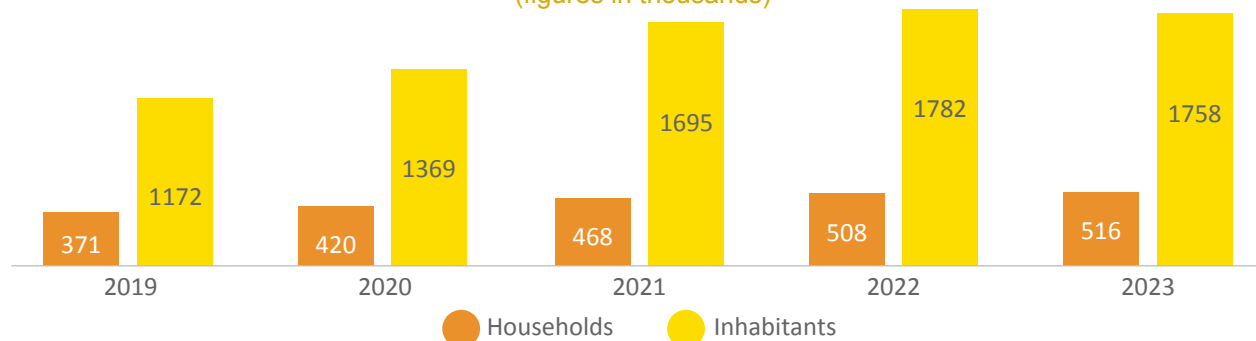
Source: SUTEL, General Directorate of FONATEL. Costa Rica, 2023.

Graph 215. Costa Rica: Number of fixed telephony and fixed Internet subscriptions provided through programs in development with FONATEL resources in 2019-2023

Fixed Telephony ● Fixed Internet ●

	2019	2020	2021	2022	2023
Fixed Telephony	3409	3351	5000	5102	5679
Fixed Internet	141 065	175 402	226 867	246 899	269 417
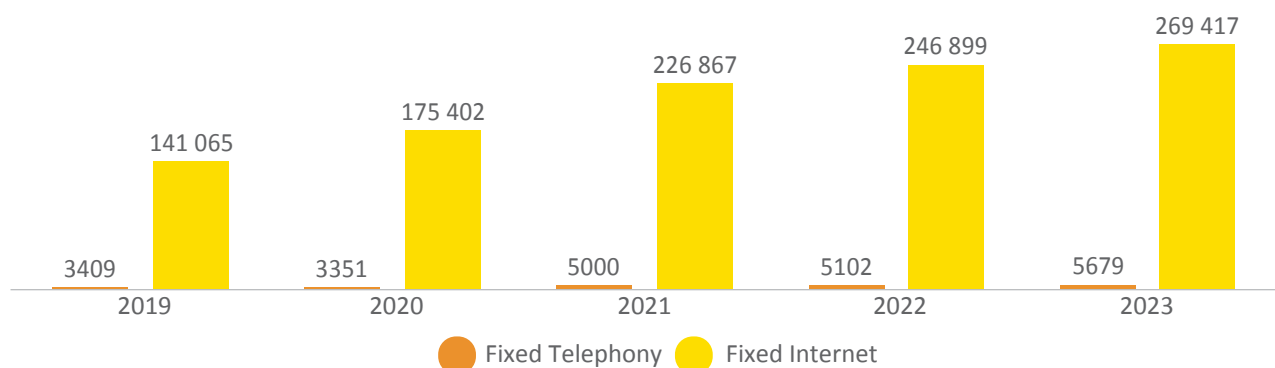
Source: SUTEL, General Directorate of FONATEL. Costa Rica, 2023

Graph 216. Costa Rica: Amount of the population that has benefited from FONATEL programs in 2019-2023

2019	2020	2021	2022	2023
502 791	628 571	977 165	1 238 739	1 304 195
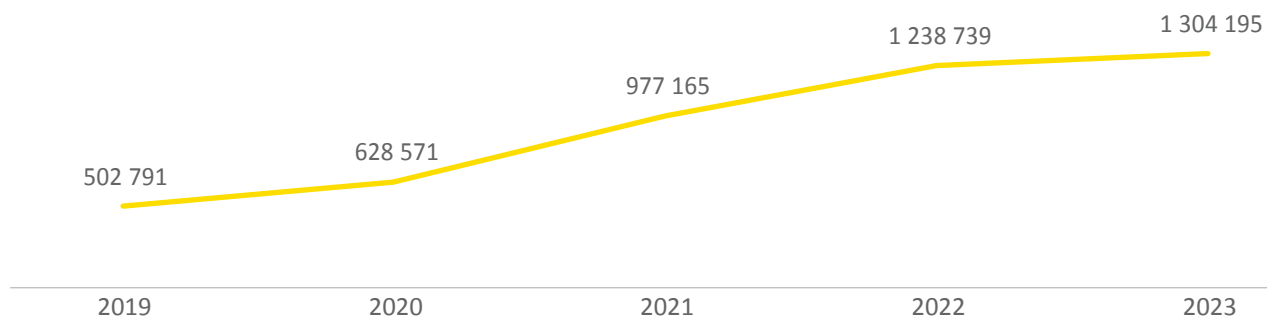
Source: SUTEL, General Directorate of FONATEL. Costa Rica, 2023.

Graph 217. Costa Rica: Equity of FONATEL in 2015-2023
(yearly figures in millions of colones)

2019	2020	2021	2022	2023
200 847	211 188	204 683	157 171	104 921
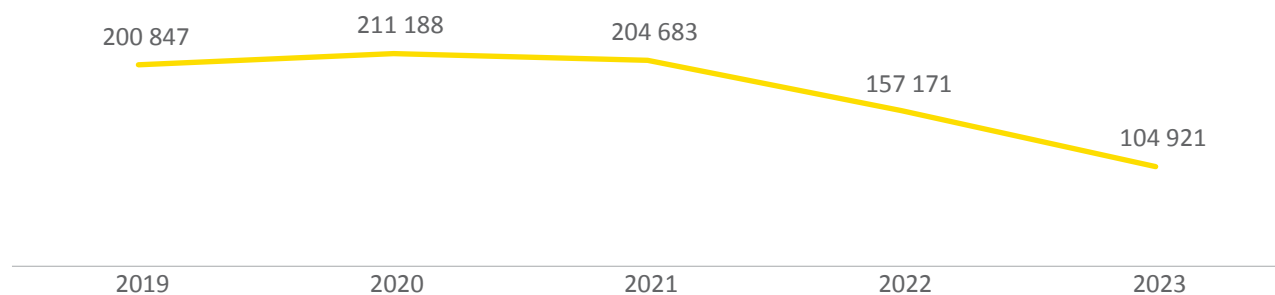
Source: SUTEL, General Directorate of FONATEL. Costa Rica, 2023.

Graph 218. Costa Rica: Special parafiscal contributions [CEPF as per its acronym in Spanish] collected in 2019-2023
(yearly figures in millions of colones)

2019	2020	2021	2022	2023
14 079	14 297	13 890	10 399	14 285
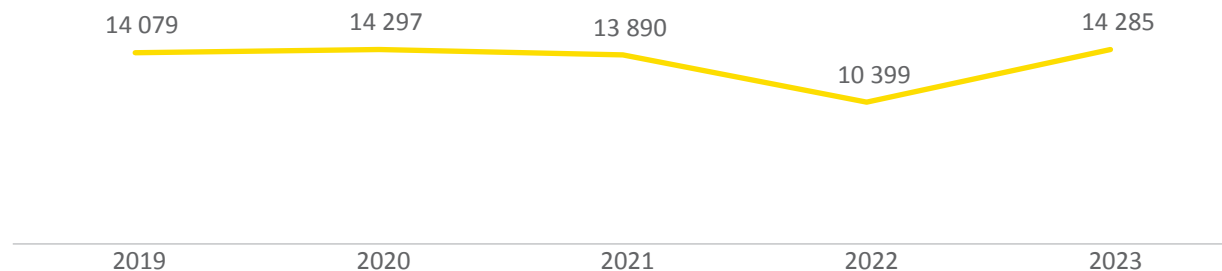
Source: SUTEL, General Directorate of FONATEL. Costa Rica, 2023.

Graph 219. Costa Rica: Annual and cumulative investment by FONATEL in 2019-2023
(yearly figures in millions of colones)

	2019	2020	2021	2022	2023
Cumulative investment	70 914	102 874	136 053	191 827	240 881
Annual investment	25 587	31 960	33 179	55 774	49 054

——— Annual investment   ••••• Cumulative investment
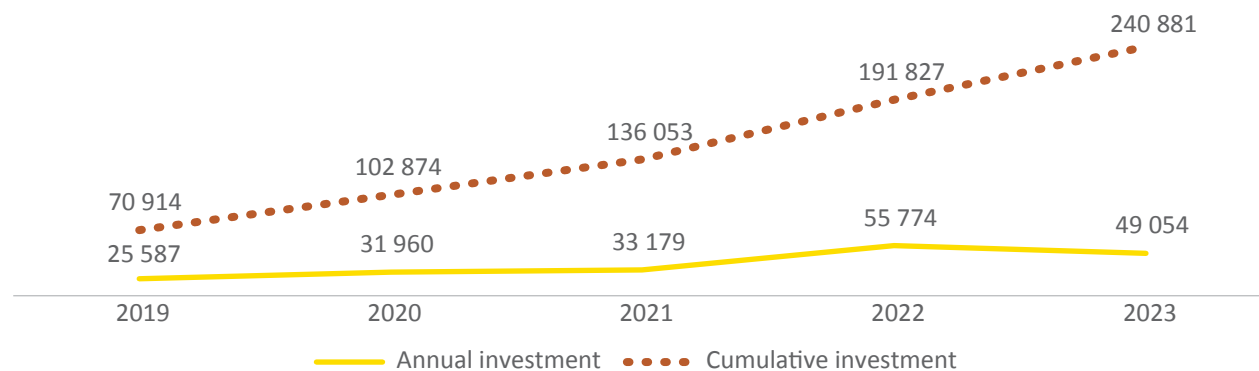
Source: SUTEL, General Directorate of FONATEL. Costa Rica, 2023.

Graph 220. Costa Rica: Investment by FONATEL per program in 2019-2023
(yearly figures in millions of colones)

	2019	2020	2021	2022	2023
Total investment	25 587	31 960	33 179	55 774	49 054
Connected Communities	1937	10.855	4610	7243	2904
Connected Households	21 205	17 366	21 006	12 697	18 919
Connected Public Spaces	1464	3740	6550	23 467	13 857
Connected Public Spaces	981		1013	7708	
Bicentennial Education Network				4659	7417

● Connected Communities   ● Connected Households   ● Connected Public Spaces
● Connected Public Spaces   ● Bicentennial Education Network   ○ Total investment
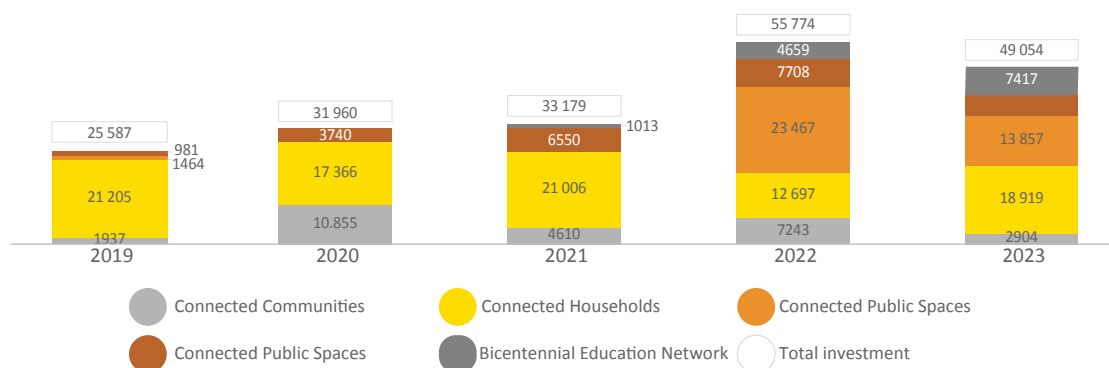
Source: SUTEL, General Directorate of FONATEL. Costa Rica, 2023.

Graph 221. Costa Rica: Percentage of investment made by FONATEL per operator in 2019-2023

(yearly figures in percentage terms)

2019 (25 587): 23 %, 28 %, 24 %, 24%, 14 %, 6 %, 3 %, 2 %
2020 (31 960): 43 %, 19 %, 13 %, 13%, 10 %, 8 %, 1 %, 2 %
2021 (33 179): 23 %, 28 %, 20 %, 20%, 11 %, 6 %, 3 %, 2 %
2022 (55 774): 62 %, 14 %, 7 %, 7%, 4 %, 1 %, 1 %, 3 %
2023 (49 054): 48 %, 19 %, 7 %, 7%, 7%, 4 %, 1 %, 3 %

Legend: ICE /RACSA, Liberty, Tigo, Coopelesca, Telecable, Coopeguanacaste, Claro, Others, ○ Total investment
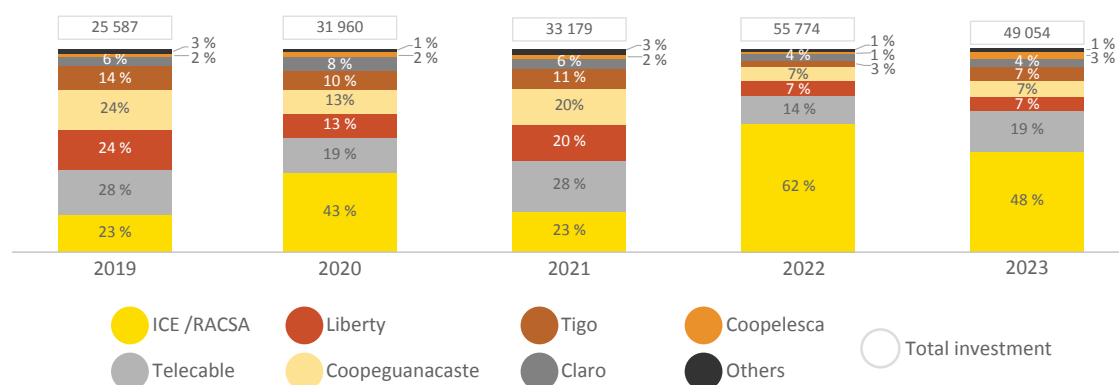
Note: Total investment represents the annual total in millions of colones.
Source: SUTEL, General Directorate of FONATEL. Costa Rica, 2023

Graph 222. Costa Rica: Achievement of Goal No. 3 of the PNDT: Indigenous territories with access to voice and data services in 2022-2023
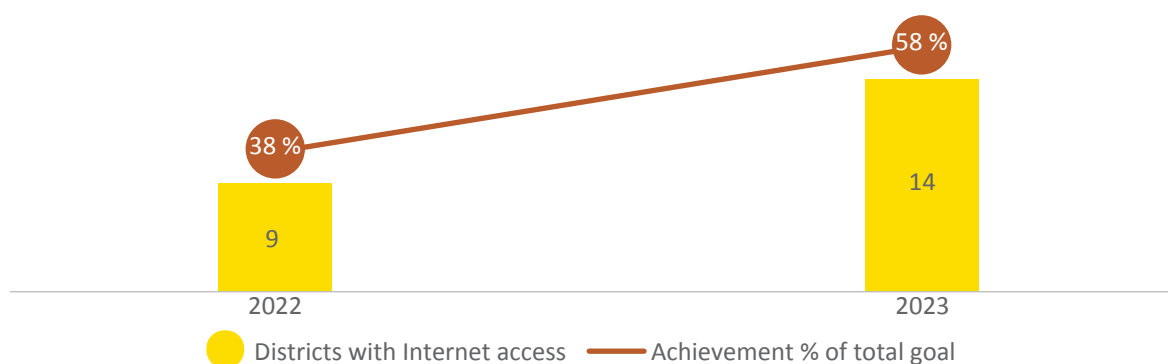
2022: 9 — 38 %
2023: 14 — 58 %

● Districts with Internet access ── Achievement % of total goal

Note: 13 Indigenous Territories were provided access to telecommunication services by FONATEL under the Connected Communities Program and 1 territory (i.e.: the Quitirrisí Indigenous Territory) was provided access by the market.
Source: SUTEL, General Directorate of FONATEL. Costa Rica, 2023.

Graph 223. Costa Rica: Achievement of Goal No. 4 of the PNDT: Districts that were provided access to voice and data services under the Connected Communities Program in 2022-2023

2022: 128 — 49 %
2023: 128 — 49 %

● Territories with Internet access ── Achievement % of total goal

Source: SUTEL, General Directorate of FONATEL. Costa Rica, 2023.

Map 2. Costa Rica: Districts with (total or partial) connectivity to voice and data services as a result of the Connected Communities Program in 2023
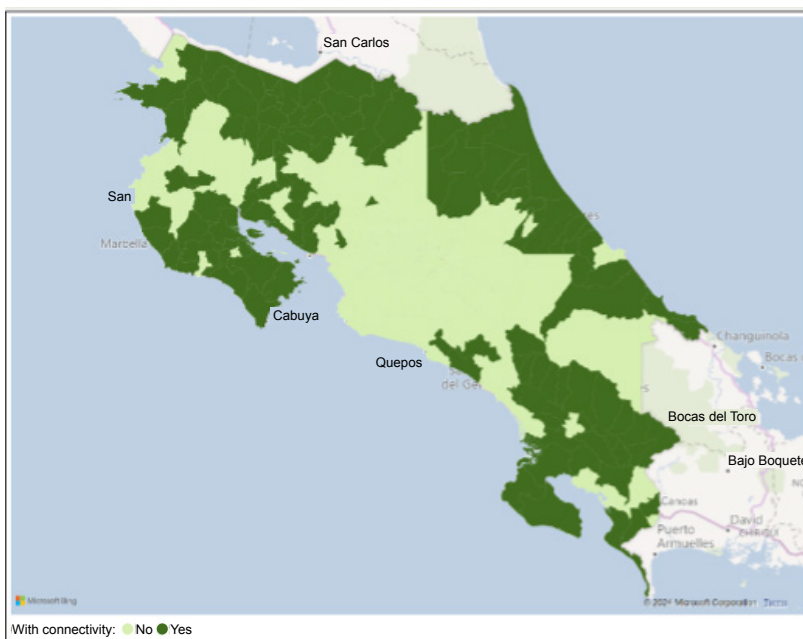
Source: SUTEL, General Directorate of FONATEL. Costa Rica, 2023.

Map 3. Costa Rica: Indigenous territories with (total or partial) connectivity to voice and data services as a result of the Connected Communities Program in 2023

Note: The Quitirrisí Indigenous Territory is not included in the map because it was not served by FONATEL, as mentioned in the title. This territory was provided access to telecommunication services by the market.

Source: SUTEL, General Directorate of FONATEL. Costa Rica, 2023.

Graph 224. Costa Rica: Districts and indigenous territories with access to telecommunication services in 2019-2023
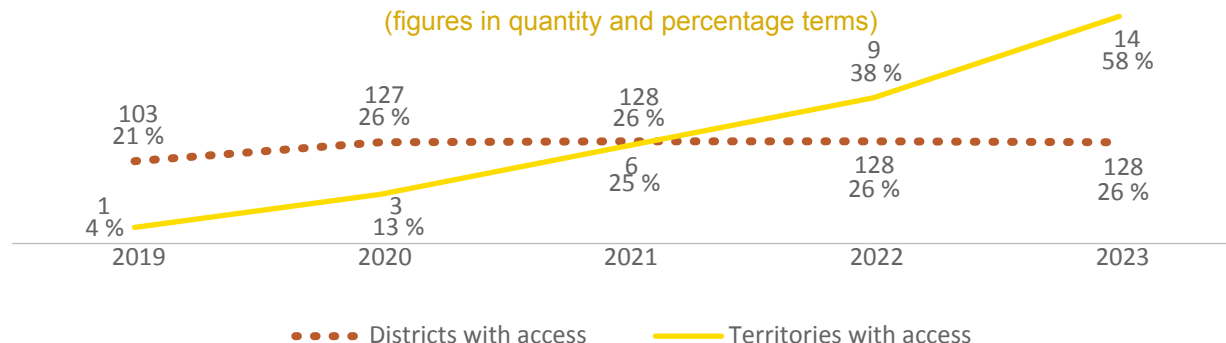
(figures in quantity and percentage terms)

Districts with access (dotted line):
- 2019: 103, 21 %
- 2020: 127, 26 %
- 2021: 128, 26 %
- 2022: 128, 26 %
- 2023: 128, 26 %

Territories with access (yellow line):
- 2019: 1, 4 %
- 2020: 3, 13 %
- 2021: 6, 25 %
- 2022: 9, 38 %
- 2023: 14, 58 %

•••• Districts with access ——— Territories with access

Note: 13 Indigenous Territories were provided access to telecommunication services by FONATEL under the Connected Communities Program and 1 territory (i.e.: the Quitirrisí Indigenous Territory) was provided access by the market.

Source: SUTEL, General Directorate of FONATEL. Costa Rica, 2023.

Graph 225. Costa Rica: Distribution of districts with (total or partial) connectivity to voice and data services, per region, as a result of the Connected Communities Program in 2019-2023

(yearly aggregate figures)

Region	2019	2020	2021	2022	2023
Pacífico Central		14	14	14	14
Chorotega	29	39	40	40	40
Brunca	30	30	30	30	30
Huetar Norte	25	25	25	25	25
Huetar Caribe	19	19	19	19	19
Total	**103**	**127**	**128**	**128**	**128**

⬤ Huetar Caribe ⬤ Huetar Norte ⬤ Brunca ⬤ Chorotega ⬤ Pacífico Central ◯ Total
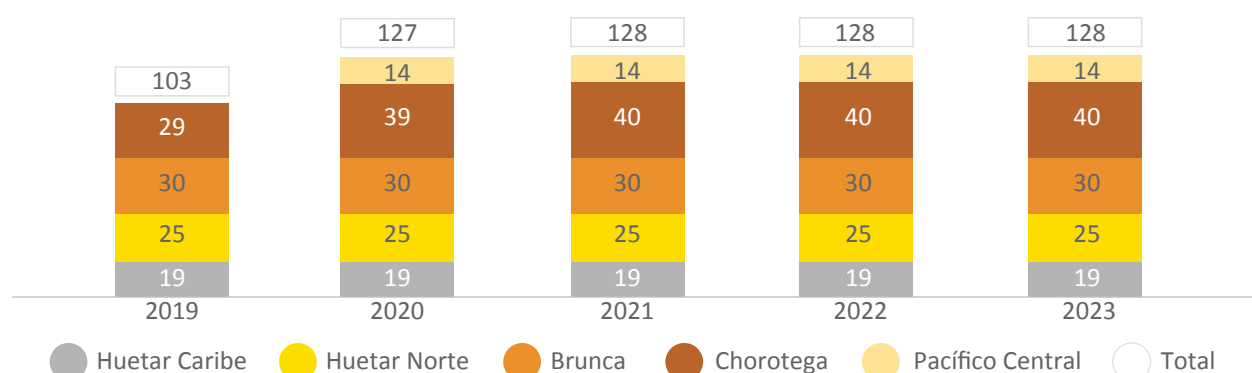
Source: SUTEL, General Directorate of FONATEL. Costa Rica, 2023.

Graph 226. Costa Rica: Projects developed under the Connected Communities Program per project life cycle phase in 2019-2023

(yearly total figures)

Phase	2019	2020	2021	2022	2023
Completed	1	4	2	2	2
In progress	25	24	26	26	26
In planning	6	4	4	4	
Total	**32**	**32**	**32**	**32**	**28**

⬤ In planning ⬤ In progress ⬤ Completed ◯ Total
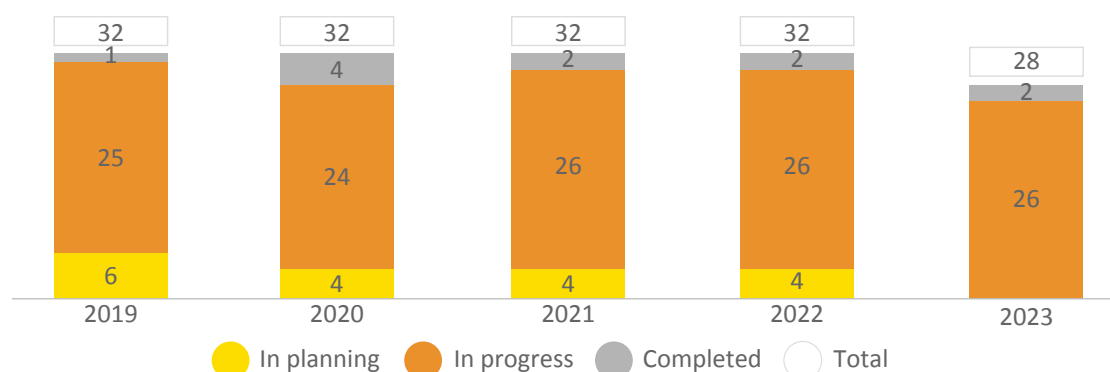
Note: Two projects completed in 2020 were expanded in 2021 (Guatuso and Los Chiles).
Source: SUTEL, General Directorate of FONATEL. Costa Rica, 2023.

Graph 227. Costa Rica: Number of towers equipped with telecommunications infrastructure through the Connected Communities Program, per region, in 2019-2023

(yearly aggregate figures)

Year	Huetar Caribe	Huetar Norte	Brunca	Chorotega	Pacífico Central	Total
2019	111	148	115	57		431
2020	116	173	116	114	68	587
2021	129	175	118	129	77	628
2022	136	175	128	131	81	651
2023	145	175	142	137	82	681
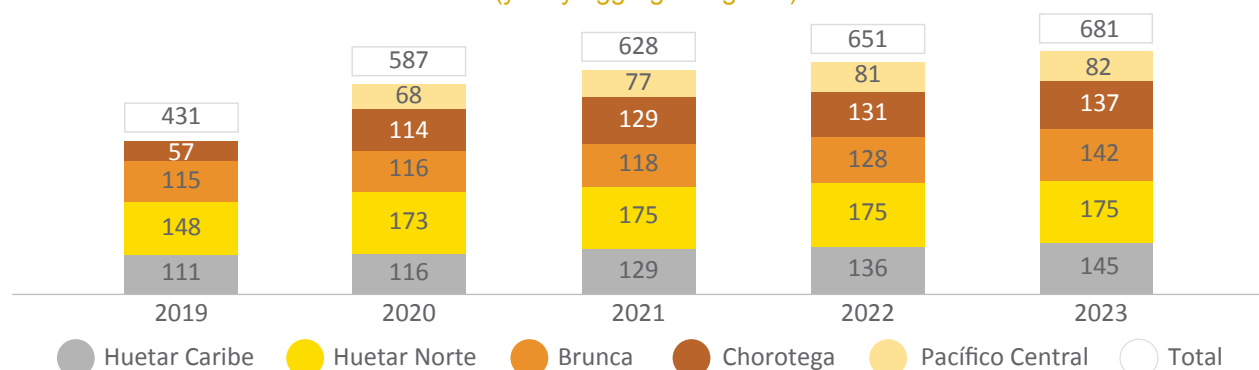
Source: SUTEL, General Directorate of FONATEL. Costa Rica, 2023.

Graph 228. Costa Rica: Number of towers in indigenous territories equipped with telecommunications infrastructure under the Connected Communities Program in 2019-2023

(yearly aggregate figures)

2019	2020	2021	2022	2023
6	6	19	30	51
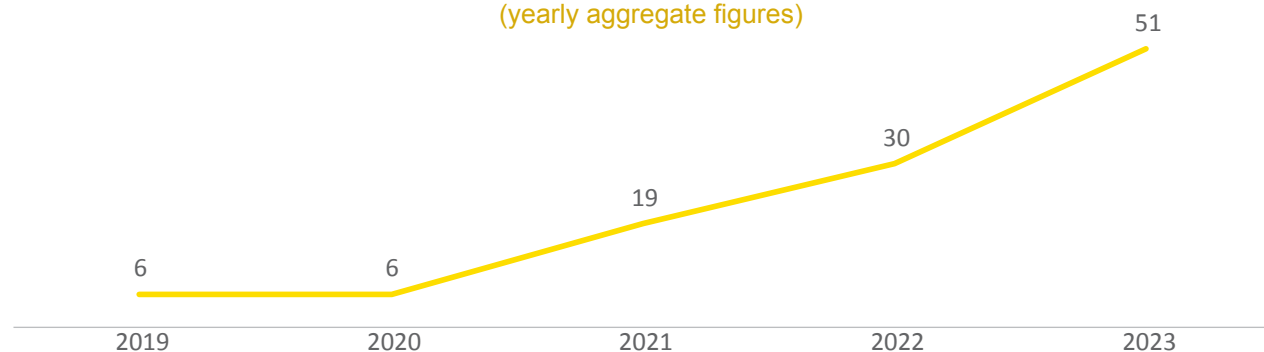
Source: SUTEL, General Directorate of FONATEL. Costa Rica, 2023.

Graph 229. Costa Rica: Number of Centers for the Provision of Public Services that were provided Internet access through the Connected Communities Program, per institution, in 2019-2023

(yearly aggregate figures)

Year	MEP	CEN-CINAI	MICITT	CCSS	Total
2019	923	63	11		997
2020	1352	66	15	14	1447
2021	1640	97	23	17	1777
2022	1683	98	26	21	1828
2023	1744	103	30	39	1916
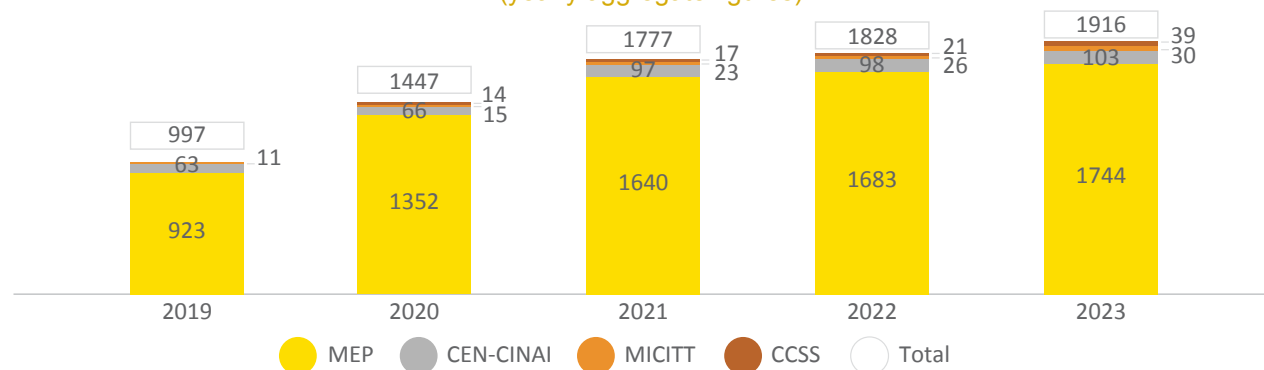
Source: SUTEL, General Directorate of FONATEL. Costa Rica, 2023.

Graph 230. Costa Rica: Number of Centers for the Provision of Public Services in indigenous territories that were provided Internet access through the Connected Communities Program in 2019-2023
(yearly aggregate figures)

69
48
21
15
11

2019   2020   2021   2022   2023
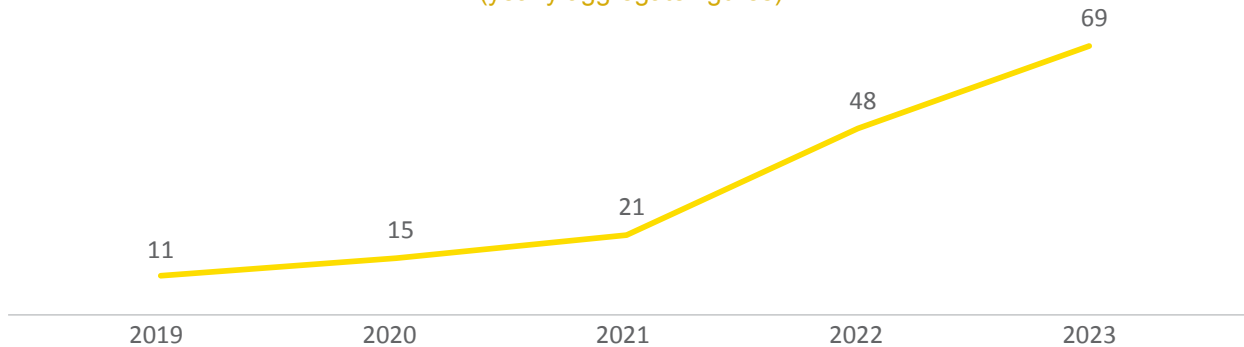
Source: SUTEL, General Directorate of FONATEL. Costa Rica, 2023.

Graph 231. Costa Rica: Number of inhabitants and households in districts with (total or partial) connectivity that were provided potential access to voice and data services through the Connected Communities Program in 2015-2023

803 267   932 564   943 986   955 260   966 467

250 543   288 555   301 721   315 630   326 621

2019   2020   2021   2022   2023

●●●● Inhabitants   ── Dwellings
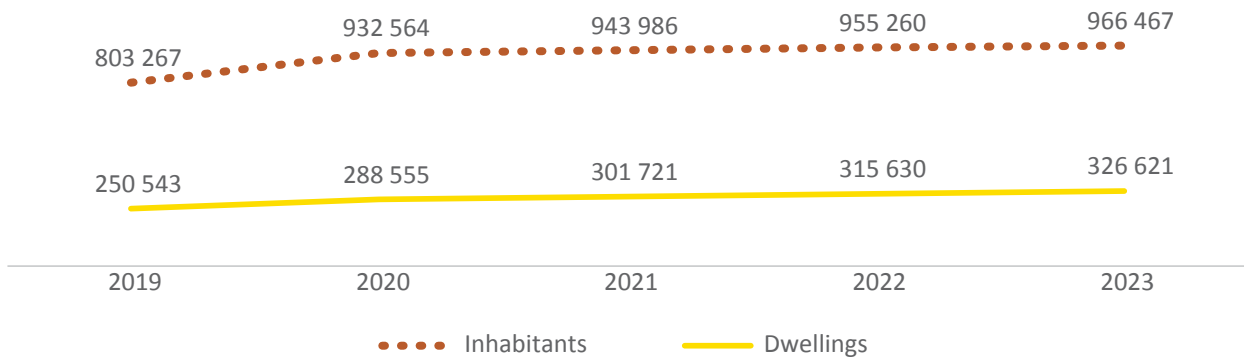
FSource: SUTEL, General Directorate of FONATEL. Costa Rica, 2023.

Graph 232. Costa Rica: Number of fixed telephony and fixed Internet subscriptions provided through the Connected Communities Program in 2019-2023

Year	Fixed Telephony	Fixed Internet
2019	3409	10 486
2020	3351	26 976
2021	5000	33 078
2022	5102	35 178
2023	5679	37 330

● Fixed Telephony   ● Fixed Internet
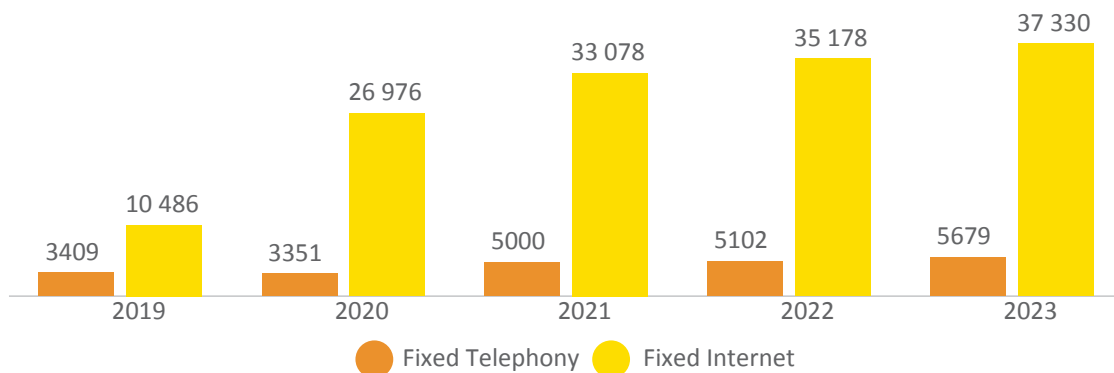
Source: SUTEL, General Directorate of FONATEL. Costa Rica, 2023.

Graph 233. Costa Rica: Number of mobile telephony subscriptions provided through the infrastructure made available by the Connected Communities Program in 2019-2023

(figures expressed in quantity and percentage of penetration)

36 683
1,9 %

40 429
1,9 %

12 334
0,8 %

27 871
0,6 %

38 603
0,6 %

| 2019 | 2020 | 2021 | 2022 | 2023 |
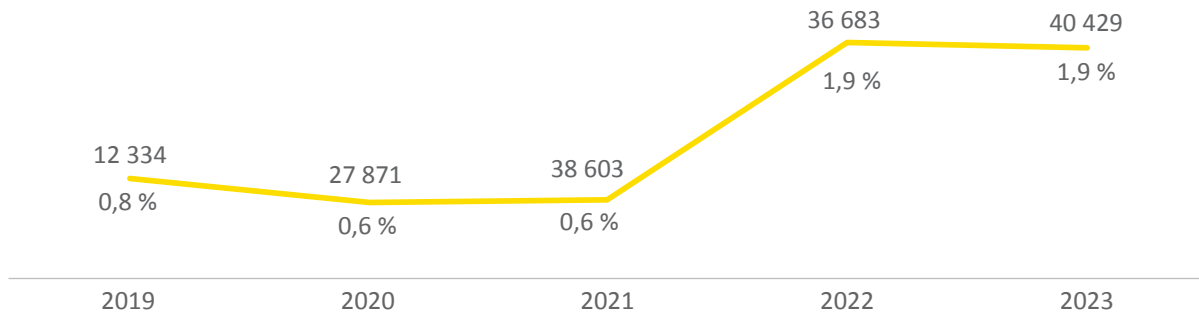
Source: SUTEL, General Directorate of FONATEL. Costa Rica, 2023.

Graph 234. Costa Rica: Contributions to market penetration of fixed telephony and Internet services provided under the Connected Communities Program in 2019-2023

3.1 %
3.2 %
3.2 %

2.7 %

1.2 %

1.0 %
1.0 %
0.9 %

0.5 %
0.6 %

| 2019 | 2020 | 2021 | 2022 | 2023 |

•••• Fixed Telephony ——— Fixed Internet
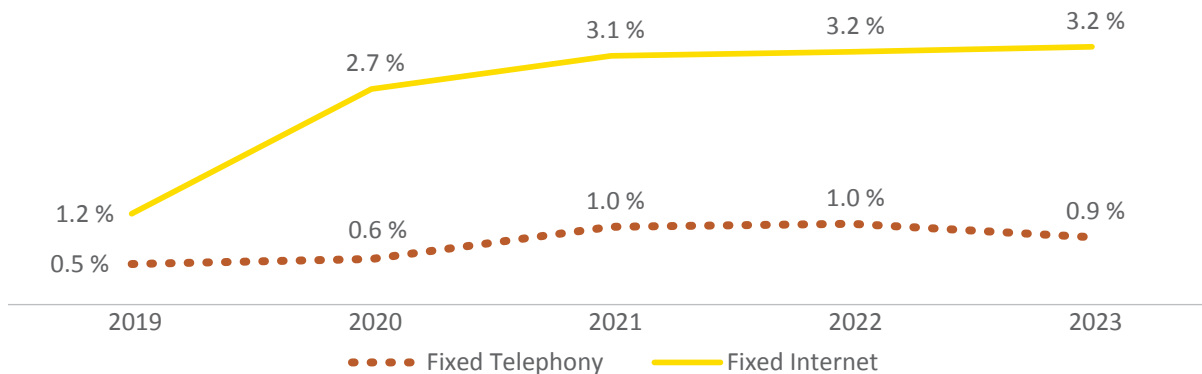
Source: SUTEL, General Directorate of FONATEL. Costa Rica, 2023.

Graph 235. Costa Rica: Number of fixed Internet subscriptions provided through the Connected Communities Program, per region, in 2019-2023

(yearly figures in percentage terms)

10 486	26 976	33 078	35 178	37 330
25 %	23 %	1 % / 1 %	3 % / 2 %	5 % / 3 %
55 %	50 %	23 %	20 %	19 %
21 %	25 %	48 %	48 %	45 %
		24 %	25 %	27 %

| 2019 | 2020 | 2021 | 2022 | 2023 |

⚫ Huetar Caribe ⚫ Huetar Norte ⚫ Brunca ⚫ Pacífico Central ⚫ Chorotega ⚪ Total subscriptions
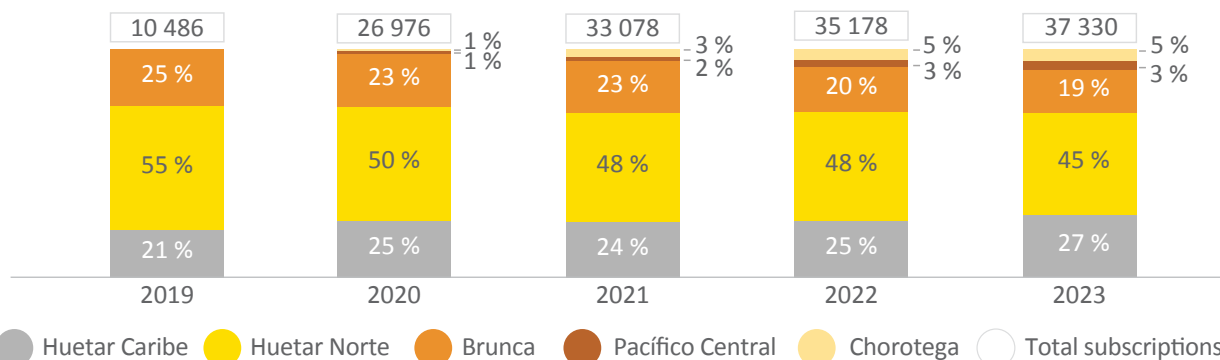
Source: SUTEL, General Directorate of FONATEL. Costa Rica, 2023.

Graph 236. Costa Rica: Distribution of fixed telephony subscriptions provided under the Connected Communities Program per region in 2019-2023

(yearly figures in percentage terms)

	2019	2020	2021	2022	2023
Total subscriptions	3409	3351	5000	5012	5679
Chorotega		7 %	21 %	32 %	35 %
Pacífico Central		9 %	13 %	22 %	22 %
Brunca	29 %	42 %	35 %	20 %	17 %
Huetar Norte	45 %	10 %	2 %	1 %	1 %
Huetar Caribe	26 %	32 %	29 %	25 %	26 %

Legend: Huetar Caribe, Huetar Norte, Brunca, Pacífico Central, Chorotega, Total subscriptions
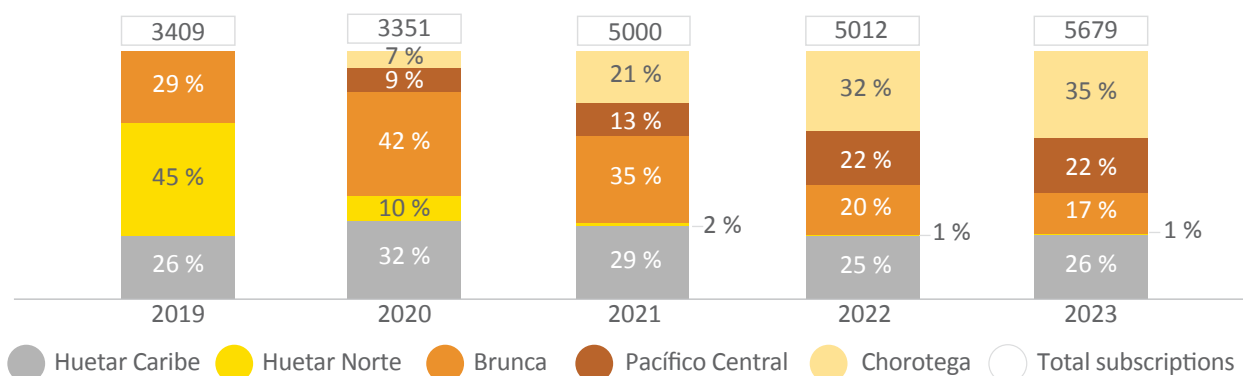
Source: SUTEL, General Directorate of FONATEL. Costa Rica, 2023.

Graph 237. Costa Rica: Distribution of mobile telephony subscriptions provided through the infrastructure made available by the Connected Communities Program per region in 2019-2023

(yearly figures in percentage terms)

	2019	2020	2021	2022	2023
Total subscriptions	40 429	31 234	32 925	99 398	97 519
Brunca	11 %	17 %	17 %	27 %	30 %
Huetar Norte	74 %	56 %	56 %	19 %	21 %
Huetar Caribe	15 %	28 %	28 %	53 %	49 %

Legend: Huetar Caribe, Huetar Norte, Brunca, Total subscriptions
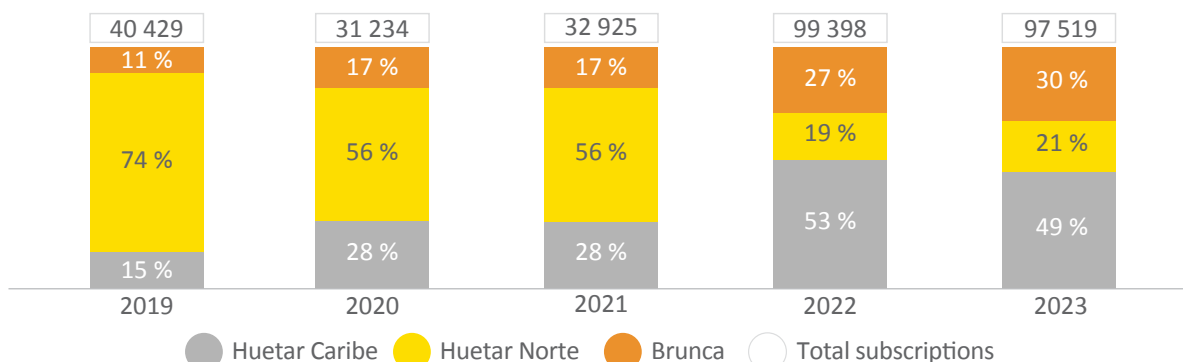
Source: SUTEL, General Directorate of FONATEL. Costa Rica, 2023.

Graph 238. Costa Rica: Amount of the population that has benefited from the Connected Communities Program in 2019-2023

2019	2020	2021	2022	2023
82 195	120 196	136 934	189 031	210 738
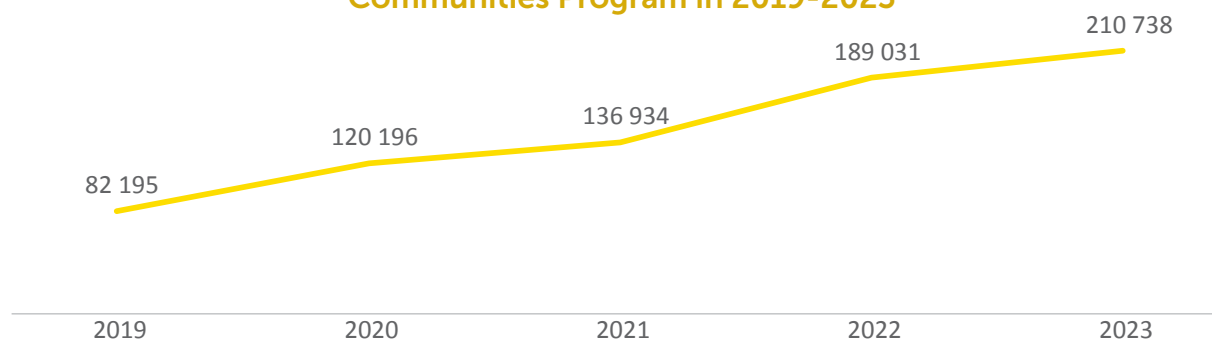
Source: SUTEL, General Directorate of FONATEL. Costa Rica, 2023.

Graph 239. Costa Rica: Investments made through the Connected Communities Program in 2019-2023

(yearly aggregate figures in millions of colones)

	2019	2020	2021	2022	2023
	15 063	25 917	30 527	37 770	40 674
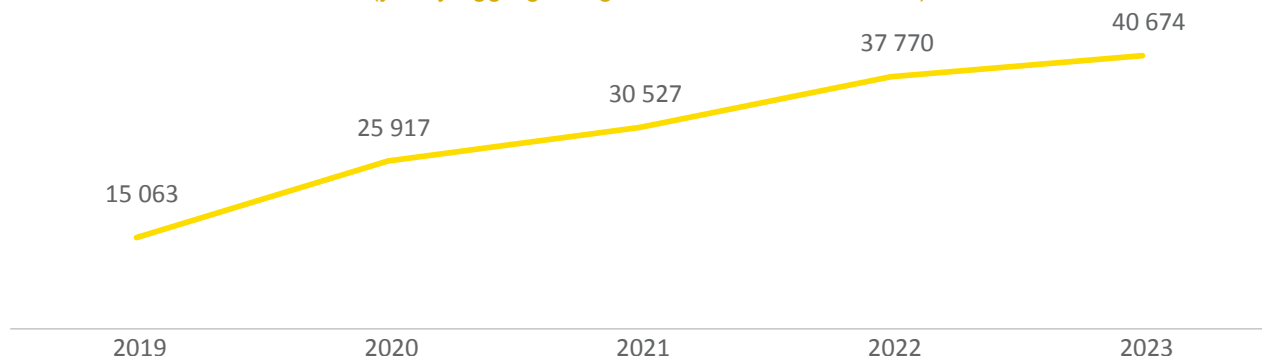
Source: SUTEL, General Directorate of FONATEL. Costa Rica, 2023.

Graph 240. Costa Rica. Achievement of the PNDT's Goal No.7: to subsidize the Internet service of households with students through the Connected Households Program in 2021-2023

- 2022: 40 %, 40 150
- 2023: 84 %, 84 317

🟡 Beneficiary households ━━ Achievement % of total goal
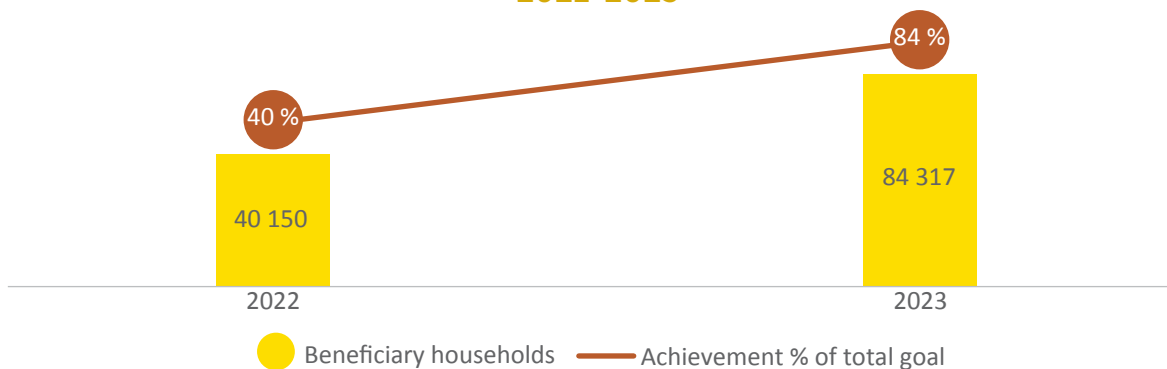
Source: SUTEL, General Directorate of FONATEL. Costa Rica, 2023.

Graph 241. Costa Rica: Subsidies granted under the Connected Households Program per project in 2019-2023

(yearly aggregate figures)
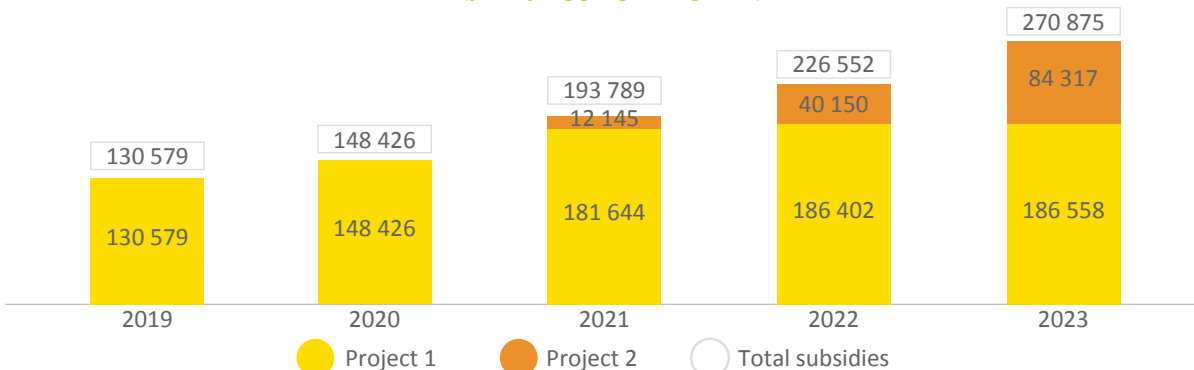
	2019	2020	2021	2022	2023
Total subsidies	130 579	148 426	193 789	226 552	270 875
Project 2			12 145	40 150	84 317
Project 1	130 579	148 426	181 644	186 402	186 558

🟡 Project 1 🟠 Project 2 ⚪ Total subsidies

Note: The number of beneficiaries in 2022 was adjusted following an exhaustive analysis of the data collected from the first of these two projects. During said audit, it was determined that a number of households had been incorrectly categorized under the "assigned" status even though these households had not actually been granted a subsidy due to some restriction. In light of the above, all of the data in 2022 was adjusted.

Source: SUTEL, General Directorate of FONATEL. Costa Rica, 2023.

Graph 242. Costa Rica: Number of households that have benefited from the Connected Households Program, per service status, in 2019-2023
(yearly aggregate figures)

Year	Active status	Inactive status	Beneficiary households
2019	117 719	12 860	130 579
2020	126 095	22 331	148 426
2021	166 512	27 277	193 789
2022	170 410	41 311	211 721
2023	189 518	42 569	232 087
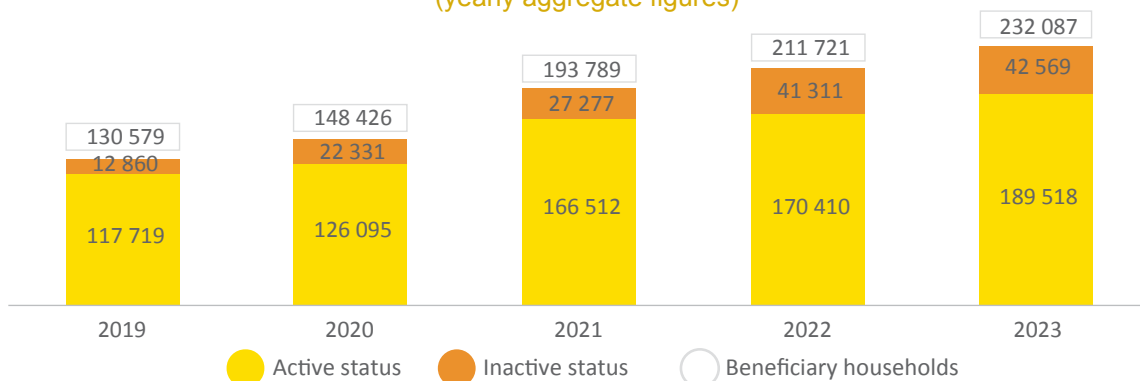
Source: SUTEL, General Directorate of FONATEL. Costa Rica, 2023.

Graph 243. Costa Rica: Number of households that have benefited from the Connected Households Program per quintile of income in 2019-2023
(yearly figures in percentage terms)

Year	1st Quintile	2st Quintile	3st Quintile	Beneficiary households
2019	84 %	13 %	3 %	130 579
2020	84 %	13 %	3 %	148 426
2021	81 %	16 %	3 %	193 789
2022	80 %	16 %	4 %	211 721
2023	78 %	18 %	5 %	232 087
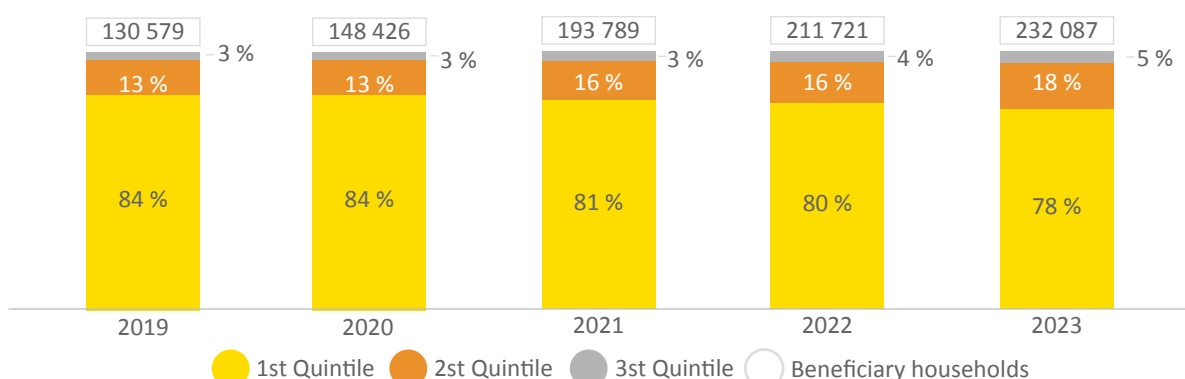
Source: SUTEL, General Directorate of FONATEL. Costa Rica, 2023.

Graph 244. Costa Rica: Number of households that have benefited from the Connected Households Program per operator in 2019-2023
(yearly figures in percentage terms)

Year	Telecable	Liberty	Tigo	Coopelesca	ICE	Total beneficiaries
2019	29 %	31 %	17 %	18 %	3 %, 3 %	130 579
2020	30 %	30 %	16 %	18 %	3 %, 3 %	148 426
2021	32 %	28 %	17 %	16 %	1%, 3%, 4 %	193 789
2022	32 %	27 %	16 %	17 %	1%, 3%, 4 %	211 721
2023	31 %	25 %	19 %	15 %	1%, 3%, 4 %	232 087

Legend: Telecable, Tigo, Coopelesca, Coopeguanacaste, Liberty, ICE, Coopesantos, Others, Total beneficiaries
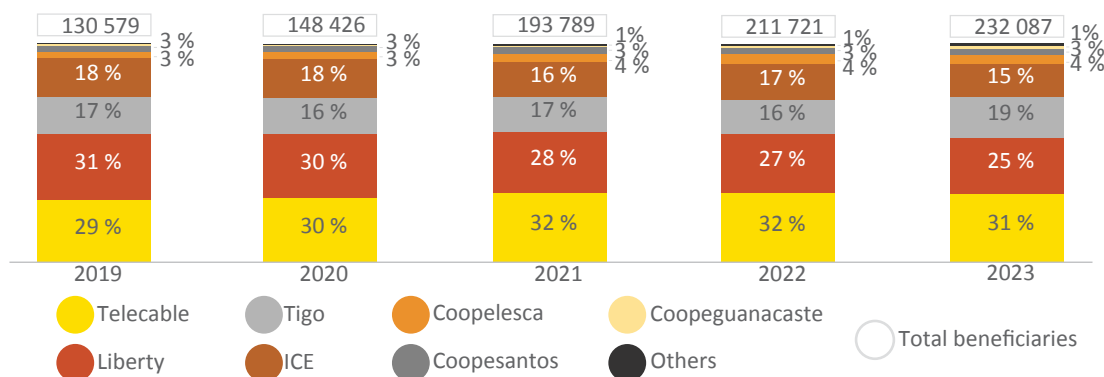
Source: SUTEL, General Directorate of FONATEL. Costa Rica, 2023.

Graph 245. Costa Rica: Percentage of total households that have benefited from the Connected Households Program, per province, in 2019-2023

	San Jose	Alajuela	Cartago	Heredia	Guanacaste	Puntarenas	Limon	Total
2019	8 %	7 %	8 %	6 %	12 %	12 %	6 %	8 %
2020	9 %	8 %	10 %	7 %	14 %	13 %	7 %	9 %
2021	11 %	11 %	13 %	9 %	18 %	17 %	10 %	12 %
2022	11 %	11 %	13 %	9 %	18 %	18 %	11 %	12 %
2023	12 %	12 %	13 %	9 %	18 %	20 %	11 %	13 %
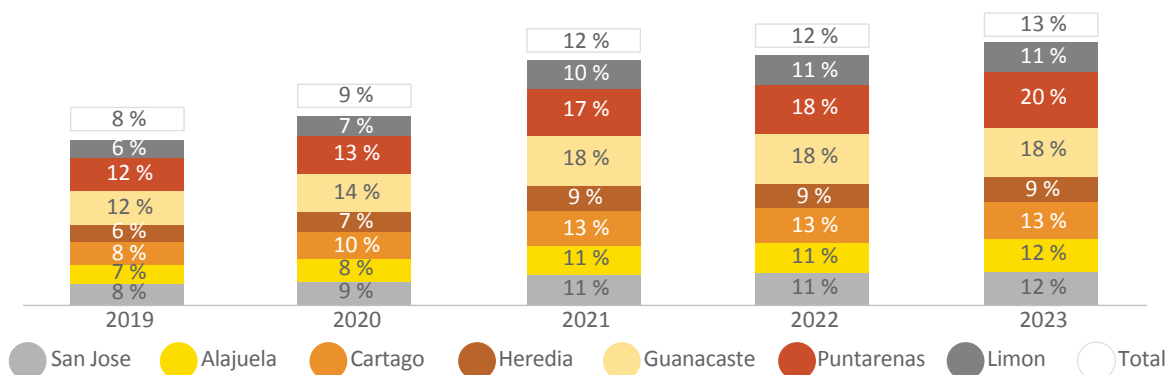
Source: SUTEL, General Directorate of FONATEL. Costa Rica, 2023.

Graph 246. Costa Rica: Districts with coverage under the Connected Households Program in 2019-2023
(Figures in quantity and percentage terms)

	2019	2020	2021	2022	2023
Percentage	97 %	97 %	99 %	99 %	99 %
Quantity	471	475	483	484	487
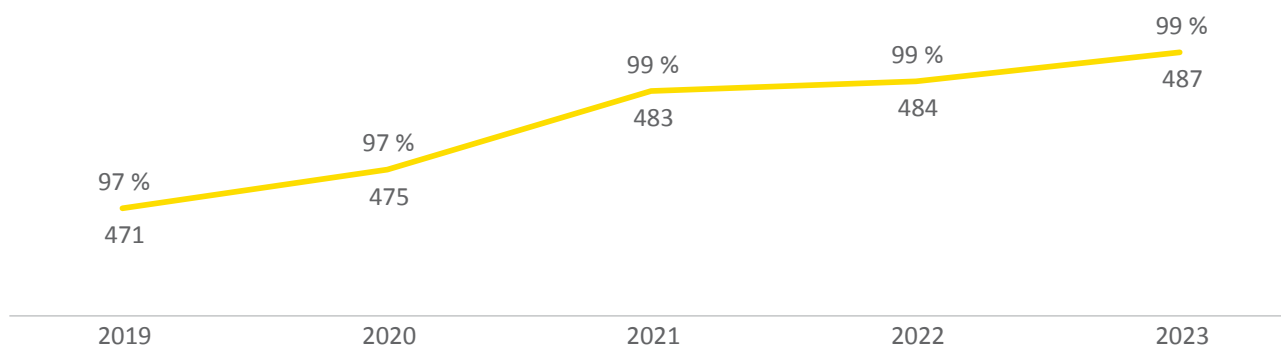
Source: SUTEL, General Directorate of FONATEL. Costa Rica, 2023.

Map 4. Costa Rica: Districts with coverage under Project No.2 (Goal No.7) of the Connected Households Program in 2023

Program presence: No Yes

Source: SUTEL, General Directorate of FONATEL. Costa Rica, 2023.

Graph 247. Costa Rica: Total active Internet subscriptions that were subsidized through the Connected Households Program in 2019-2023

2019	2020	2021	2022	2023
117 719	126 095	166 512	170 410	189 518
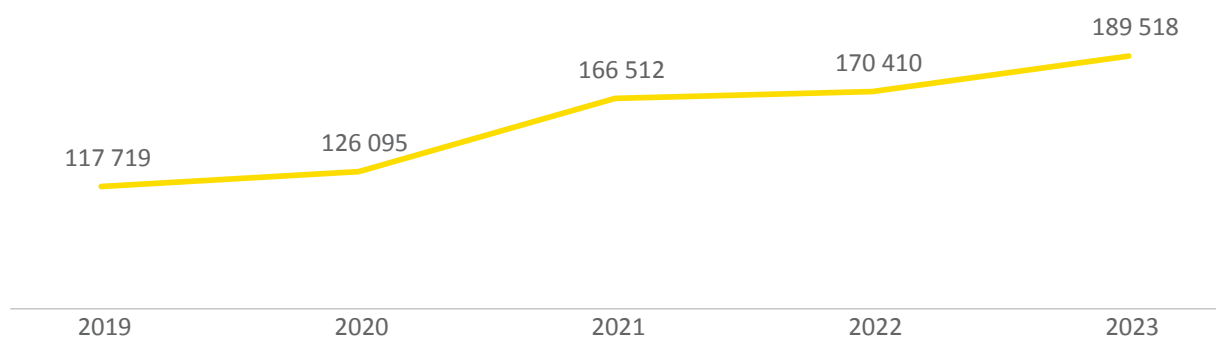
Source: SUTEL, General Directorate of FONATEL. Costa Rica, 2023.

Graph 248. Costa Rica: Contributions to market penetration of fixed Internet services provided under the Connected Households Program in 2019-2023

2019	2020	2021	2022	2023
13.0 %	12.7 %	15.7 %	15.4 %	16.5 %
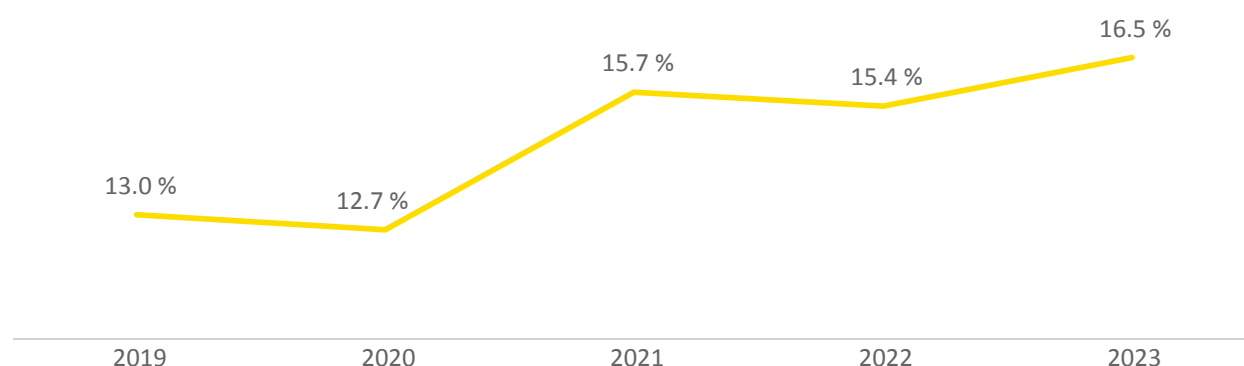
Source: SUTEL, General Directorate of FONATEL. Costa Rica, 2023.

Graph 249. Costa Rica: Amount of the population that has benefited from the Connected Households Program in 2019-2023

2019	2020	2021	2022	2023
449 394	510 449	660 796	725 898	800 635
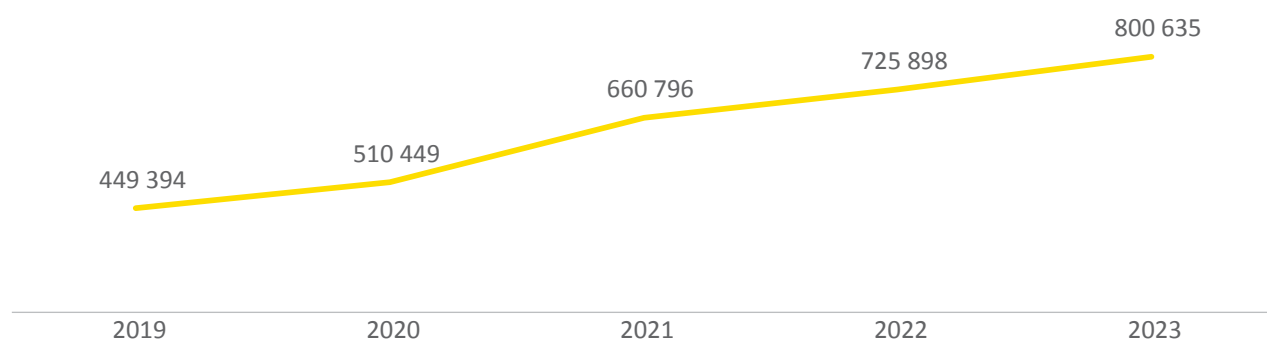
Source: SUTEL, General Directorate of FONATEL. Costa Rica, 2023.

Graph 250. Costa Rica: Investments made through the Connected Households Program in 2019-2023
(yearly aggregate figures in millions of colones)

2019	2020	2021	2022	2023
45 297	62 663	83 669	96 366	115 285
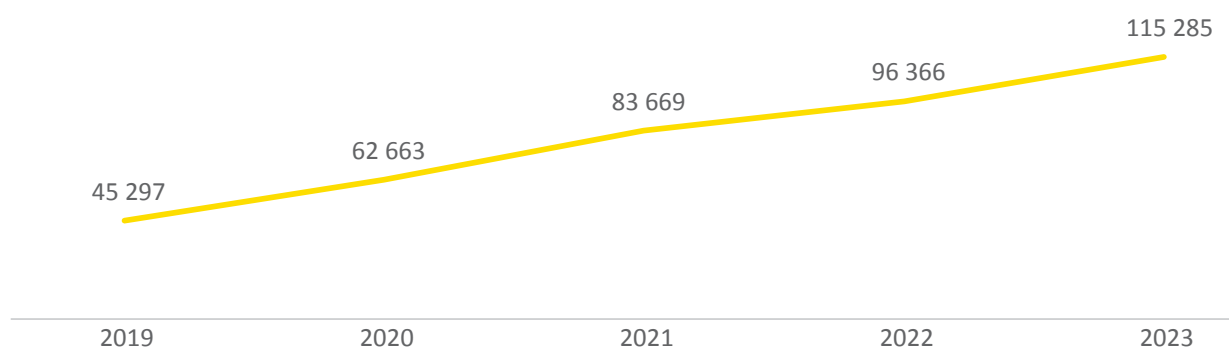
Source: SUTEL, General Directorate of FONATEL. Costa Rica, 2023.

Graph 251. Costa Rica: Number of devices delivered to CPSPs for accessing ICTs through the Provisioned Public Centers Program in 2019-2023

(yearly aggregate figures)

2019	2020	2021	2022	2023
36 831	36 831	36 831	115 317	123 643
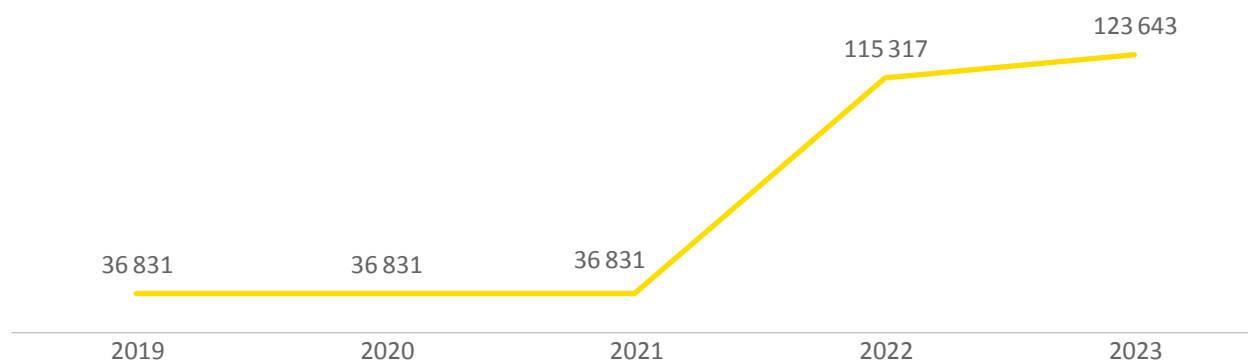
Source: SUTEL, General Directorate of FONATEL. Costa Rica, 2023.

Graph 252. Costa Rica: Percentage of devices for accessing ICTs delivered through the Provisioned Public Centers Program, per institution, in 2019-2023

	2019	2020	2021	2022	2023
Total devices	36 831	36 831	36 831	115 317	123 643
CCSS	3 %	3 %	3 %	1 %	1 %
CENCINAI	12 %	12 %	12 %	4 %	3 %
MICITT	14 %	14 %	14 %	4 %	4 %
MEP	72 %	72 %	72 %	91 %	92 %

● CENCINAI ● CCSS ● MICITT ● MEP ○ Total devices
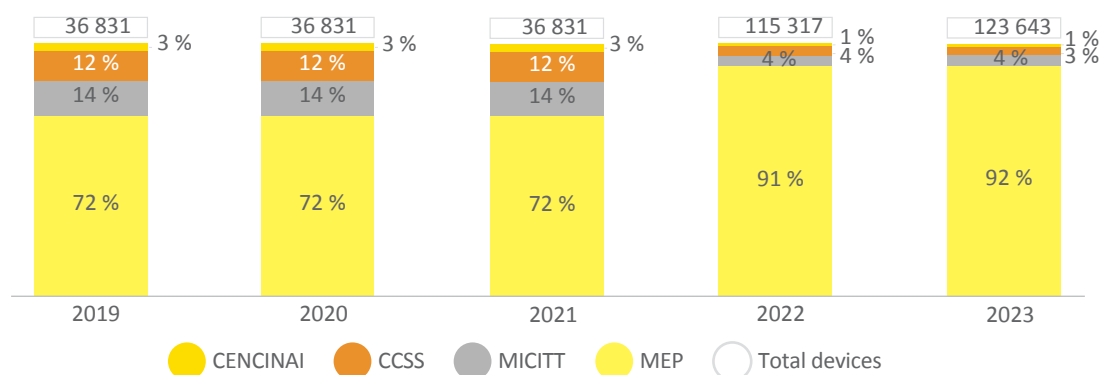
Source: SUTEL, General Directorate of FONATEL. Costa Rica, 2023.

Graph 253. Costa Rica: Districts with coverage under the Provisioned Public Centers Program in 2019-2023

(Figures in quantity and percentage terms)

2019	2020	2021	2022	2023
54 %	54 %	54 %	93 %	95 %
263	263	263	456	468
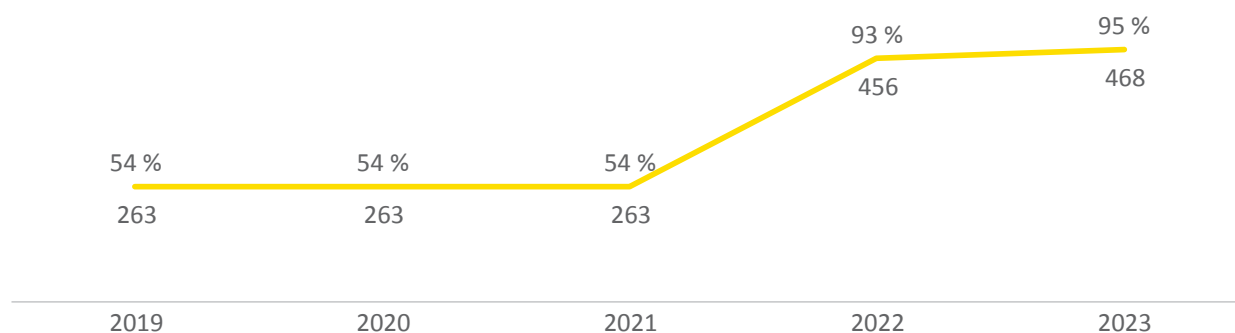
Source: SUTEL, General Directorate of FONATEL. Costa Rica, 2023.

Map 5. Costa Rica: Districts with coverage under the Provisioned Public Centers Program in 2023

Program presence: ● No ● Yes
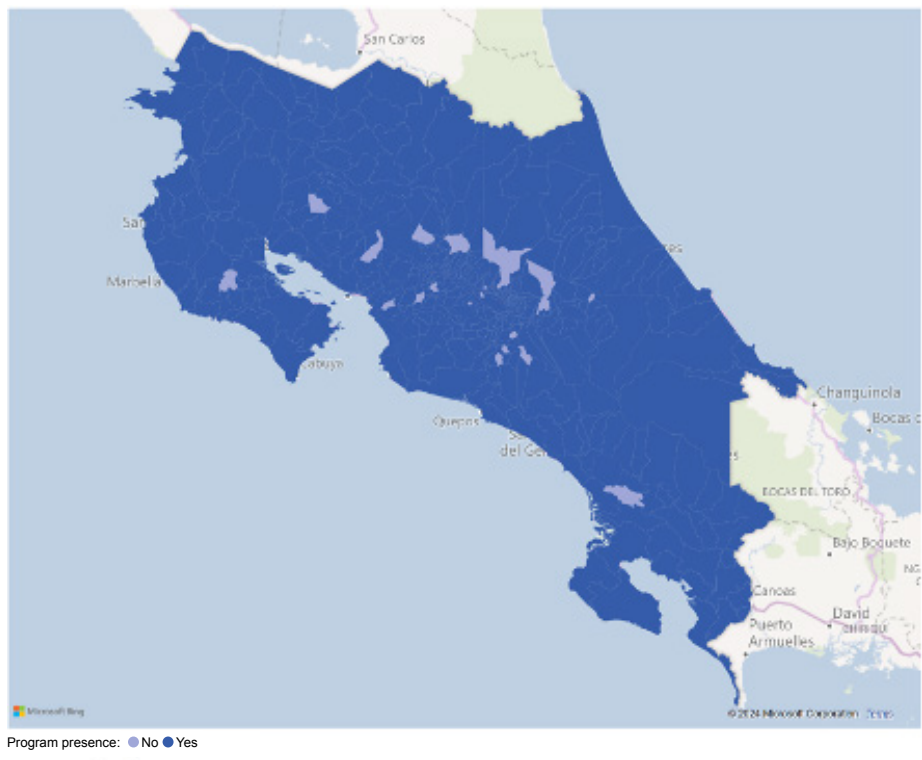
Source: SUTEL, General Directorate of FONATEL. Costa Rica, 2023.

Graph 254. Costa Rica: CPSPs that have benefited from the Provisioned Public Centers Program per institution in 2019-2023

(figures in percentage terms)

Year	Total devices	MICITT	MEP	CCSS
2019	3809	2 %	7 % / 9 %	82 %
2020	3809	2 %	7 % / 9 %	82 %
2021	3809	2 %	7 % / 9 %	82 %
2022	6102	1 %	4 % / 43 %	51 %
2023	6332	1 %	4 % / 45 %	49 %

● CENCINAI ● CCSS ● MICITT ● MEP ○ Total devices
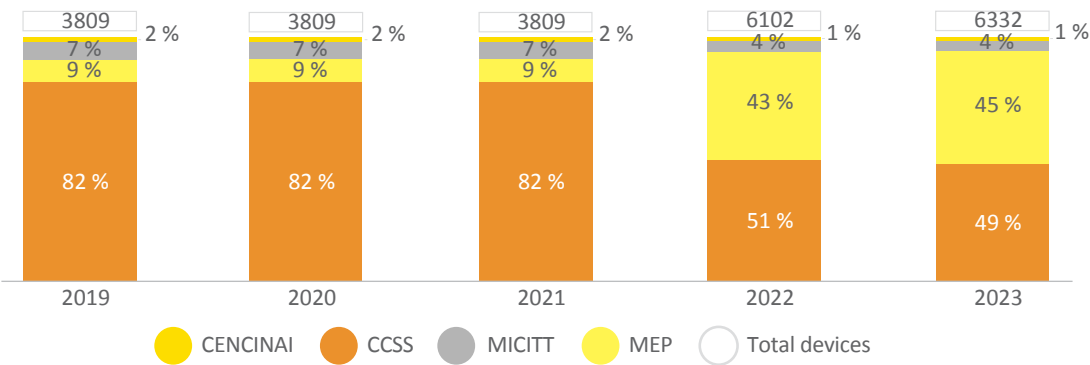
Source: SUTEL, General Directorate of FONATEL. Costa Rica, 2023.

Graph 255. Costa Rica: Investments made through the Provisioned Public Centers Program in 2019-2023

(yearly aggregate figures in millions of colones)

2019	2020	2021	2022	2023
9573	9573	9573	33 040	46 897
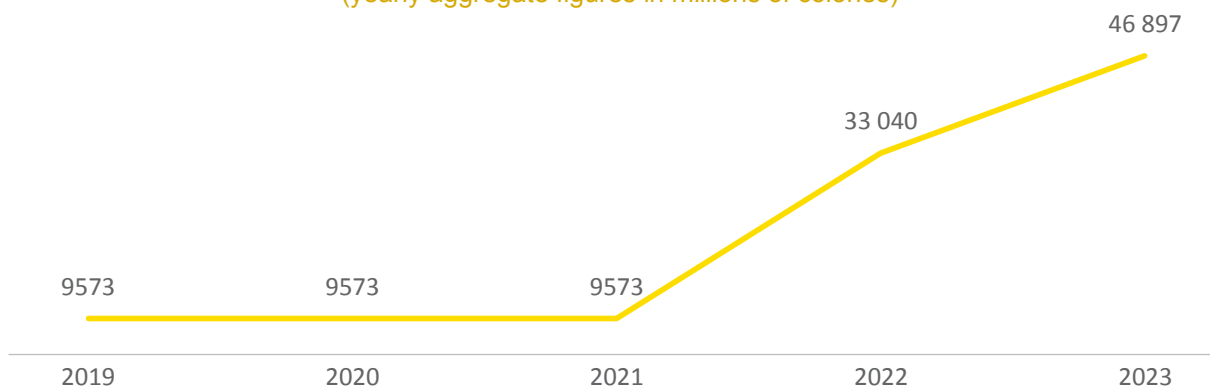
Source: SUTEL, General Directorate of FONATEL. Costa Rica, 2023.

Graph 256. Costa Rica: Zones with free Internet access made available through the Connected Public Spaces Program per status in 2023

- 37 / 7 %
- 65 / 13 %
- 411 / 80 %

Active subsidy

Completed subsidy with active service

Completed subsidy with inactive service
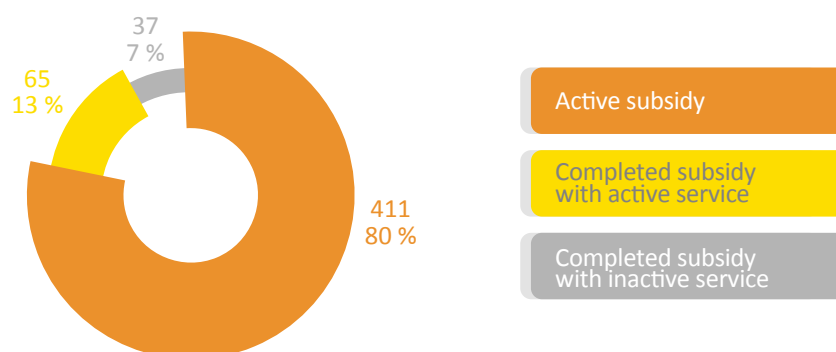
Source: SUTEL, General Directorate of FONATEL. Costa Rica, 2023.

Graph 257. Costa Rica: Total users and data traffic in zones with free Internet access made available through the Connected Public Spaces Program in 2019-2023

(yearly figures)

Total users: 399 218, 715 716, 1 683 033, 2 050 106, 1 531 524

Data traffic (GB): 85 869, 242 929, 1 003 223, 1 278 604, 718 123

	2019	2020	2021	2022	2023

···· Total users   — Data traffic (GB)
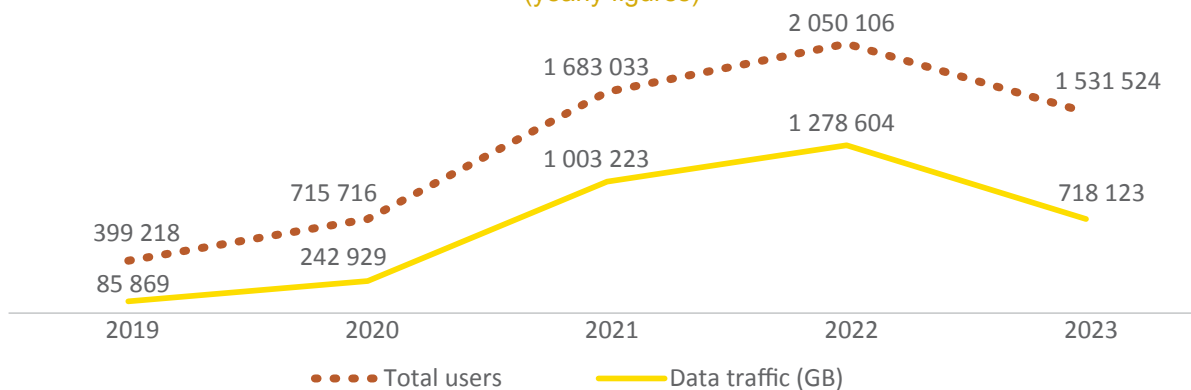
Source: SUTEL, General Directorate of FONATEL. Costa Rica, 2023.

Graph 258. Costa Rica: Hours of use and sessions initiated by users in zones with free Internet access made available through the Connected Public Spaces Program in 2019-2023
(yearly figures)

Year	Initiated sessions	Hours of use
2019	1 269 812	790 644
2020	2 957 749	1 358 995
2021	6 942 592	3 862 881
2022	8 078 085	4 754 899
2023	5 551 326	3 337 615

Legend: ▪▪▪ Hours of use — Initiated sessions
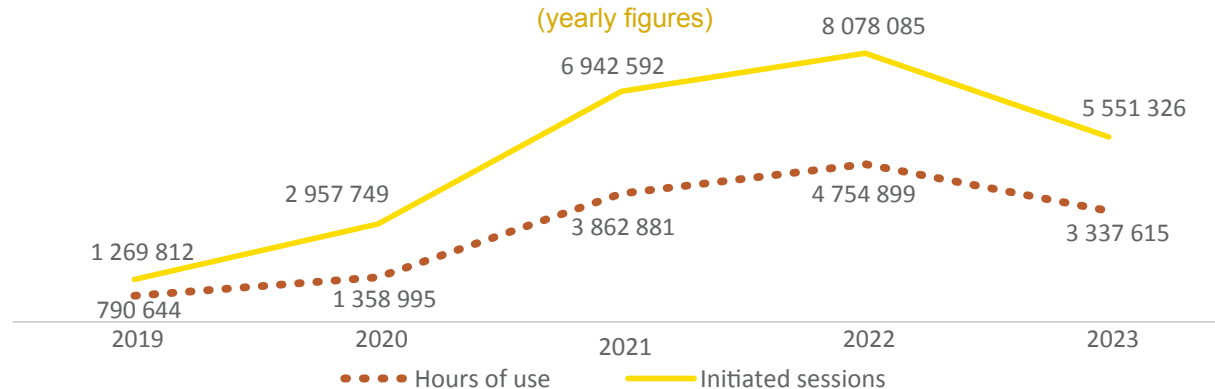
Source: SUTEL, General Directorate of FONATEL. Costa Rica, 2023.

Graph 259. Costa Rica: Investment made through the Connected Public Spaces Program in 2019-2023
(yearly aggregate figures in millions of colones)

Year	Investment
2019	981
2020	4721
2021	11 271
2022	18 978
2023	24 936
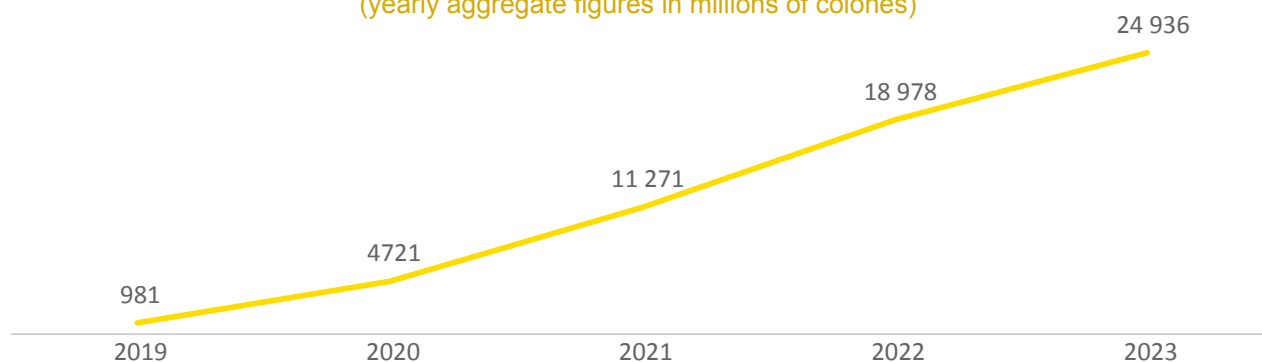
Source: SUTEL, General Directorate of FONATEL. Costa Rica, 2023.

Graph 260. Costa Rica: Achievement of the PNDT's Goal No.5: to achieve progress with FONATEL's area of focus in relation to the Bicentennial Education Network Program in 2022-2023

Year	FONATEL's area of focus	Achievement of goal
2022	25.8 %	26 %
2023	26.5 %	27 %

Legend: ● FONATEL's area of focus — Achievement of goal

Source: SUTEL, General Directorate of FONATEL. Costa Rica, 2023.

Graph 261. Costa Rica: Number of education centers connected through the Bicentennial Education Network Program in 2021-2022
(half-yearly aggregate figures)

	1st Sem 2021	2st Sem 2021	1st Sem 2022	2st Sem 2022	1st Sem 2023	2st Sem 2023
	3	83	383	600	665	682
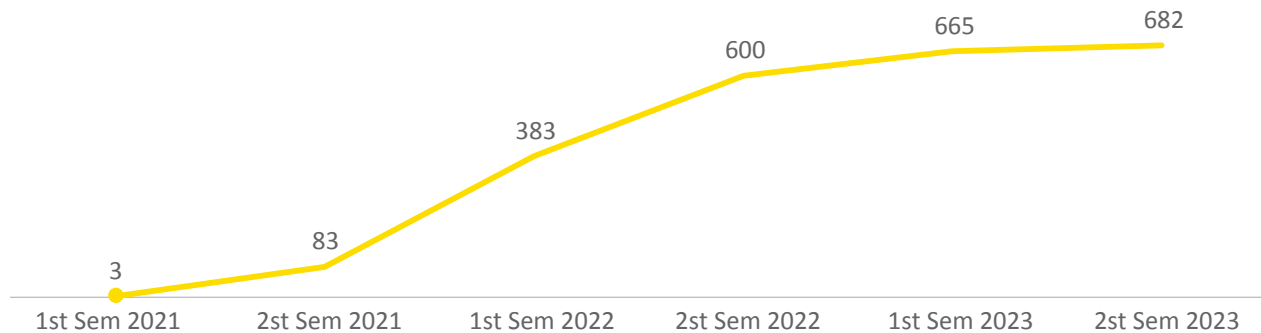
Source: SUTEL, General Directorate of FONATEL. Costa Rica, 2023.

Graph 262. Costa Rica: Number of education centers served through the Bicentennial Education Network Program, per status, in 2021-2023

Status	2023	2022	2021
ECs visited for analysis	748	725	487
ECs where the technical requirements for installation have been met	747	725	485
ECs with a fully approved solution	693	642	283
ECs with a fully approved solution	685	625	262
ECs provided with connectivity and internal networks	682	601	168
ECs connected to the Bicentennial Education Network	682	600	133
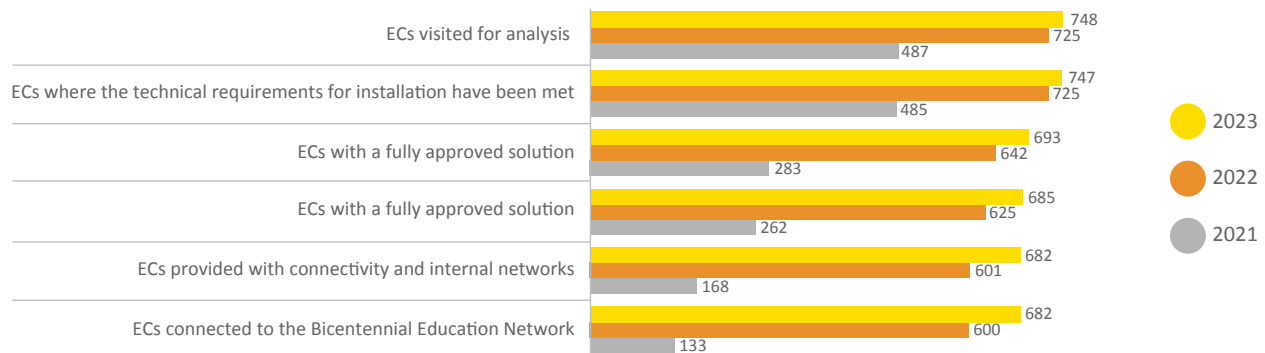
Note: EC = Education Center
Source: SUTEL, General Directorate of FONATEL. Costa Rica, 2023.

Graph 263. Costa Rica. Number of education centers connected through the Bicentennial Education Network Program per broadband speed in Mbps in 2021-2023
(figures in percentage terms)

	2021 (133)	2022 (600)	2023 (682)
15 Mbps (outline)	2 %	2 %	2 %
300 Mbps	11 %	11 %	10 %
175 Mbps	30 %	24 %	23 %
100 Mbps	52 %	50 %	52 %
100 Mbps (light)	4 %	9 %	8 %
15 Mbps	2 %	6 %	5 %

Legend: 500 Mbps, 300 Mbps, 175 Mbps, 100 Mbps, 100 Mbps, 15 Mbps, 15 Mbps
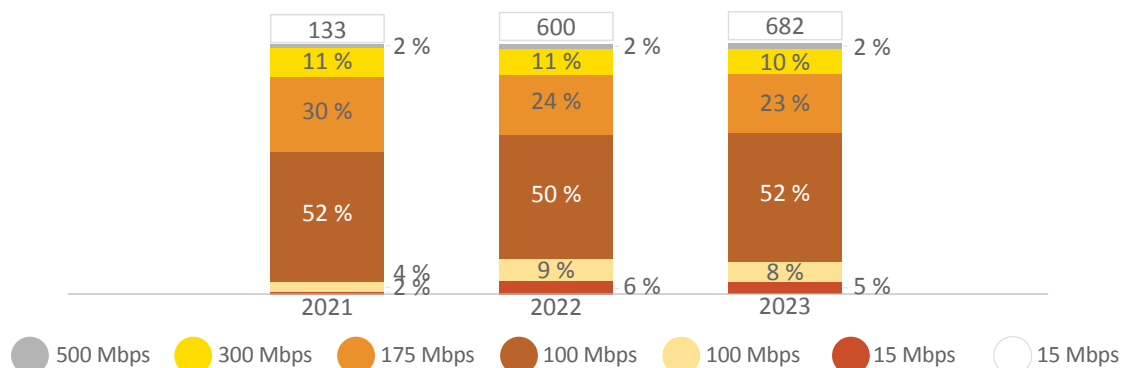
Source: SUTEL, General Directorate of FONATEL. Costa Rica, 2023.

Graph 264. Costa Rica: Percentage of education centers connected through the Bicentennial Education Network Program, per operator, in 2021-2023

(figures in percentage terms)

	133	600	682
Liberty		7 %	6 %
RACSA-ICE-PC	11 %	23 %	30 %
Coopeguanacaste	29 %	41 %	37 %
Telecable	59 %	30 %	27 %
	2021	2022	2023

● Liberty   ● RACSA-ICE-PC   ● Coopeguanacaste   ● Telecable   ○ Total number of centers
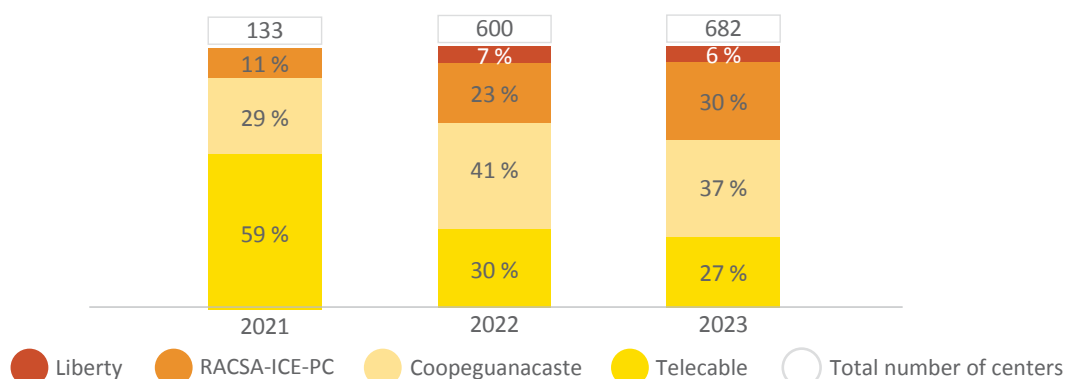
Source: SUTEL, General Directorate of FONATEL. Costa Rica, 2023.

Graph 265. Costa Rica: Districts with coverage under the Bicentennial Education Network Program in 2021-2023

(Figures in quantity and percentage terms)

	1st Sem 2021	2st Sem 2021	1st Sem 2022	1st Sem 2022	1st Sem 2023	2st Sem 2023
%	0 %	12 %	24 %	33 %	34 %	36 %
quantity	2	57	115	162	169	176
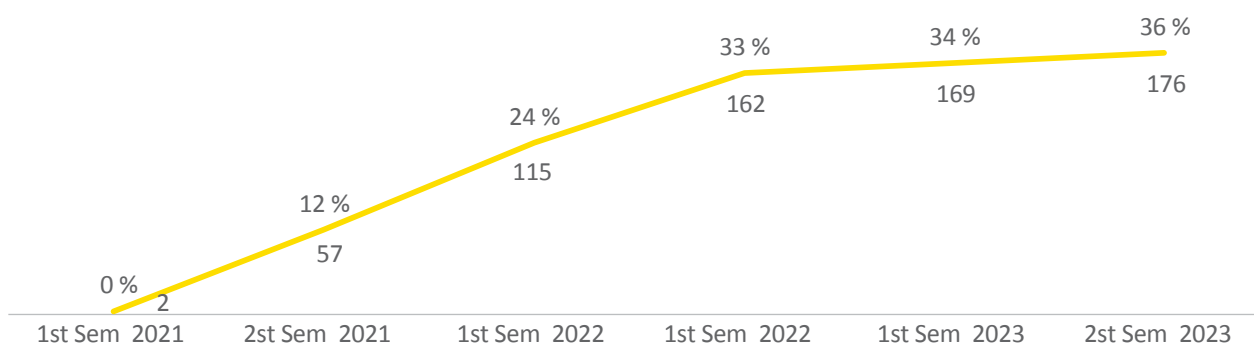
Source: SUTEL, General Directorate of FONATEL. Costa Rica, 2023.

Graph 266. Costa Rica: Percentage of education centers connected through the Bicentennial Education Network Program, per province, in 2021-2023

(figures in percentage terms)

	133	600	682
Limon	8 %	17 %	23 %
Puntarenas	34 %	18 %	16 %
Guanacaste	25 %	16 %	15 %
Cartago		3 %	4 %
Heredia	2 %	6 %	5 %
Alajuela	5 %	26 %	23 %
San Jose	28 %	15 %	14 %
	2021	2022	2023

● Limon   ● Puntarenas   ● Guanacaste   ● Cartago   ● Heredia   ● Alajuela   ● San Jose   ○ Total number of centers
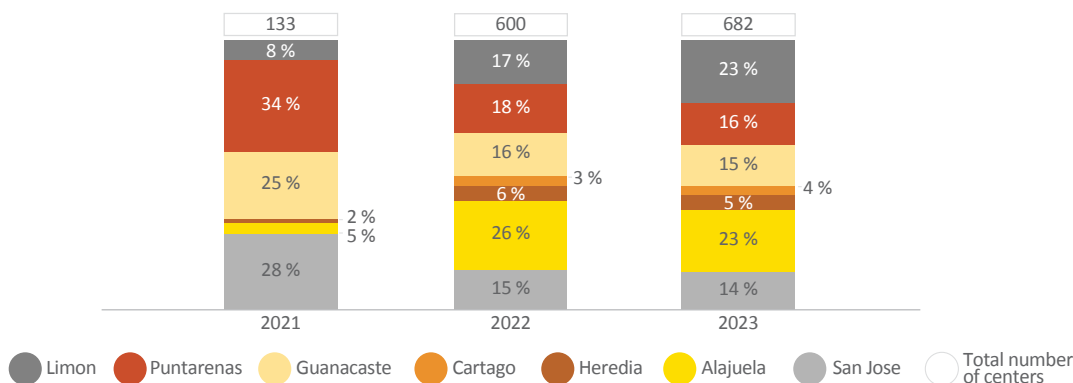
Source: SUTEL, General Directorate of FONATEL. Costa Rica, 2023.

Map 6. Costa Rica: Districts with coverage under the Bicentennial Education Network Program in 2023

Program presence: ● No ● Yes
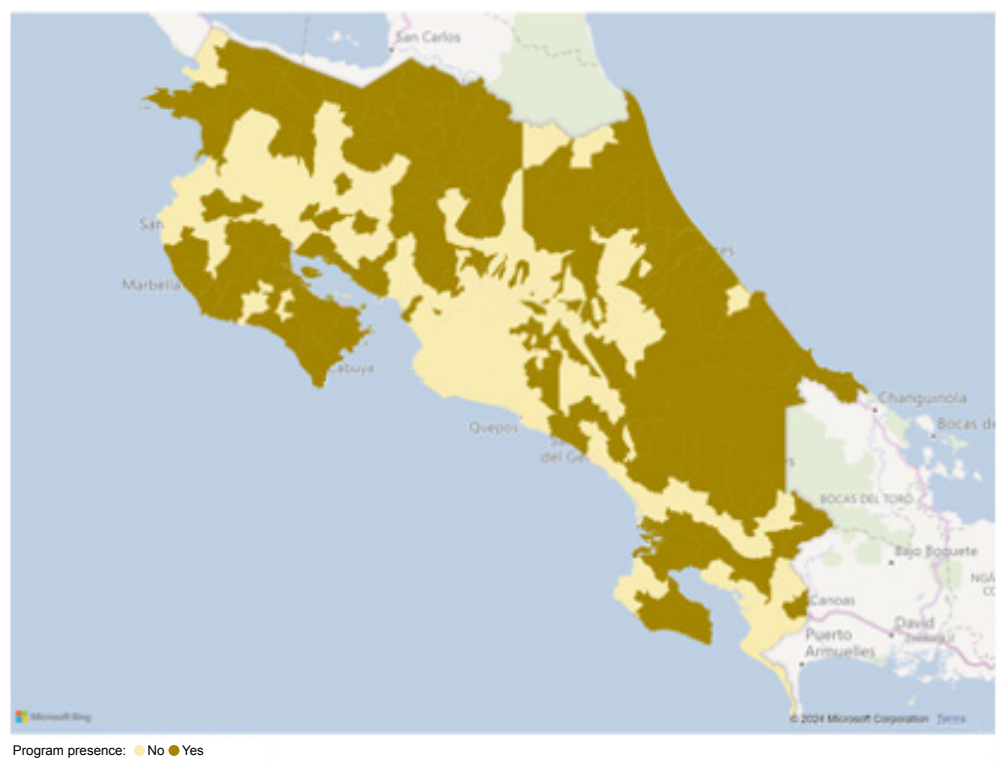
Source: SUTEL, General Directorate of FONATEL. Costa Rica, 2023.

Graph 267. Costa Rica: Number of students enrolled in the education centers connected through the Bicentennial Education Network Program in 2021-2023
(half-yearly aggregate figures)

532	33 643	87 881	141 861	158 963	161 564
1st Sem 2021	2st Sem 2021	1st Sem 2022	2st Sem 2022	1st Sem 2023	2st Sem 2023
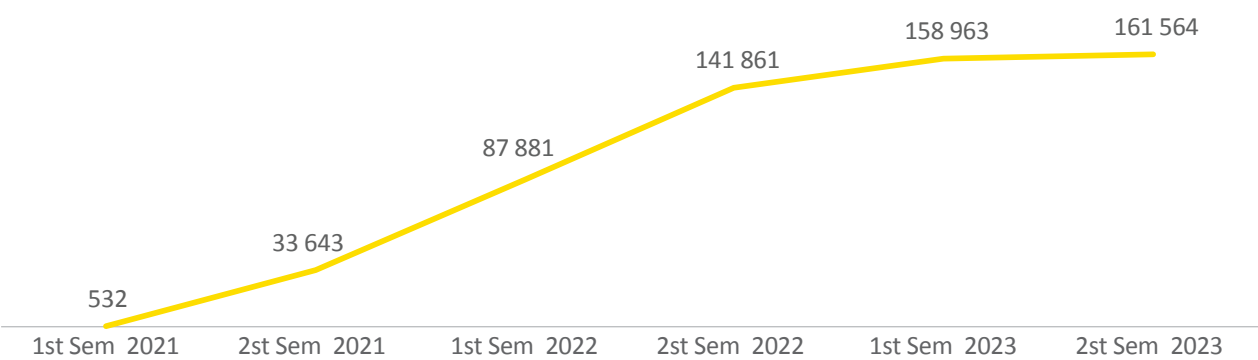
Source: SUTEL, General Directorate of FONATEL. Costa Rica, 2023.

Graph 268. Costa Rica: Investments made through the Bicentennial Education Network Program in 2021-2023

(yearly aggregate figures in millions of colones)

Year	Value
2021	1013
2022	4659
2023	7417
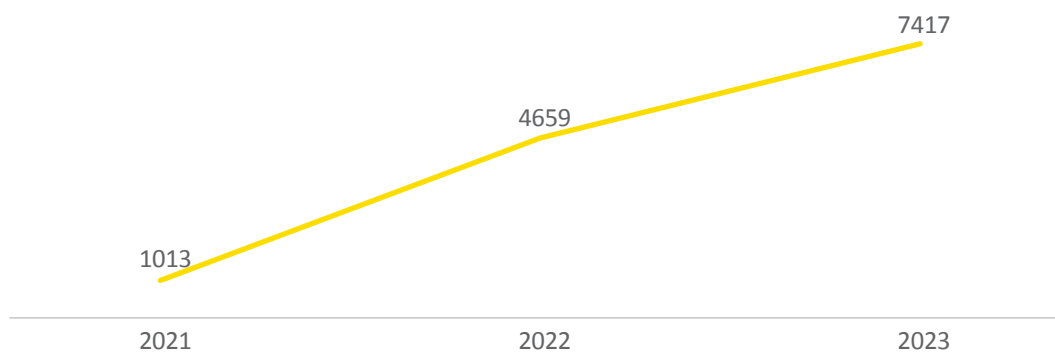
Source: SUTEL, General Directorate of FONATEL. Costa Rica, 2023.

) INTERNATIONAL

2023

> **In regard to mobile telephony services (which include prepaid and postpaid plans), Costa Rica is among the countries with the highest penetration,**
>
> **ranking among the world's best in 2022, with a penetration of 152 %, surpassing countries such as Korea, Finland and Denmark, among other European countries.**

INTERNATIONAL

The purpose of this section is to examine Costa Rica's international ranking, to measure how much the telecommunications sector has contributed to the development of the country, and to analyze the behavior and trends of the different services across international markets[75].

The indicators under analysis make it possible to determine Costa Rica's position in terms of the key performance indicators of the leading telecommunication countries and Latin American countries. The countries used for comparison have the most developed Information and Communications Technology [ICT], namely the European and Asian countries. In the case of Latin America, the countries used for comparison were the ones that had information available for the years under analysis.

This analysis compares the fixed telephony services, the mobile telecommunication services (mobile telephony and mobile Internet), and the fixed Internet services in relation to the number of subscribers and their total penetration (measured in terms of subscriptions). The allows the comparability of data across countries.

The penetration of fixed telephony services (POTS & VoIP), which is the ratio of users to the country's total population, has shown a downward trend in recent years. This situation is not exclusive to Costa Rica, as the number of subscriptions to this service continues to decline in countries such as the United Kingdom (4.3 % less than in 2021), which is ranked first in terms of penetration, followed by Korea, Switzerland, and Singapore (which exhibit largely the same level of penetration reported in 2021), among others. Latin American countries show a similar behavior, but with a slower development. This was the case in countries like Argentina, Brazil, and Chile, among others, where the penetration of this service remained largely unchanged, as opposed to countries like Mexico, Uruguay, and Panama, where penetration increased.

In 2022, according to the ITU, the countries with the highest fixed telephony penetration were the United Kingdom, Korea, and Switzerland, with 44.1 %, 44 %, and 33.4 %, respectively. The market penetration in Costa Rica reached 9.5 % in 2022, placing the country in the tenth position in the Latin American ranking, behind Uruguay, Mexico, Panama, Argentina, Brazil, Chile, and Colombia (see Graph 269). Notably, Costa Rica placed in the exact same rank in relation to 2021. The market penetration of fixed telephony services in Costa Rica increased by 12 % in 2023 (see the fixed telephony section of this report).

In regard to mobile telephony services (which include prepaid and postpaid plans), Costa Rica is among the countries with the highest penetration, ranking among the world's best in 2022, with a penetration of 152 %, surpassing countries such as Korea, Finland, Denmark and Sweden. It should also be noted that the level of penetration reported in 2023 (140.9 %) is consistent with the country's usual ranking, which generally ranks near the top, albeit with a slight decrease. The penetration reported in 2022 is nevertheless higher than the penetration reported by all other countries in 2021 (152 %), as shown in Graph 270.

In regard to mobile telephony services per payment option, the share of prepaid subscriptions showed a downward trend in relation to 2021, and yet Costa

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75   At the time of this report, the International Telecommunication Union [ITU] had not yet made public the information for 2023. As such, this information could not be included in this report.

Rica continues to rank among the countries with the largest share of prepaid subscriptions. This year it is ranked 6th, behind Guatemala, Panama, Mexico, Colombia, and the Dominican Republic. These results directly contradict the trends shown in European and Asian countries, where the ratio is inverted, as shown in Graph 271.

Similarly to the 2022 report on the Statistics of the Telecommunications Sector in Costa Rica, the ratio of prepaid subscription to per capita income continues to show an inverse relationship in accordance with the data included in the ITU's 2022 report. Mobile telephony subscribers in countries with a higher level of development and greater purchasing power generally prefer to purchase postpaid subscriptions, while users in countries with less purchasing power generally prefer to purchase prepaid subscriptions. Refer to Graph 272 for a detailed breakdown. Over the last five years, the percentage weight of postpaid subscriptions in Costa Rica increased from 33 % in 2019 to 43 % in 2023.

The penetration of fixed Internet services per every 100 inhabitants has shown a slight upward trend year-over-year (1 %), reaching a total of 21.3 % and surpassing Mexico and Brazil in 2022. In the case of Chile, this indicator increased by 1 % in relation to 2021. Uruguay, however, continues to rank 1st in Latin America with 33.2 %. In accordance with data provided by the ITU in 2022, European countries show values that are more than double than what is reported in Costa Rica, with Switzerland, Norway, Korea, Denmark and the Netherlands reporting values that approximate or exceed 45 %.

In regard to the penetration of mobile Internet services in 2022, Costa Rica continues to rank among the first places in Latin America, behind Uruguay, Chile, and Panama. At the global level, the United States, Finland, Singapore, and Denmark rank among the highest. Refer to Graph 274 for a detailed breakdown.

Graph 269. Fixed telephony subscriptions per every 100 inhabitants in 2022
(figures in percentage terms)
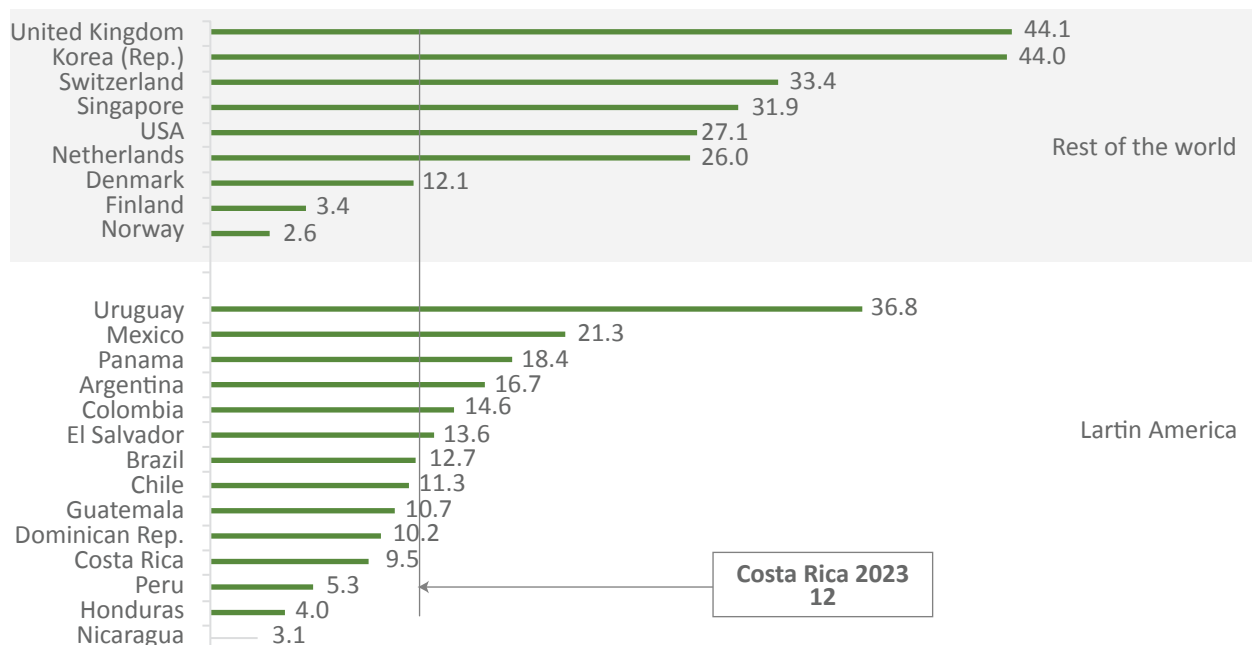
Note: Includes POTS and VoIP subscriptions.
Source: SUTEL, General Directorate of Markets, with information from the ITU. Costa Rica, 2022-2023.

Graph 270. Mobile telephony subscriptions per every 100 inhabitants in 2022

(figures in percentage terms)

Rest of the world

Country	Value
Sweden	156.5
Korea (Rep.)	148.6
Finland	128.7
Denmark	126.5
Sweden	125.1
United Kingdom	120.8
Switzerland	119.6
Netherlands	118.1
Norway	110.7
USA	110.2

Latin America

Country	Value
El Salvador	181.6
Panama	156.3
Colombia	155.8
Costa Rica	152.0
Uruguay	138.5
Chile	134.7
Argentina	132.4
Peru	122.0
Guatemala	115.2
Mexico	100.3
Brazil	98.9
Dominican Rep.	90.4
Honduras	76.1

Costa Rica 2023 140.9
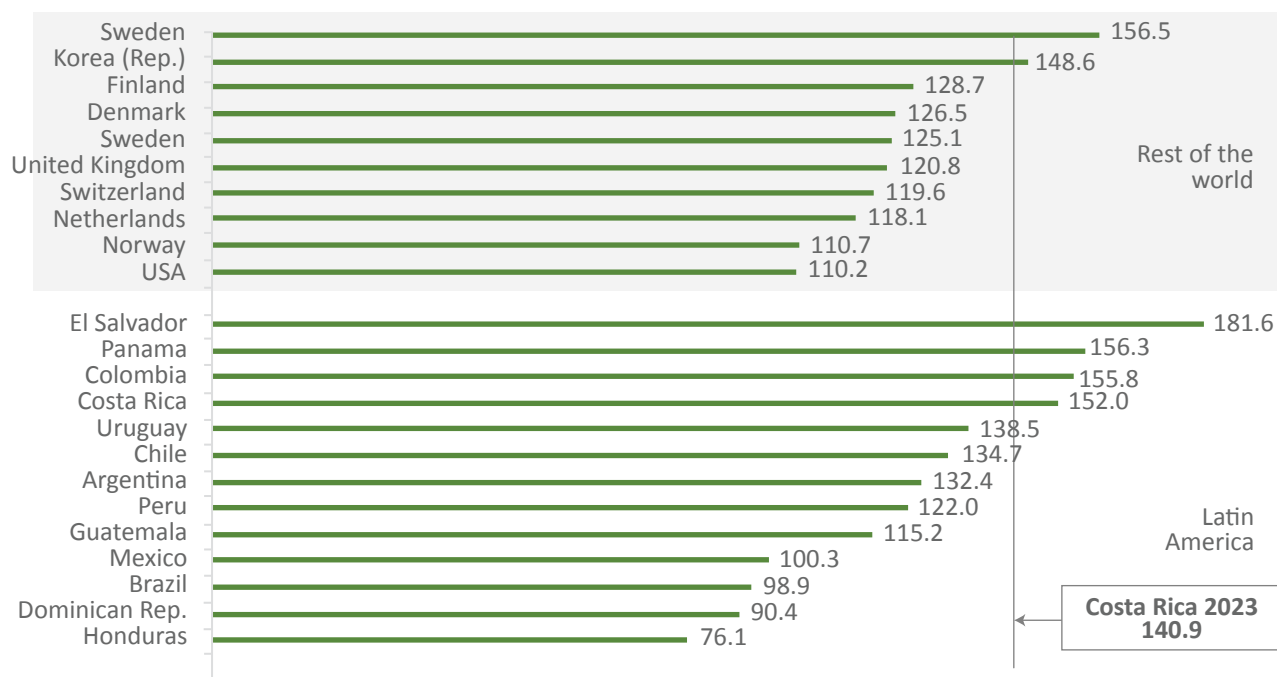
Source: SUTEL, General Directorate of Markets, with information from the ITU. Costa Rica, 2022-2023.

Graph 271. Percentage distribution of postpaid and prepaid mobile telephony subscriptions in 2022

(figures in percentage terms)

Country	Prepaid	Postpaid
Guatemala	90.5 %	9.5 %
Panama	81.9 %	18.1%
Mexico	74.4 %	25.6 %
Colombia	72.6 %	27.4 %
Dominican Rep.	71.2 %	28.8 %
Costa Rica	65.3 %	34.7 %
Uruguay	59.0 %	40.7 %
Brazil	56.0 %	44.0 %
Chile	35.0 %	65.5 %
United Kingdom	26.3 %	73.7 %
Singapore	22.0 %	78.0 %
Switzerland	21.4 %	78.6%
Finland	9.2 %	90.8 %
Netherlands	8.0 %	92.0 %
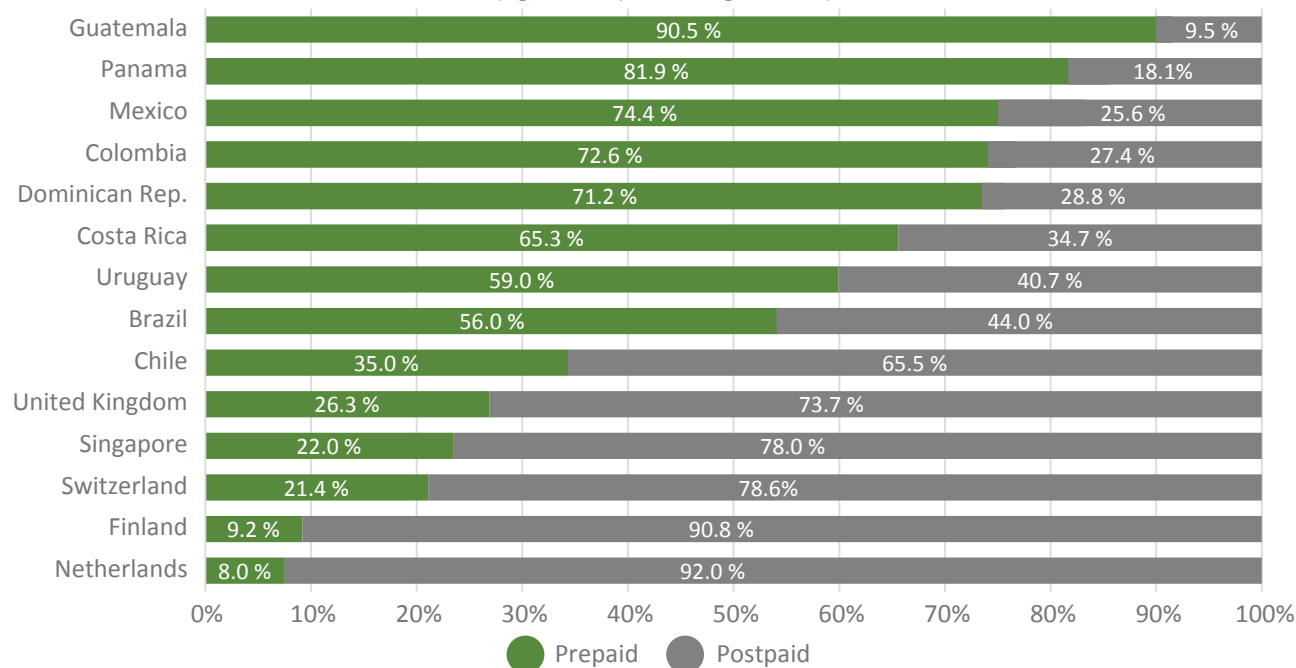
● Prepaid ● Postpaid

Note: In Costa Rica, the proportion of prepaid subscriptions was reported to be 57% of the total in 2023, while postpaid subscriptions accouted for the remaining 43%.

Source: SUTEL, General Directorate of Markets, with information from the ITU. Costa Rica, 2022-2023.

Graph 272. Average income per capita vs percentage of prepaid subscriptions in 2022
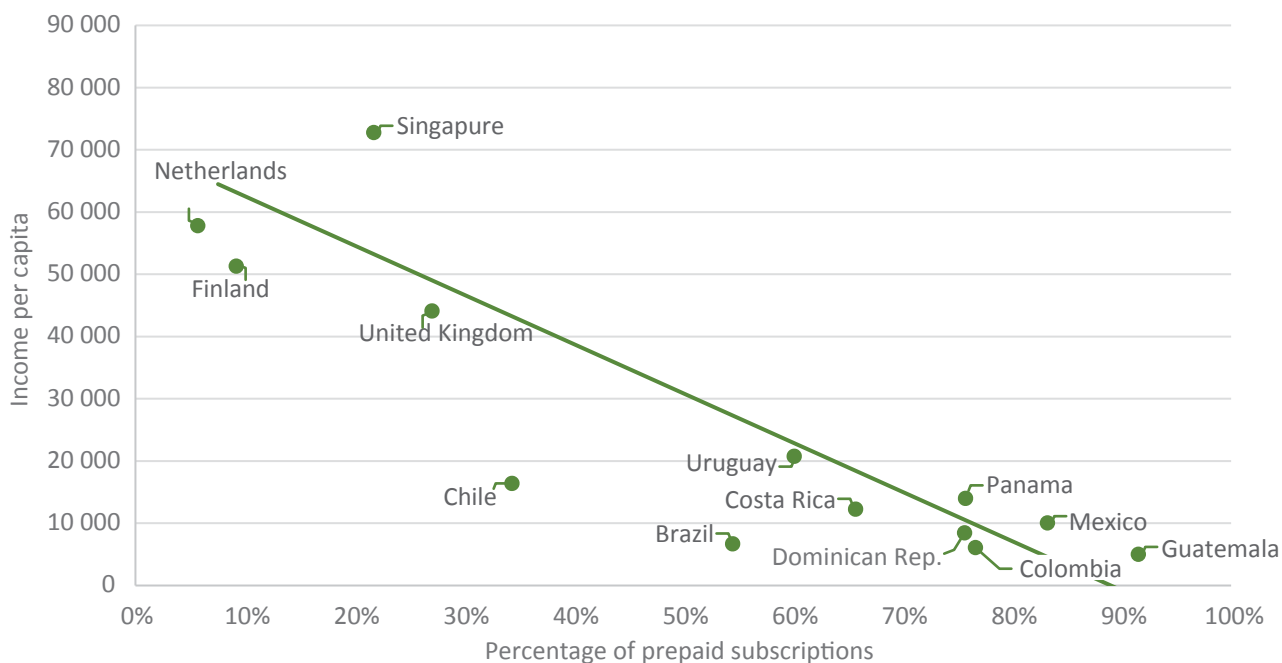
Source: SUTEL, General Directorate of Markets, with information from the World Bank and the ITU. Costa Rica, 2022-2023.

Graph 273. Market penetration of fixed Internet services per every 100 inhabitants in 2022
(Figures in percentage terms)

Rest of the world

Country	Value
Switzerland	49.5
Norway	45.8
Korea (Rep.)	45.4
Denmark	44.8
Netherlands	44.5
United Kingdom	41.5
Sweden	40.4
USA	37.6
Singapore	37.4
Finland	33.9

Latin America

Country	Value
Uruguay	33.2
Argentina	24.6
Chile	22.7
Costa Rica	21.3
Brazil	21.0
Mexico	19.5
Colombia	17.0
Panama	15.5
Dominican Rep.	10.7
El Salvador	10.6
Peru	9.3
Nicaragua	4.9
Honduras	4.5
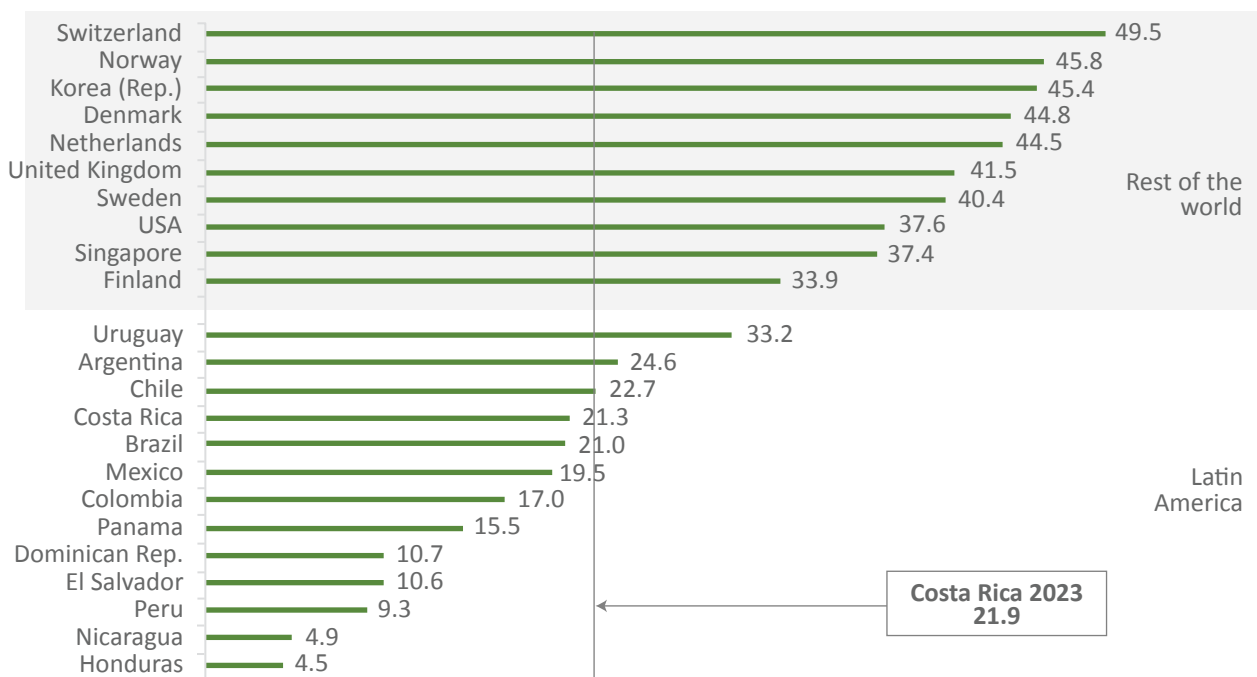
Costa Rica 2023 21.9

Source: SUTEL, General Directorate of Markets, with information from the ITU. Costa Rica, 2022-2023.

Graph 274. Market penetration of mobile Internet services per every 100 inhabitants in 2022

(Figures in percentage terms)

Country	Value	Region
USA	173.5	Rest of the world
Finland	160.4	
Singapore	156.5	
Denmark	142.3	
Sweden	128.3	
Netherlands	123.3	
Korea (Rep.)	120.1	
United Kingdom	115.1	
Switzerland	100.8	
Norway	98.3	
Uruguay	115.8	Lantin America
Chile	109.5	
Panama	96.8	
Costa Rica	96.5	
Brazil	93.1	
Mexico	87.9	
Peru	85.3	
Colombia	76.2	
El Salvador	74.9	
Dominican Rep.	71.6	
Honduras	49.6	
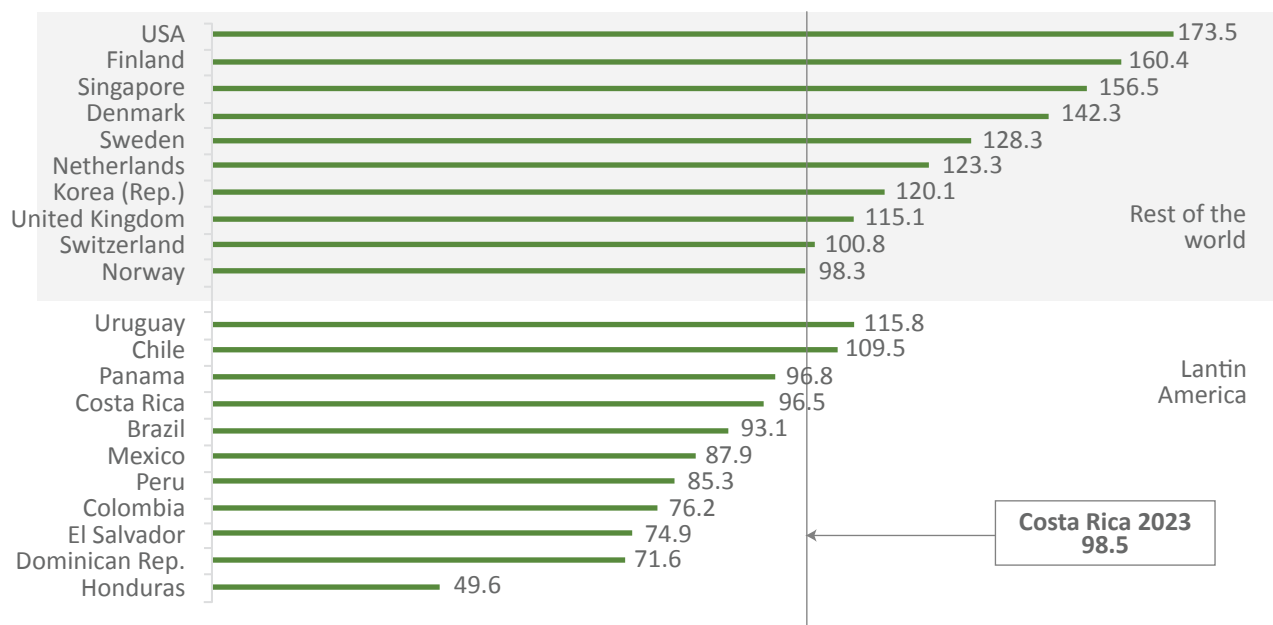
**Costa Rica 2023
98.5**

Source: SUTEL, General Directorate of Markets, with information from the ITU. Costa Rica, 2022-2023.

APPENDIX
OF STATISTICS

2023

Table 23. Costa Rica: Total revenue generated by the Telecommunications Sector in 2019-2023

(quarterly figures in millions of colones)

Indicator	2019				2020			
	Q1 2019	Q2 2019	Q3 2019	Q4 2019	Q1 2020	Q2 2020	Q3 2020	Q4 2020
Millions of colones	194 881	193 612	190 461	186 515	184 737	181 004	180 846	182 613
Variation rate	1.7 %	-1.7 %	-1.0 %	2.8 %	1.2 %	-0.7 %	-1.6 %	-2.1 %

Indicator	2021				2022			
	Q1 2021	Q2 2021	Q3 2021	Q4 2021	Q1 2022	Q2 2022	Q3 2022	Q4 2022
Millions of colones	183 678	183 761	181 720	182 198	182 185	184 356	181 859	182 499
Variation rate	-1.0 %	-2.0 %	-0.1 %	1.0 %	0.6 %	0.0 %	-1.1 %	0.3 %

Indicator	2023				2019	2020	2021	2022	2023
	Q1 2023	Q2 2023	Q3 2023	Q4 2023					
Millions of colones	179 819	180 267	180 268	191 713	765 469	729 200	731 357	730 898	732 363
Variation rate	0.6 %	0.1 %	-1.2 %	0.3 %	0.5 %	-4.7 %	0.3 %	-0.1 %	0.2 %

Source: SUTEL, General Directorate of Markets. Costa Rica, 2023.

Table 24. Costa Rica: Total revenue generated by the Telecommunications Sector per type of service in 2019-2023

(quarterly figures in millions of colones)

	Q1 2019	Q2 2019	Q3 2019	Q4 T 2019	Q1 2020	Q2 2020	Q3 2020	Q4 2020
POTS & VoIP	16 357	15 590	14 555	13 328	12 440	12 162	11 824	11 268
Mobile telephony (voice calls & messaging)	61 042	58 934	55 670	54 497	54 215	51 180	50 672	49 875
Internet access (includes mobile Internet access)	104 674	107 266	107 565	106 499	106 417	105 551	105 634	108 635
Dedicated lines	12 809	11 821	12 672	12 190	11 664	12 110	12 716	12 835
Total	194 881	193 612	190 461	186 515	184 737	181 004	180 846	182 613

	Q1 2021	Q2 2021	Q3 2021	Q4 2021	Q1 2022	Q2 2022	Q3 2022	Q4 2022
POTS & VoIP	10 439	10 065	9397	8887	8563	8330	7988	7654
Mobile telephony (voice calls & messaging)	49 667	48 823	47 069	45 901	46 345	45 923	45 754	46 136
Internet access (includes mobile Internet access)	109 964	111 587	112 091	113 581	116 098	117 897	117 117	117 178
Dedicated lines	13 608	13 286	13 162	13 830	11 179	12 205	10 999	11 531
Total	183 678	183 761	181 720	182 198	182 185	184 356	181 859	182 499

	Q1 2023	Q2 2023	Q3 2023	Q4 2023
POTS & VoIP	7 220	6 933	6 707	8 834
Mobile telephony (voice calls & messaging)	42 107	44 250	44 648	49 799
Internet access (includes mobile Internet access)	119 820	119 341	119 237	122 937
Dedicated lines	10 671	9 743	9 677	10 440
Total	179 819	180 267	180 268	192 713

Source: SUTEL, General Directorate of Markets. Costa Rica, 2023.

Table 25. Costa Rica: Total revenue generated by the Telecommunications Sector per type of service in 2019-2023
(yearly figures in millions of colones)

	2019	2020	2021	2022	2023
Mobile telephony (only voice calls)	230 143	205 942	191 460	184 158	180 803
POTS & VoIP telephony	59 830	47 695	38 787	32 535	29 694
Internet access (includes mobile Internet access)	426 003	426 237	447 224	468 290	481 334
Dedicated lines	49 492	49 326	53 886	45 915	40 531
Total	765 469	729 200	731 357	730 898	732 363

Source: SUTEL, General Directorate of Markets. Costa Rica, 2023.

Table 26. Costa Rica: Total revenue generated by the Telecommunications Sector per type of service in 2019-2023
(yearly figures in percentage terms)

	2019	2020	2021	2022	2023
Mobile telephony (only voice calls)	30 %	28 %	26 %	25 %	25 %
POTS & VoIP telephony	8 %	6 %	5 %	4 %	4 %
Internet access (includes mobile Internet access)	56 %	59 %	61 %	64 %	66 %
Dedicated lines	6 %	7 %	8 %	7 %	5 %
Total	100 %	101 %	100 %	100 %	100 %

Source: SUTEL, General Directorate of Markets. Costa Rica, 2023.

Table 27. Costa Rica: Total revenue generated by the Telecommunications Sector per type of service in 2019-2023
(yearly figures in millions of colones)

	2019	2020	2021	2022	2023
Mobile telephony (only voice calls)	495 629	461 300	446 200	445 973	460 180
POTS & VoIP telephony	59 830	47 695	38 787	32 535	29 694
Internet access (includes mobile Internet access)	160 518	170 879	192 484	206 476	201 957
Dedicated lines	49 492	49 326	53 886	45 915	40 531
Total	765 469	729 200	731 357	730 898	732 363

Source: SUTEL, General Directorate of Markets. Costa Rica, 2023.

Table 28. Costa Rica: Total revenue generated by the Telecommunications Sector per type of service in 2019-2023

(yearly figures in percentage terms)

	2019	2020	2021	2022	2023
Mobile telephony & mobile Internet access (mobile network)	65 %	63 %	61 %	61 %	63 %
POTS & VoIP telephony	8 %	7 %	5 %	4 %	4 %
Fixed Internet access	21 %	23 %	27 %	28 %	28 %
Dedicated lines	6 %	7 %	7 %	6 %	5 %
Total	**100 %**	**100 %**	**100 %**	**100 %**	**100 %**

Source: SUTEL, General Directorate of Markets. Costa Rica, 2023.

Table 29. Costa Rica: Telecommunications Sector's Workforce in 2019-2023

(half-yearly and yearly figures in absolute terms)

Indicator	2019		2020		2021	
	Sem 1	Sem 2	Sem 1	Sem 2	Sem 1	Sem 2
Number of people	194 881	193 612	184 737	181 004	194 881	193 612
Variation rate	1.7 %	-1.7 %	1.2 %	-0.7 %	1.7 %	-1.7 %

Indicator	2019		2019	2020	2021	2022	2023
	Sem 1	Sem 2					
Number of people	194 881	193 612	765 469	729 200	731 357	730 898	732 067
Variation rate	1.7 %	-1.7 %	0.5 %	-4.7 %	0.3 %	-0.1 %	0.2 %

Source: SUTEL, General Directorate of Markets. Costa Rica, 2023.

Table 30. Costa Rica: Percentage of the Telecommunications Sector's workforce in relation to the economically active population in 2019-2023

(Yearly figures in percentage terms)

Indicator	2019	2020	2021	2022	2023
Country's total	2.448.045	2.406.533	2.453.173	2.454.023	2.299.897
Telecommunications sector	10.761	10.991	10.875	10.305	9.811
Percentage	0,44 %	0,46 %	0,44 %	0,42 %	0,43 %
Variation rate	-12 %	4 %	-3 %	-5 %	2 %

Source: SUTEL, General Directorate of Markets & National Institute of Statistics and Censuses [INEC] (Continuous Employment Survey). Costa Rica, 2023.

Table 31. Costa Rica: Percentage of the Telecommunications Sector's workforce in relation to the total population in 2019-2023

(yearly figures in percentage terms)

Indicator	2019	2020	2021	2022	2023
Total population	5 058 007	5 111 238	5 163 038	5 213 362	5 262 225
Telecommunications sector's workforce	10 761	10 991	10 875	10 305	9811
Percentage	0,21 %	0,22 %	0,21 %	0,20 %	0,19 %

Source: SUTEL, General Directorate of Markets & National Institute of Statistics and Censuses [INEC] (Continuous Employment Survey). Costa Rica, 2023.

Table 32. Costa Rica: Telecommunications Sector's Female Workforce in 2019-2023

(half-yearly figures in absolute terms)

Indicator	2019		2020		2021	
	Sem 1	Sem 2	Sem 1	Sem 2	Sem 1	Sem 2
Number of people	2504	3244	3230	3279	3261	3227
Half-yearly variation rate	-23 %	30 %	0 %	2 %	0 %	2 %
Yearly variation rate	-18 %	0 %	29 %	1 %	1 %	-2 %

Indicator	2022		2023	
	I Sem	II Sem	I Sem	II Sem
Number of people	3012	3578	3196	3213
Half-yearly variation rate	-7 %	19 %	-11 %	1 %
Yearly variation rate	-8 %	11 %	6 %	-10 %

Source: SUTEL, General Directorate of Markets & National Institute of Statistics and Censuses [INEC] (Continuous Employment Survey). Costa Rica, 2023.

Table 33. Costa Rica: Plain old telephone service [POTS] & VoIP telephony subscriptions in 2019-2023
(year-end figures)

Indicator	2019	2020	2021	2022	2023
Total	636 504	556 617	500 550	488 930	629 531
POTS	571 808	504 276	443 684	410 454	362 023
VoIP	64 696	52 341	56 866	78 476	267 508

Source: SUTEL, General Directorate of Markets. Costa Rica, 2023.

Table 34. Costa Rica: Plain old telephone service [POTS] & VoIP telephony subscriptions in 2022-2023
(quarterly figures)

Indicator	2022				2023			
	I T	II T	III T	IV T	I T	II T	III T	IV T
Total	497 370	497 420	491 675	488 930	476 039	462 671	467 898	629 531
POTS	436 929	428 529	419 894	410 454	396 202	385 801	374 731	362 023
VoIP	60 441	68 891	71 781	78 476	79 837	76 870	93 167	267 508

Source: SUTEL, General Directorate of Markets. Costa Rica, 2023.

Table 35. Costa Rica: Number of public payphones in operation in 2019-2023
(year-end figures)

Indicator	2019	2020	2021	2022	2023
Public payphones	3798	3265	2905	2683	2454

Source: SUTEL, General Directorate of Markets. Costa Rica, 2023.

Table 36. Costa Rica: Fixed telephony traffic generated on-net and off-net (outbound) in 2019-2023
(yearly figures in millions of minutes and in percentage of variation)

Indicator	2019	2020	2021	2022	2023
Minutes	1871	1647	1353	1089	808
Variation rate		-12,0 %	-17,8 %	-19,5 %	-25,9 %

Source: SUTEL, General Directorate of Markets. Costa Rica, 2023.

Table 37. Costa Rica: Plain old telephone service [POTS] & VoIP telephony traffic generated on-net and off-net (outbound) in 2022-2023
(quarterly figures in millions of minutes and in percentage of variation)

Indicator	2022				2023			
	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4
Minutes	298	296	257	239	218	204	196	190
Variation rate		-0.7 %	-13.1 %	-7.3 %	-8.5 %	-6.6 %	-3.8 %	-3.1 %

Source: SUTEL, General Directorate of Markets. Costa Rica, 2023.

Table 38. Costa Rica: VoIP telephony traffic generated on-net and off-net (outbound) in 2019-2023
(Yearly figures in millions of minutes and in percentage of variation)

Indicator	2019	2020	2021	2022	2023
Minutes	241	183	177	199	242
Variation rate		-24,1 %	-3,3 %	12,1 %	21,6 %

Source: SUTEL, General Directorate of Markets. Costa Rica, 2023.

Table 39. Costa Rica: VoIP telephony traffic generated on-net and off-net (outbound) in 2022-2023
(Quarterly figures in millions of minutes and in percentage of variation)

Indicator	2022				2023			
	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4
Minutes	48	65	45	41	40	36	38	128
Variation rate		36.8 %	-30.6 %	-10.5 %	-1.7 %	-10.4 %	6.9 %	235.5 %

Source: SUTEL, General Directorate of Markets. Costa Rica, 2023.

Table 40. Costa Rica: Total revenue from fixed telephony services in 2019-2023
(yearly figures in millions of colones and in percentage of variation)

Indicador	2019	2020	2021	2022	2023
Monto	58 996	46 884	37 982	31 791	28 986
% variación		-20,5 %	-19,0 %	-16,3 %	- 8,8 %

Source: SUTEL, General Directorate of Markets. Costa Rica, 2023.

Table 41. Costa Rica: Total revenue from VoIP telephony services in 2019-2023
(Yearly figures in millions of colones and in percentage of variation)

Indicator	2019	2020	2021	2022	2023
Total amount	6856	6261	6205	6070	7888
Variation rate		-8,7 %	-0,9 %	-2,2 %	29,9 %

Source: SUTEL, General Directorate of Markets. Costa Rica, 2023.

Table 42. Costa Rica: Total revenue from plain old telephone service [POTS] & VoIP telephony in 2022-2023
(quarterly figures in millions of colones and in percentage of variation)

Indicator	2022				2023			
	Q1	Q2	Q3 T	Q4	Q1	Q2	Q3	Q4
Total amount	8370	8138	7808	7474	7052	6765	6538	8631
Variation rate		-2.8 %	-4.1 %	-4.3 %	-5.6 %	-4.1 %	-3.4 %	32 %

Source: SUTEL, General Directorate of Markets. Costa Rica, 2023.

Table 43. Costa Rica: Revenue from VoIP telephony services in 2022-2023
(quarterly figures in millions of colones and in percentage of variation)

Indicator	2022				2023			
	Q1	Q2	Q3 T	Q4	Q1	Q2	Q3	Q4
Total amount	1502	1520	1553	1495	1397	1416	1346	3728
Variation rate		1.2 %	2.1 %	-3.7 %	-6.5 %	1.4 %	-5.0 %	176,9 %

Source: SUTEL, General Directorate of Markets. Costa Rica, 2023.

Table 44. Costa Rica: Average revenue per subscriber from plain old telephone service [POTS] & VoIP telephony in 2019-2023
(yearly figures in thousands of colones and in percentage of variation)

Year	Average revenue			Percentage of variation		
	POTS	VoIP	Fixed Telephony	POTS	VoIP	Fixed Telephony
2019	91 184	105 980	92 688			
2020	80 556	119 624	84 230	-12 %	13 %	-9 %
2021	71 692	109 112	75 943	-11 %	-9 %	-10 %
2022	62 663	77 352	65 021	-13 %	-29 %	-14 %
2023	58 277	29 487	46 043	-7 %	-61,9 %	-29,2 %

Source: SUTEL, General Directorate of Markets. Costa Rica, 2023.

Table 45. Costa Rica: Average revenue per minute from plain old telephone service [POTS] & VoIP telephony in 2019-2023

(figures in colones and in percentage of variation)

Year	Average revenue			Percentage of variation		
	VoIP	POTS	Fixed Telephony	VoIP	POTS	Fixed Telephony
2019	28	32	32			
2020	34	28	28	20 %	-13 %	-10 %
2021	35	27	28	2 %	-3 %	-1 %
2022	31	29	29	-13 %	7 %	4 %
2023	33	37	36	7 %	29 %	23 %

Source: SUTEL, General Directorate of Markets. Costa Rica, 2023.

Table 46. Costa Rica: Total mobile telephony subscribers per operator in 2019-2023
(quarterly figures in thousands of subscribers and in percentage of variation)

Indicator	2019				2020				2021			
	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4
ICE	3039	3076	2928	3135	3150	3300	3131	3084	3057	3029	3025	3022
Variation rate	2.0 %	1.0 %	-5.0 %	7.0 %	0.0 %	5.0 %	-5.0 %	-1.0 %	-1.0 %	-1.0 %	0.0 %	0.0 %
Claro	1704	1644	1598	1616	1581	1484	1615	1524	1512	1485	1469	1496
Variation rate	5.0 %	-4.0 %	-3.0 %	1.0 %	-2.0 %	-6.0 %	9.0 %	-6.0 %	-1.0 %	-2.0 %	-1.0 %	2.0 %
Liberty	2298	2287	2429	2552	2702	2635	2716	2897	3044	3112	3186	3316
Variation rate	2.0 %	0.0 %	6.0 %	5.0 %	6.0 %	-2.0 %	3.0 %	7.0 %	5.0 %	2.0 %	2.0 %	4.0 %
Fullmóvil	22	9	7	7	7	7	7	7				
Variation rate	-53.0 %	-60.0 %	-22.0 %	0.0 %	0.0 %	0.0 %	0.0 %	0.0 %				
Tuyo Móvil	0	0										
Variation rate	-72.0 %	-100.0 %										
TOTAL	7063	7016	6962	7310	7440	7426	7468	7512	7613	7626	7680	7834
Variation rate	2.0 %	-1.0 %	-1.0 %	5.0 %	2.0 %	0.0 %	1.0 %	1.0 %	1.0 %	0.0 %	1.0 %	2.0 %

IndicaTor	2022				2023			
	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4
ICE	2931	2892	2878	2558	2562	2576	2567	2531
Variation rate	-3.0 %	-1.0 %	0.0 %	-11.0 %	0.0 %	1.0 %	0.0 %	-1.0 %
Claro	1589	1602	1608	1666	1453	1450	1486	1538
Variation rate	6.0 %	1.0 %	0.0 %	4.0 %	-13.0 %	0.0 %	3.0 %	3.0 %
Liberty	3440	3430	3510	3652	3432	3566	3562	3374
Variation rate	4.0 %	0.0 %	2.0 %	4.0 %	-6.0 %	4.0 %	0.0 %	-12.0 %
Fullmóvil								
Variation rate								
Tuyo Móvil								
Variation rate								
TOTAL	7960	7924	7997	7876	7447	7592	7616	7443
Variation rate	2.0 %	0.0 %	1.0 %	-2.0 %	-5.0 %	2.0 %	0.0 %	-2.0 %

Source: SUTEL, General Directorate of Markets. Costa Rica, 2023.

Table 47. Costa Rica: Total mobile telephony subscribers per payment plan in 2019-2023
(Quarterly figures in thousands of subscribers and in percentage of variation)

TOTAL	2019				2020				2021			
	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4
Prepaid	4885	4714	4597	4892	4923	4866	4936	5006	5088	5065	5062	5140
Variation rate	4.0 %	-4.0 %	-2.0 %	6.0 %	1.0 %	-1.0 %	1.0 %	1.0 %	4.0 %	0.0 %	0.0 %	2.0 %
Postpaid	2178	2302	2366	2418	2517	2560	2532	2506	2525	2561	2618	2695
Variation rate	-1.0 %	6.0 %	3.0 %	2.0 %	4.0 %	2.0 %	-1.0 %	-1.0 %	4.0 %	1.0 %	2.0 %	3.0 %
Total	**7063**	**7016**	**6962**	**7310**	**7440**	**7426**	**7468**	**7512**	**7613**	**7626**	**7680**	**7834**
Variation rate	**2.0 %**	**-1.0 %**	**-1.0 %**	**5.0 %**	**2.0 %**	**0.0 %**	**1.0 %**	**1.0 %**	**1.0 %**	**0.0 %**	**1.0 %**	**2.0 %**

TOTAL	2022				2023			
	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4
Prepaid	5155	5080	5119	4874	4398	4487	4461	4259
Variation rate	3.0 %	-1.0 %	1.0 %	-5.0 %	-14.0 %	2.0 %	-1.0 %	-10.0 %
Postpaid	2805	2844	2878	3002	3049	3105	3154	3184
Variation rate	12.0 %	1.0 %	1.0 %	4.0 %	13.0 %	2.0 %	2.0 %	1.0 %
Total	**7960**	**7924**	**7997**	**7876**	**7447**	**7592**	**7616**	**7443**
Variation rate	**2.0 %**	**0.0 %**	**1.0 %**	**-2.0 %**	**-5.0 %**	**2.0 %**	**0.0 %**	**-2.0 %**

Source: SUTEL, General Directorate of Markets. Costa Rica, 2023.

Table 48. Costa Rica: Mobile telephony service penetration per 100 inhabitants in 2019-2023
(yearly figures in percentage terms)

	2019	2020	2021	2022	2023
Mobile penetration	144.5 %	147.0 %	151.7 %	151.1 %	141.4 %

Source: SUTEL, General Directorate of Markets. Costa Rica, 2023.

Table 49. Costa Rica: Share of mobile telephony subscriptions by operator per payment plan in 2019-2023
(Yearly figures in percentage terms)

	2019	2020	2021	2022	2023
Prepaid					
ICE	36,0 %	35,0 %	34,0 %	25,0 %	28,0 %
Claro	22,0 %	20,0 %	17,0 %	20,0 %	19,0 %
Liberty	42,0 %	45,0 %	50,0 %	55,0 %	53,0 %
Postpaid					
ICE	57,0 %	53,0 %	48,0 %	44,0 %	42,0 %
Claro	22,0 %	21,0 %	24,0 %	23,0 %	23,0 %
Liberty	21,0 %	25,0 %	28,0 %	33,0 %	35,0 %

Source: SUTEL, General Directorate of Markets. Costa Rica, 2023.

Table 50. Costa Rica: Total revenue generated by mobile telecommunications per category in 2019-2023
(yearly figures in millions of colones)

	2019	2020	2021	2022	2023
Mobile telecommunications	495 629	461 300	446 199	445 973	460 180
Mobile telephony	225 872	204 662	189 790	181 327	177 930
Voice	218 257	198 835	184 121	175 526	174 598
SMS/MMS	7615	5827	5669	5801	3332
Outbound roaming	4271	1281	1670	2831	2874
Voice	1838	596	510	557	479
SMS/MMS	338	212	226	353	252
Roaming data	2095	472	934	1921	2143
Mobile data	265 485	255 358	254 740	261 815	279 377

Source: SUTEL, General Directorate of Markets. Costa Rica, 2023.

Table 51. Costa Rica: Total revenue generated by mobile telecommunications per payment plan in 2019-2023
(yearly figures in millions of colones)

TOTAL	2019	2020	2021	2022	2023
Prepaid	137 025	104 363	90 694	81 378	72 887
Postpaid	358 604	356 937	355 505	364 596	387 294

Source: SUTEL, General Directorate of Markets. Costa Rica, 2023.

Table 52. Costa Rica: Average revenue per minute (ARPM)[1] by mobile telephony service in 2019-2023
(yearly figures in colones and minutes)

TOTAL	2019	2020	2021	2022	2023
Voice revenue	218 257 214 206	198 835 062 005	184 120 767 037	175 526 496 271	174 597 620 724
Total traffic	6 066 215 036	5 911 248 866	5 274 994 020	4 524 529 003	3 947 375 934
ARPM	36	34	35	39	44

Note: [1] Includes domestic and international voice call traffic and revenue only.
Source: SUTEL, General Directorate of Markets. Costa Rica, 2023.

Table 53. Costa Rica: Total traffic and share by payment plan per year1 in 2019-2023
(figures in millions of minutes and in percentage terms)

TOTAL	2019	2020	2021	2022	2023
Total traffic	6066	5911	5275	4525	3947
Prepaid	2239	1606	1297	1006	812
Postpaid	3827	4305	3978	3519	3136
Prepaid	37.0 %	27.0 %	25.0 %	22.0 %	21.0 %
Postpaid	63.0 %	73.0 %	75.0 %	78.0 %	79.0 %

Note: [1] Includes domestic and international voice call traffic and revenue only.
Source: SUTEL, General Directorate of Markets. Costa Rica, 2023.

Table 54. Costa Rica: Relative distribution of mobile telephony service traffic by destination with relation to total traffic in 2019-2023
(yearly figures in millions of minutes and in percentage terms)

	2019	2020	2021	2022	2023
Total traffic	6066	5911	5275	4525	3947
Mobile-mobile (On-net)	51.0 %	51.0 %	51.0 %	50.0 %	49.0 %
Mobile-mobile (Off-net)	28.0 %	28.0 %	28.0 %	28.0 %	28.0 %
Mobile-Fixed	17.0 %	18.0 %	18.0 %	19.0 %	20.0 %
Mobile-International	4.0 %	4.0 %	4.0 %	3.0 %	3.0 %

Source: SUTEL, General Directorate of Markets. Costa Rica, 2023.

Table 55. Costa Rica: Subscriptions, revenue and total traffic from mobile Internet access in 2019-2023
(quarterly figures)

	2019				2020			
	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4
Subscriptions	4 640 836	4 521 275	4 578 230	4 649 229	4 642 113	4 706 623	4 614 579	4 736 699
Variation rate	-8.6 %	-2.6 %	1.3 %	1.6 %	-0.2 %	1.4 %	-2.0 %	2.6 %
Revenue (millions of colones)	64 384.2	67 424.5	67 241.9	66 434.9	65 635.9	63 130.8	62 811.3	63 779.6
Variation rate	3.3 %	4.7 %	-0.3 %	-1.2 %	-1.2 %	-3.8 %	-0.5 %	1.5 %
Traffic (TB)	36 113.4	37 203.9	41 898.6	45 349.3	51 001.9	57 145.1	55 324.9	59 338.4
Variation rate	-8.6 %	3.0 %	12.6 %	8.2 %	12.5 %	12.0 %	-3.2 %	7.3 %

	2021				2022			
	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4
Subscriptions	4 779 523	4 718 159	4 755 211	4 904 938	4 912 784	4 860 425	4 872 212	5 001 945
Variation rate	0.9 %	-1.3 %	0.8 %	3.1 %	0.2 %	-1.1 %	0.2 %	2.7 %
Revenue (millions of colones)	63 601.3	63 341.0	63 506.6	64 291.0	65 371.9	65 374.4	65 392.8	65 675.7
Variation rate	-0.3 %	-0.4 %	0.3 %	1.2 %	1.7 %	. %	. %	0.4 %
Traffic (TB)	62 078.6	64 966.5	69 724.0	72 387.8	75 799.7	78 817.0	85 509.5	92 535.1
Variation rate	4.6 %	4.7 %	7.3 %	3.8 %	4.7 %	2.2 %	10.3 %	8.2 %

	2023			
	Q1	Q2	Q3	Q4
Subscriptions	5 009 066	5 020 809	5 077 340	5 183 454
Variation rate	0.1 %	0.2 %	1.1 %	2.1 %
Revenue (millions of colones)	70 016.8	68 292.1	69 316.6	71 751.4
Variation rate	6.6 %	-2.5 %	1.5 %	3.5 %
Traffic (TB)	91 918.0	100 358.0	110 351.0	113 815.0
Variation rate	-0.7 %	9.2 %	10.0 %	3.1 %

Source: SUTEL, General Directorate of Markets. Costa Rica, 2023.

Table 56. Costa Rica: Subscriptions, revenue and total traffic from fixed Internet access in 2019-2023
(Quarterly figures)

	2019				2020			
	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4
Subscriptions	865 914	871 494	895 056	904 734	926 362	950 278	969 498	992 725
Variation rate		0.6 %	2.7 %	1.08 %	2.4 %	2.6 %	2.0 %	2.4 %
Revenue (millions of colones)	40 289	39 842	40 323	40 064	40 781	42 420	42 823	44 855
Variation rate		-1.1 %	1.2 %	-0.6 %	1.8 %	4. %	1. %	4.7 %
Traffic (TB)	263 310	285 139	309 396	304 202	412 239	562 481	610 840	626 711
Variation rate		8.3 %	8.5 %	-1.68 %	35.5 %	36.4 %	8.6 %	2.6 %

	2021				2022			
	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4
Suscripciones	1 020 653	1 024 865	1 044 185	1 058 767	1 074 944	1 080 825	1 103 529	1 105 670
% de variación	2.81 %	0.41 %	1.89 %	1.4 %	1.5 %	0.5 %	2..1 %	0.2%
Ingreso (millones de colones)	46 363	48 246	48 585	49 290	50 726	52 523	51 724	51 502
% de variación	3.4 %	4.1 %	0.7 %	1.5 %	2.9 %	3.5 %	-1.5 %	-0.4 %
Trafico (TB)	749 694	814 389	865 976	849 765	824 634	855 125	961 209	916 108
% de variación	19.62 %	8.63 %	6.33 %	-1.87 %	-2.96 %	3.7 %	12.41 %	-4.69 %

	2023			
	Q1	Q2	Q3	Q4
Suscripciones	1 124 333	1 134 411	1 128 977	1 149 924
% de variación	1.7 %	0.9 %	-0.5 %	1.9 %
Ingreso (millones de colones)	49 803	51 049	49 920	51 185
% de variación	-3.3 %	2.5 %	-2.2 %	2.5 %
Trafico (TB)	857.226	883.176	881.278	950.925
% de variación	-6.43 %	3.03 %	-0.21 %	7.9 %

Source: SUTEL, General Directorate of Markets. Costa Rica, 2023.

Table 57. Costa Rica: Revenue and subscriptions from dedicated lines in 2019-2023
(quarterly figures)

	2019				2020			
	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4
Subscriptions	20 182	20 570	22 251	22 921	22 926	22 586	22 854	23 682
Variation rate		1,92 %	8,17 %	3,01 %	0,02 %	-1,48 %	1,19 %	3,62 %
Revenue (millions of colones)	12 809	11 821	12 672	12 190	11 664	12 110	12 716	12 835
Variation rate		-7,71 %	7,2 %	-3,8 %	-4,32 %	3,82 %	5,00 %	0,94 %

	2021				2022			
	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4
Subscriptions	20 154	19 891	18 086	18 025	17 764	17 085	17 974	17 294
Variation rate	-14,9 %	-1,3 %	-9,07 %	-0,34 %	-1,45 %	-3,82 %	5,2 %	-3,78 %
Revenue (millions of colones)	13 608	13 286	13 162	13 830	11 179	12 205	10 999	11 531
Variation rate	6,02 %	-2,37 %	-0,93 %	5,07 %	-19,16 %	9,18 %	-9,88 %	4,83 %

	2023			
	Q1	Q2	Q3	Q4
Subscriptions	17 643	17 539	19 824	19 453
Variation rate	2,02 %	-0,59 %	13,03 %	-1,87 %
Revenue (millions of colones)	10 671	9 743	9 677	10 440
Variation rate	-7,45 %	-8,7 %	-0,67 %	7,88 %

Source: SUTEL, General Directorate of Markets. Costa Rica, 2023.

Table 58. Costa Rica: Total TV subscriptions by type of technology per quarter in 2019-2023

(quarterly figures)

Technology	2019				2020			
	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4
Cable TV	578 997	575 525	571 102	570 176	565 779	555 727	550 758	548 052
Satellite TV	257 100	255 423	255 862	248 269	245 831	232 702	227 821	224 465
IPTV	37 350	42 429	48 763	54 476	61 627	74 061	84 656	94 076
Terrestrial television broadcast by multipoint distribution	1 027	1 015	1 217	1 167	249	253	0	0
Total	**874 474**	**874 392**	**876 944**	**874 088**	**873 486**	**862 743**	**863 235**	**866 593**

Technology	2021				2022			
	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4
Cable TV	536 266	527 937	515 454	506 169	472 783	474 311	467 602	461 208
Satellite TV	216 871	206 242	201 313	195 722	190 184	197 258	178 557	177 666
IPTV	107 653	120 266	133 505	147 059	170 737	178 622	185 733	192 705
Terrestrial television broadcast by multipoint distribution	0	0	0	0	0	0	0	0
Total	**860 790**	**854 445**	**850 272**	**848 950**	**833 704**	**850 191**	**831 892**	**831 579**

Technology	2023			
	Q1	Q2	Q3	Q4
Cable TV	458 358	444 438	429 703	426 641
Satellite TV	180 481	162 590	157 489	152 759
IPTV	199 933	214 948	223 992	239 664
Terrestrial television broadcast by multipoint distribution	0	0	0	0
Total	**838 772**	**821 976**	**811 184**	**819 064**

Source: SUTEL, General Directorate of Markets. Costa Rica, 2023.

Table 59. Costa Rica: Total revenue from TV subscriptions by type of technology per quarter in 2019-2023
(quarterly figures in millions of colones)

Technology	2019				2020			
	I T	II T	III T	IV T	I T	II T	III T	IV T
Cable TV	27 643	27 425	27 586	27 809	27 506	27 388	26 885	26 946
Satellite TV	10 425	10 163	9 949	10 466	10 062	10 068	10 071	10 227
IPTV	1 945	2 168	2 417	2 725	2 972	3 416	3 988	4 442
Terrestrial television broadcast by multipoint distribution	12	13	12	9	29	20	12	0
Total	**40 026**	**39 768**	**39 965**	**41 009**	**40 569**	**40 894**	**40 955**	**41 614**

Technology	2021				2022			
	I T	II T	III T	IV T	I T	II T	III T	IV T
Cable TV	25 455	25 921	25 555	25 036	23 491	22 953	22 403	25 462
Satellite TV	10 111	9 617	9 733	10 003	8 930	8 652	8 427	7 758
IPTV	5 537	5 532	5 954	6 270	7 978	8 470	8 802	9 046
Terrestrial television broadcast by multipoint distribution	0	0	0	0	0	0	0	0
Total	**41 102**	**41 070**	**41 241**	**41 309**	**40 399**	**40 074**	**39 631**	**42 267**

Technology	2023			
	I T	II T	III T	IV T
Cable TV	25 478	25 349	25 038	24 970
Satellite TV	8 574	6 865	6 538	6 371
IPTV	9 198	9 350	9 485	9 663
Terrestrial television broadcast by multipoint distribution	0	0	0	0
Total	**43 250**	**41 564**	**41 061**	**41 004**

Source: SUTEL, General Directorate of Markets. Costa Rica, 2023.

Table 60. Costa Rica: Characteristics of the prepaid mobile telecommunications packages offered in December 2022

Operator	Name	Price	Included services	Minutes to all operators	Minutes to another operator	Minutes to the same operator	SMS to all operators	SMS to another operator	SMS to the same operator	Total download capacity (Gigabytes)	Other additional services
Claro	3.5GB+Saldo	₡8 500	Minutes, Internet	N/A	N/A	N/A	N/A	N/A	N/A	3.5	Bonus: 8500 of bonus account balance
Kölbi	Plan Dominio Prepago 2	₡8 065	Minutes, Internet	50	N/A	N/A	30	N/A	N/A	4	3 GB of free data in WhatsApp
Claro	M@s Hablo Costa Rica25	₡700	Minutes	25	N/A	N/A	N/A	N/A	N/A	N/A	"The free minutes only apply to calls in Costa Rica. Available for Prepaid Plans & "Cuenta Control" [Control Account] Plans."
Movistar	Paquete Mes Prepago	₡6 500	Internet	N/A	N/A	N/A	N/A	N/A	N/A	2	Free WhatsApp for the duration of the package
Claro	Paquete M@s 15+	₡6 000	Minutes, Internet & Messaging	70	70	200	200	N/A	N/A	4	"-Unlimited WhatsApp* -Up to 700 MB of free data in social media apps, includes: Facebook, Instagram, Pinterest, Twitter and Waze."
Claro	250MB + WhatsApp Gratis	₡600	Internet	N/A	N/A	N/A	N/A	N/A	N/A	0.25	Free WhatsApp
Claro	M@s Navego 300MB	₡600	Internet	N/A	N/A	N/A	N/A	N/A	N/A	0.3	"-Unlimited WhatsApp* -This internet package covers access in CR, Central America and Panama, if the Without Borders Prepaid Plan is purchased. -WhatsApp will be free throughout the package's validity period."
Movistar	Paquete 2 Días Prepago	₡600	Internet	N/A	N/A	N/A	N/A	N/A	N/A	0.4	N/A
Movistar	Paquete Unlimited Nocturno	₡600	Internet	N/A	N/A	N/A	N/A	N/A	N/A	0.15	Unlimited data at night, from 23:00 to 07:00; up to 150 MB of free data during the day.
Kölbi	Paquete Internet Prepago En Todas 3	₡600	Internet	N/A	N/A	N/A	N/A	N/A	N/A	0.2	1- These packages will renew automatically. 2- Includes up to 100 MB of WhatsApp, Instagram & Facebook data usage. 3- Reach speeds of up to 50 Mbps in the 4.5G network.
Movistar	Súper Bono 200MB	₡600	Internet	N/A	N/A	N/A	N/A	N/A	N/A	0.2	N/A

Operator	Name	Price	Included services	Minutes to all operators	Minutes to another operator	Minutes to the same operator	SMS to all operators	SMS to another operator	SMS to the same operator	Total download capacity (Gigabytes)	Other additional services
Movistar	Plan Libre Prepago	₡5 900	Minutes, Internet & Messaging	70	N/A	140	70	N/A	140	4	"Recharge your plan with ₡2,000 or more: Get twice as much for voice calls and SMS messages sent to Movistar CR. Includes 5 GB of free data in social media apps (WhatsApp, Twitter, Waze)."
Movistar	Preplan 15 Plus	₡5 900	Minutes, Internet & Messaging	70	N/A	140	70	N/A	4	2.3	"Recharge your plan with ₡1,000-₡1,999: Get twice as much for voice calls and SMS messages sent to Movistar CR. Recharge your plan with ₡2,000 or more: Get twice as much for voice calls and SMS messages sent to all operators in CR. Includes unlimited RRSS (WhatsApp, Facebook, Instagram, Twitter, Waze)."
Claro	3GB + WhatsApp Gratis	₡5 500	Internet	N/A	N/A	N/A	N/A	N/A	N/A	3	Bonus: Unlimited WhatsApp
Movistar	Superbono de Llamadas 10min	₡550	Minutos	10	N/A	N/A	N/A	N/A	N/A	N/A	"The minutes included in this package are International Long Distance calling minutes to Movistar in Nicaragua, USA and Canada. Only applies when recharging at least ₡1000 colones."
Kölbi	Plan Dominio Prepago 1	₡5 040	Minutes, Internet & Messaging	35	N/A	N/A	30	N/A	N/A	2	3 GB of free data in WhatsApp
Claro	Unlimited CLARO	₡500	Minutos	N/A	N/A	Unlimited	N/A	N/A	N/A	N/A	"-Free unlimited minutes to Claro numbers in Costa Rica. -Available for Prepaid Plans."
Claro	2GB+Saldo	₡4 500	Minutes, Internet	N/A	N/A	N/A	N/A	N/A	N/A	2	Bonus: 4500 of bonus account balance
Claro	M@s Navego 3GB	₡4 500	Internet	N/A	N/A	N/A	N/A	N/A	N/A	3	-This internet package covers access in CR, Central America and Panama, if the Without Borders Prepaid Plan is purchased. -WhatsApp will be free throughout the package's validity period."
Movistar	Super Recarga Plus 4500	₡4 500	Minutos, Internet	45	N/A	N/A	N/A	N/A	N/A	2	Includes unlimited data usage on social media apps (WhatsApp, Facebook, Instagram, Twitter, Waze)

Operator	Name	Price	Included services	Minutes to all operators	Minutes to another operator	Minutes to the same operator	SMS to all operators	SMS to another operator	SMS to the same operator	Total download capacity (Gigabytes)	Other additional services
Kölbi	En todas y más	₡4 000	Internet	N/A	N/A	N/A	N/A	N/A	N/A	2	N/A
Kölbi	Paquete Internet Prepago 2 GIGAS	₡4 000	Internet	N/A	N/A	N/A	N/A	N/A	N/A	2	These packages will renew automatically. Reach speeds of up to 50 Mbps in the 4.5G network.
Movistar	Preplan 15	₡4 000	Minutes, Internet & Messaging	45	N/A	90	45	N/A	N/A	1.4	"Recharge your plan with ¢1,000-¢1,999: Get twice as much for voice calls and SMS messages sent to Movistar CR. Recharge your plan with ¢2,000 or more: Get twice as much for voice calls and SMS messages sent to all other operators in CR Includes unlimited data usage in social media apps (WhatsApp, Facebook, Instagram, Twitter, Waze)."
Claro	NOCHES ILIMITADAS	₡400	Internet	N/A	N/A	N/A	N/A	N/A	N/A	Unlimited	"-Unlimited navigation from 22:00 h to 06:00 h. -This internet package covers access in CR, Central America and Panama, if the Without Borders Prepaid Plan is purchased."
Movistar	Paquete Día Prepago	₡375	Internet	N/A	N/A	N/A	N/A	N/A	N/A	0.15	N/A
Claro	Paquete M@s10	₡3 000	Minutos, Internet y Mensajería	30	N/A	200	100	N/A	N/A	2	"-Unlimited WhatsApp* -Up to 500 MB of free data in social media apps, includes: Facebook, Instagram, Pinterest, Twitter and Waze. -WhatsApp will be free throughout the package's validity period."
Claro	100MB + WhatsApp Gratis	₡300	Internet	N/A	N/A	N/A	N/A	N/A	N/A	0.1	Free WhatsApp
Claro	M@s Mensajeo200	₡300	Mensajería	N/A	N/A	N/A	200	N/A	N/A	N/A	"-200 messages to all operators in Costa Rica. -Available for Prepaid Plans & "Cuenta Control" [Control Account] Plans."

Operator	Name	Price	Included services	Minutes to all operators	Minutes to another operator	Minutes to the same operator	SMS to all operators	SMS to another operator	SMS to the same operator	Total download capacity (Gigabytes)	Other additional services
Claro	M@s Navego 150MB	₡300	Internet	N/A	N/A	N/A	N/A	N/A	N/A	0.15	"-Unlimited WhatsApp* -This internet package covers access in CR, Central America and Panama, if the Without Borders Prepaid Plan is purchased. -WhatsApp will be free throughout the package's validity period."
Movistar	Paquete de Internet 1 día	₡300	Internet	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Movistar	Preplan 7 Plus	₡2 900	Minutes, Internet & Messaging	30	N/A	60	30	N/A	N/A	1	N/A
Movistar	Súper Bono 100MB	₡275	Internet	N/A	N/A	N/A	N/A	N/A	N/A	0.1	N/A
Kölbi	Paquete De Todo	₡2 500	Minutes, Internet & Messaging	N/A	N/A	34	N/A	N/A	200	0.15	SMS
Kölbi	Paquete Internet Prepago 1 GIGA	₡2 500	Internet	N/A	N/A	N/A	N/A	N/A	N/A	1	These packages will renew automatically. Reach speeds of up to 50 Mbps in the 4.5G network.
Kölbi	Paquete Internet Prepago En Todas Plus 10	₡2 500	Internet	N/A	N/A	N/A	N/A	N/A	N/A	0.5	1- These packages will renew automatically. 2- Includes up to 400 MB of WhatsApp, Instagram, Facebook, Snapchat, Pinterest and Twitter data usage. 3- Reach speeds of up to 50 Mbps in the 4.5G network.
Movistar	Paquete Semana Prepago	₡2 500	Internet	N/A	N/A	N/A	N/A	N/A	N/A	1	N/A
Movistar	Super Recarga Plus 2500	₡2 500	Minutos, Internet	20	N/A	N/A	N/A	N/A	N/A	1.2	Includes unlimited RRSS (WhatsApp, Facebook, Instagram, Twitter, Waze)
Claro	AMIGO FAVORITO	₡250	Minutos	N/A	N/A	Unlimited	N/A	N/A	N/A	N/A	"Free unlimited minutes to a specific Claro number in Costa Rica. Available for Prepaid Plans. Unlimited WhatsApp for 1 day."
Claro	M@s Mensajeo100	₡250	Mensajería	N/A	N/A	N/A	100	N/A	N/A	N/A	"-100 messages to all operators in Costa Rica. -Available for Prepaid Plans & "Cuenta Control" [Control Account] Plans."

Operator	Name	Price	Included services	Minutes to all operators	Minutes to another operator	Minutes to the same operator	SMS to all operators	SMS to another operator	SMS to the same operator	Total download capacity (Gigabytes)	Other additional services
Claro	60 Minutos	₡2 400	Minutos	Unlimited	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Claro	1GB + WhatsApp Gratis	₡2 000	Internet	N/A	N/A	N/A	N/A	N/A	N/A	1	Free WhatsApp
Claro	M@s Navego 1GB	₡2 000	Internet	N/A	N/A	N/A	N/A	N/A	N/A	1	"-Unlimited WhatsApp* -This internet package covers access in CR, Central America and Panama, if the Without Borders Prepaid Plan is purchased. -WhatsApp will be free throughout the package's validity period."
Movistar	Paquete CONECTADOS Prepago	₡2 000	Internet	N/A	N/A	N/A	N/A	N/A	N/A	10	N/A
Movistar	Paquete de Internet Semana	₡2 000	Internet	N/A	N/A	N/A	N/A	N/A	N/A	0.55	N/A
Claro	Paquete M@s7	₡2 000	Minutes, Internet & Messaging	20	N/A	200	50	N/A	N/A	1	"-Unlimited WhatsApp. -Up to 500 MB of free data in social media apps, includes: Facebook, Instagram, Pinterest, Twitter and Waze."
Movistar	Preplan 7	₡2 000	Minutes, Internet & Messaging	20	N/A	40	20	N/A	40	0.65	"Recharge your plan with ₡1,000-₡1,999: Get twice as much for voice calls and SMS messages sent to Movistar CR. Recharge your plan with ₡2,000 or more: Get twice as much for voice calls and SMS messages sent to all other operators in CR Includes 5 GB of free RRSS (WhatsApp, Facebook, Instagram, Twitter, Waze)."
Movistar	Super Bono SR 2000	₡2 000	Minutes, Internet	15	N/A	N/A	N/A	N/A	N/A	1	Includes unlimited RRSS (WhatsApp, Facebook, Instagram, Twitter, Waze)
Movistar	Paquete Básico Prepago	₡200	Internet	N/A	N/A	N/A	N/A	N/A	N/A	0.03	N/A
Movistar	Paquete de Internet Básico	₡200	Internet	N/A	N/A	N/A	N/A	N/A	N/A	0.03	N/A

Operator	Name	Price	Included services	Minutes to all operators	Minutes to another operator	Minutes to the same operator	SMS to all operators	SMS to another operator	SMS to the same operator	Total download capacity (Gigabytes)	Other additional services
Kölbi	Paquete Internet Prepago En Todas 1	₡200	Internet	N/A	N/A	N/A	N/A	N/A	N/A	0.05	1- These packages will renew automatically. 2- Includes up to 100 MB of WhatsApp, Instagram & Facebook data usage. 3- Reach speeds of up to 50 Mbps in the 4.5G network.
Kölbi	Paquete SMS Día Plus	₡200	Mensajería	N/A	N/A	N/A	N/A	N/A	100	N/A	N/A
Claro	Superpacks de Internet 3	₡12 040	Internet	N/A	N/A	N/A	N/A	N/A	N/A	4	Unlimited data usage on social media apps (WhatsApp)
Claro	600MB+Saldo	₡1 500	Minutes, Internet	N/A	N/A	N/A	N/A	N/A	N/A	0.6	Bonus: 1500 of bonus account balance
Claro	M@s Hablo Costa Rica60	₡1 500	Minutes	60	N/A	N/A	N/A	N/A	N/A	N/A	"The free minutes only apply to calls in Costa Rica. Available for Prepaid Plans & "Cuenta Control" [Control Account] Plans."
Movistar	Paquete 4 Días Prepago	₡1 300	Internet	N/A	N/A	N/A	N/A	N/A	N/A	0.6	N/A
Kölbi	Paquete Internet Prepago En Todas Plus 5	₡1 300	Internet	N/A	N/A	N/A	N/A	N/A	N/A	0.3	1- These packages will renew automatically. 2- Includes up to 200 MB of WhatsApp, Instagram, Facebook, Snapchat, Pinterest and Twitter data usage. 3- Reach speeds of up to 50 Mbps in the 4.5G network.
Movistar	Súper Bono 600MB	₡1 300	Internet	N/A	N/A	N/A	N/A	N/A	N/A	0.6	N/A
Kölbi	Plan Dominio Prepago 3	₡12 095	Minutes, Internet & Messaging	100	N/A	N/A	30	N/A	N/A	5	5 GB of free data in WhatsApp, Instagram, Facebook and Waze.
Movistar	Paquete de Internet 4 días	₡1 200	Internet	N/A	N/A	N/A	N/A	N/A	N/A	N/A	Includes a bonus of 200 MB of free data usage in WhatsApp; only applies to text messages. (does not include voice or video calls)
Movistar	Súper Bono 500MB	₡1 150	Internet	N/A	N/A	N/A	N/A	N/A	N/A	0.5	N/A
Movistar	Superbono de Internet 500MB	₡1 150	Internet	N/A	N/A	N/A	N/A	N/A	N/A	0.5	Unlimited WhatsApp

Operator	Name	Price	Included services	Minutes to all operators	Minutes to another operator	Minutes to the same operator	SMS to all operators	SMS to another operator	SMS to the same operator	Total download capacity (Gigabytes)	Other additional services
Movistar	Superbono de Llamadas 25min	₡1 150	Minutes	N/A	25	N/A	N/A	N/A	N/A	N/A	The superbonus minutes included in this package are International Long Distance calling minutes to Movistar in Nicaragua, USA and Canada.
Claro	Paquete M@s 30	₡10 000	Minutes, Internet & Messaging	85	N/A	200	300	N/A	N/A	5	"-Unlimited WhatsApp* -Up to 700 MB of free data in social media apps, includes: Facebook, Instagram, Pinterest, Twitter and Waze."
Claro	M@s Navego 400MB	₡1 000	Internet	N/A	N/A	N/A	N/A	N/A	N/A	0.4	"-Unlimited WhatsApp* -This internet package covers access in CR, Central America and Panama, if the Without Borders Prepaid Plan is purchased. -WhatsApp will be free throughout the package's validity period."
Claro	Paquete M@s 3	₡1 000	Minutes, Internet & Messaging	10	N/A	50	20	N/A	N/A	0.4	"-Unlimited WhatsApp. -Up to 500 MB of free data in social media apps, includes: Facebook, Instagram, Pinterest, Twitter and Waze."
Claro	Plan M@S 1	₡1 000	Minutes, Internet & Messaging	10	N/A	50	10	N/A	N/A	0.3	50 free minutes to other Claro number and 10 free minutes to numbers in Central America, USA and Canada.
Movistar	Super Recarga 1000	₡1 000	Minutes, Internet	10	N/A	N/A	N/A	N/A	N/A	0.3	Includes unlimited WhatsApp
Claro	20MB + WhatsApp Gratis	₡100	Internet	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Claro	M@s Navego 30MB	₡100	Internet	N/A	N/A	N/A	N/A	N/A	N/A	0.3	This internet package covers access in CR, Central America and Panama, if the Without Borders Prepaid Plan is purchased.
Kölbi	Paquete SMS Básico	₡100	Messaging	N/A	N/A	N/A	N/A	N/A	50	N/A	N/A

Source: SUTEL, General Directorate of Markets. Costa Rica, 2023.

Table 61. Costa Rica: Characteristics of the prepaid mobile telecommunications packages offered in December 2023

Operator	Name	Price	Included services	Minutes to all operators	Minutes to another operator	Minutes to the same operator	SMS to all operators	SMS to another operator	SMS to the same operator	Total download capacity (Gigabytes)	Other additional services
Kölbi	Paquete SMS Básico	₡100	N/A	N/A	N/A	N/A	N/A	N/A	50	N/A	N/A
Kölbi	Paquete SMS Día Plus	₡200	N/A	N/A	N/A	N/A	N/A	N/A	100	N/A	N/A
Liberty	Paquete LDI Full Nicaragua 7dias	₡1 000	Minutes	8	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Liberty	Paquete LDI Movistar Nicaragua 7dias	₡1 000	Minutes	15	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Liberty	Paquete LDI Europa	₡1 000	Minutes	25	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Liberty	Paquete LDI América	₡1 000	Minutes	15	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Liberty	Paquete LDI USA/ Canadá	₡1 000	Minutes	18	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Liberty	Plan Prepago Captación PC	₡500	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	"Recharge your plan with ¢1,000-¢1,999: Get twice as much for voice calls and SMS messages sent to Movistar CR; valid for 4 days. Recharge your plan with ¢2,000-¢2,999: Get twice as much for voice calls in all other networks in CR. Includes unlimited WhatsApp, Facebook, Instagram, Twitter and Waze; valid for 6 days. Recharge your plan with ¢3,000 or more: Get twice as much for voice calls and navigation in all other networks in CR, TIGO, NICARAGUA, USA & CANADA. Includes unlimited WhatsApp, Facebook, Instagram, Twitter and Waze; valid for 6 days."
Liberty	Plan Prepago Portabilidad PO	₡500	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	"Recharge your plan with ¢1,000-¢1,999: Get twice as much for voice calls and SMS messages sent to Movistar CR. + Free WhatsApp (20MB); valid for 3 days. Recharge your plan with ¢2,000 or more: Get three times as much for voice calls and SMS messages sent to all operators in CR + Free WhatsApp (300MB); valid for 6 days. Includes 50MB of data usage in Facebook, Instagram, Twitter and Waze."

Operator	Name	Price	Included services	Minutes to all operators	Minutes to another operator	Minutes to the same operator	SMS to all operators	SMS to another operator	SMS to the same operator	Total download capacity (Gigabytes)	Other additional services
Liberty	Plan Libre Prepago	₡5 900	Minutes, Internet	70	N/A	140	70	N/A	N/A	4	"Recharge your plan with ₡2,000 or more: Get twice as much for voice calls and SMS messages sent to Movistar CR. Includes unlimited social media app usage (WhatsApp, Twitter, Waze)."
Liberty	Paquete Video Prepago	₡3 000	Internet	N/A	N/A	N/A	N/A	N/A	N/A	25	N/A
Liberty	Paquete Semana Prepago	₡2 500	Internet	N/A	N/A	N/A	N/A	N/A	N/A	1	N/A
Liberty	Paquete 4 Días Prepago	₡1 300	Internet	N/A	N/A	N/A	N/A	N/A	N/A	600	N/A
Liberty	Paquete 2 Días Prepago	₡600	Internet	N/A	N/A	N/A	N/A	N/A	N/A	400	N/A
Liberty	Paquete Diario Prepago	₡375	Internet	N/A	N/A	N/A	N/A	N/A	N/A	150	N/A
Liberty	Paquete Unlimited Nocturno	₡600	Internet	N/A	N/A	N/A	N/A	N/A	N/A	150	Unlimited data at night, from 23:00 to 07:00; up to 150 MB of free data during the day.
Liberty	Paquete Básico Prepago	₡200	Internet	N/A	N/A	N/A	N/A	N/A	N/A	30	N/A
Liberty	Súper Bono 200MB	₡600	Internet	N/A	N/A	N/A	N/A	N/A	N/A	200	N/A
Liberty	Súper Bono 600MB	₡1 300	Internet	N/A	N/A	N/A	N/A	N/A	N/A	600	N/A
Liberty	Super Bono LDI 20 Min	₡1 100	Minutos	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Liberty	Super Bono LDI 8 Min	₡550	Minutos	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Liberty	Paquete CONECTADOS Prepago	₡2 000	Internet	N/A	N/A	N/A	N/A	N/A	N/A	10	N/A
Claro	Paquetes de Internet América y Estados Unidos 50 MB	₡10 000	Internet	N/A	N/A	N/A	N/A	N/A	N/A	50	N/A
Claro	Paquetes de Internet América y Estados Unidos 150 MB	₡25 500	Internet	N/A	N/A	N/A	N/A	N/A	N/A	150	N/A
Claro	Paquetes de Internet América y Estados Unidos 300 MB	₡46 000	Internet	N/A	N/A	N/A	N/A	N/A	N/A	300	N/A
Claro	Paquetes de Internet Roaming Prepago resto del mundo 50 MB	₡20 500	Internet	N/A	N/A	N/A	N/A	N/A	N/A	50	N/A

Operator	Name	Price	Included services	Minutes to all operators	Minutes to another operator	Minutes to the same operator	SMS to all operators	SMS to another operator	SMS to the same operator	Total download capacity (Gigabytes)	Other additional services
Claro	Paquetes de Internet Roaming Prepago resto del mundo 150 MB	₡56 500	Internet	N/A	N/A	N/A	N/A	N/A	N/A	150	N/A
Claro	Paquete roaming Estados Unidos 15 sms	₡1 350	N/A	N/A	N/A	N/A	15	N/A	N/A	N/A	N/A
Claro	Paquete roaming Estados Unidos 25 sms	₡2 000	N/A	N/A	N/A	N/A	25	N/A	N/A	N/A	N/A
Claro	Paquete roaming Estados Unidos 50 sms	₡3 500	N/A	N/A	N/A	N/A	50	N/A	N/A	N/A	N/A
Claro	Paquete roaming América 15 sms	₡1 350	N/A	N/A	N/A	N/A	15	N/A	N/A	N/A	N/A
Claro	Paquete roaming América 25 sms	₡2 000	N/A	N/A	N/A	N/A	25	N/A	N/A	N/A	N/A
Claro	Paquete roaming América 50 sms	₡3 500	N/A	N/A	N/A	N/A	50	N/A	N/A	N/A	N/A
Kölbi	Roaming America Internet (Prepago)	N/A	Internet	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Kölbi	Servicio Roaming Datos por Región (Prepago)	N/A	Internet	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Liberty	Paquete Música Prepago	₡2 000	Internet	N/A	N/A	N/A	N/A	N/A	N/A	Unlimited	Unlimited bonus data on music apps
Liberty	Super Recarca 2000	₡2 000	Minutes, Internet	15	N/A	N/A	N/A	N/A	N/A	1	Includes unlimited RRSS (WhatsApp, Facebook, Instagram, Twitter, Waze)
Liberty	Super Recarga 1000	₡1 000	Minutes, Internet	10	N/A	N/A	N/A	N/A	N/A	300	Includes unlimited WhatsApp
Liberty	Super Bono SR 2000	₡2 000	Minutes, Internet	15	N/A	N/A	N/A	N/A	N/A	1	Includes unlimited RRSS (WhatsApp, Facebook, Instagram, Twitter, Waze)
Liberty	Super Bono SR 1000	₡1 000	Minutes, Internet	10	N/A	N/A	N/A	N/A	N/A	300	Includes unlimited WhatsApp
Liberty	Paquete Día Prepago	₡375	Internet	N/A	N/A	N/A	N/A	N/A	N/A	150	N/A
Liberty	Súper Bono 150MB	₡375	Internet	N/A	N/A	N/A	N/A	N/A	N/A	150	N/A
Liberty	Super Recarga Plus 2500	₡2 500	Minutes, Internet	20	N/A	N/A	N/A	N/A	N/A	1.2	Includes unlimited RRSS (WhatsApp, Facebook, Instagram, Twitter, Waze)
Liberty	Super Recarga Plus 4500	₡4 500	Minutes, Internet	45	N/A	N/A	N/A	N/A	N/A	2	Includes unlimited RRSS (WhatsApp, Facebook, Instagram, Twitter, Waze)

Operator	Name	Price	Included services	Minutes to all operators	Minutes to another operator	Minutes to the same operator	SMS to all operators	SMS to another operator	SMS to the same operator	Total download capacity (Gigabytes)	Other additional services
Claro	Turbonett quincena	₡9 000	Internet	N/A	N/A	N/A	N/A	N/A	N/A	15	"-Unlimited data usage up to 15GB; after reaching the limit, the user will access the Internet at a minimum speed of 384kbps. -Available to prepaid customers. Customer must have a Turbonnet user profile to use this package. -Not available to pure prepaid or hybrid customers."
Claro	Turbonett semana	₡4 900	Internet	N/A	N/A	N/A	N/A	N/A	N/A	7	"-Unlimited data usage up to 7GB; after reaching the limit, the user will access the Internet at a minimum speed of 384kbps. -Available to prepaid customers. Customer must have a Turbonnet user profile to use this package. -Not available to pure prepaid or hybrid customers."
Claro	Turbonett día	₡750	Internet	N/A	N/A	N/A	N/A	N/A	N/A	1	"-Unlimited data usage up to 1GB; after reaching the limit, the user will access the Internet at a minimum speed of 384kbps. -Available to prepaid customers. Customer must have a Turbonnet user profile to use this package. -Not available to pure prepaid or hybrid customers."
Claro	Turbonett mes	₡17 500	N/A	N/A	N/A	N/A	N/A	N/A	N/A	30	"-Unlimited data usage up to 30GB; after reaching the limit, the user will access the Internet at a minimum speed of 384kbps. -Available to prepaid customers. Customer must have a Turbonnet user profile to use this package. -Not available to pure prepaid or hybrid customers."

Operator	Name	Price	Included services	Minutes to all operators	Minutes to another operator	Minutes to the same operator	SMS to all operators	SMS to another operator	SMS to the same operator	Total download capacity (Gigabytes)	Other additional services
Claro	M@s Hablo America3	₡1 500	Minutes	N/A	N/A	30	N/A	N/A	N/A	N/A	"-30 minutes of free voice calls to "Claro Centroamerica", Panama, and all operators in USA and Canada. -Available for Prepaid Plans & "Cuenta Control" [Control Account] Plans."
Claro	M@s Navego 3GB	₡4 500	Internet	N/A	N/A	N/A	N/A	N/A	N/A	3	-Unlimited WhatsApp* -This internet package covers access in CR, Central America and Panama, if the Without Borders Prepaid Plan is purchased. -WhatsApp will be free throughout the package's validity period."
Claro	M@s Navego 1GB	₡2 000	Internet	N/A	N/A	N/A	N/A	N/A	N/A	1	-Unlimited WhatsApp* -This internet package covers access in CR, Central America and Panama, if the Without Borders Prepaid Plan is purchased. -WhatsApp will be free throughout the package's validity period."
Claro	M@s Navego 400MB	₡1 000	Internet	N/A	N/A	N/A	N/A	N/A	N/A	400	-Unlimited WhatsApp* -This internet package covers access in CR, Central America and Panama, if the Without Borders Prepaid Plan is purchased. -WhatsApp will be free throughout the package"s validity period."
Claro	M@s Navego 300MB	₡600	Internet	N/A	N/A	N/A	N/A	N/A	N/A	300	-Unlimited WhatsApp* -This internet package covers access in CR, Central America and Panama, if the Without Borders Prepaid Plan is purchased. -WhatsApp will be free throughout the package's validity period."

Operator	Name	Price	Included services	Minutes to all operators	Minutes to another operator	Minutes to the same operator	SMS to all operators	SMS to another operator	SMS to the same operator	Total download capacity (Gigabytes)	Other additional services
Claro	M@s Navego 150MB	₡300	Internet	N/A	N/A	N/A	N/A	N/A	N/A	150	-Unlimited WhatsApp* -This internet package covers access in CR, Central America and Panama, if the Without Borders Prepaid Plan is purchased. -WhatsApp will be free throughout the package's validity period."
Claro	NOCHES ILIMITADAS	₡400	Internet	N/A	N/A	N/A	N/A	N/A	N/A	Unlimited	"-Unlimited navigation from 22:00 h to 06:00 h. -This internet package covers access in CR, Central America and Panama, if the Without Borders Prepaid Plan is purchased."
Claro	AMIGO FAVORITO	₡250	Minutes	N/A	N/A	Unlimited	N/A	N/A	N/A	N/A	"Free unlimited minutes to a specific Claro number in Costa Rica. Available for Prepaid Plans."
Claro	UnlimitedCLARO	₡500	Minutes	N/A	N/A	Unlimited	N/A	N/A	N/A	N/A	"- Free unlimited minutes to all Claro numbers in Costa Rica. -Available for Prepaid Plans."
Claro	M@s Hablo America2	₡1 000	Minutes	N/A	10	N/A	N/A	N/A	N/A	N/A	"-10 minutes of free voice calls to all operators in Central America, Panama, USA and Canada. -Available for Prepaid Plans & "Cuenta Control" [Control Account] Plans."
Claro	M@s Hablo America1	₡550	Minutes	N/A	N/A	10	N/A	N/A	N/A	N/A	"-10 minutes of free voice calls to "Claro Centroamerica", Panama, and all operators in USA and Canada. -Available for Prepaid Plans & "Cuenta Control" [Control Account] Plans."
Claro	M@s Hablo NICARAGUA	₡400	Minutes	N/A	N/A	10	N/A	N/A	N/A	N/A	"10 minutes of free voice calls to Claro in Nicaragua. Available for Prepaid Plans & "Cuenta Control" [Control Account] Plans."

Operator	Name	Price	Included services	Minutes to all operators	Minutes to another operator	Minutes to the same operator	SMS to all operators	SMS to another operator	SMS to the same operator	Total download capacity (Gigabytes)	Other additional services
Claro	M@s Hablo Costa Rica25	₡700	Minutes	25	N/A	N/A	N/A	N/A	N/A	N/A	"The free minutes only apply to calls in Costa Rica. Available for Prepaid Plans & "Cuenta Control" [Control Account] Plans."
Claro	M@s Hablo Costa Rica60	₡1 500	Minutes	60	N/A	N/A	N/A	N/A	N/A	N/A	"The free minutes only apply to calls in Costa Rica. Available for Prepaid Plans & "Cuenta Control" [Control Account] Plans."
Claro	M@s Mensajeo100	₡250	N/A	N/A	N/A	N/A	100	N/A	N/A	N/A	"-100 messages to all operators in Costa Rica. -Available for Prepaid Plans & "Cuenta Control" [Control Account] Plans."
Claro	M@s Mensajeo200	₡300	N/A	N/A	N/A	N/A	200	N/A	N/A	N/A	"-200 messages to all operators in Costa Rica -Available for Prepaid Plans & "Cuenta Control" [Control Account] Plans."
Claro	AMERICA + USA ROAMING 150MB	₡25 000	Internet	N/A	N/A	N/A	N/A	N/A	N/A	150	N/A
Claro	AMERICA + USA ROAMING 50MB	₡10 000	Internet	N/A	N/A	N/A	N/A	N/A	N/A	50	N/A
Claro	AMERICA + USA ROAMING 300MB	₡46 000	Internet	N/A	N/A	N/A	N/A	N/A	N/A	300	N/A
Claro	MUNDIAL ROAMING 50MB	₡20 500	Internet	N/A	N/A	N/A	N/A	N/A	N/A	50	N/A
Claro	MUNDIAL ROAMING 150MB	₡56 500	Internet	N/A	N/A	N/A	N/A	N/A	N/A	150	N/A
Claro	AMERICA ROAMING 50MN	₡23 000	Minutes	50	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Claro	AMERICA ROAMING 25MN	₡16 000	Minutes	25	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Claro	AMERICA ROAMING 15MN	₡9 000	Minutes	15	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Claro	AMERICA ROAMING 10MN	₡6 500	Minutes	10	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Claro	NORTEAMERICA ROAMING 50MN	₡15 000	Minutes	50	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Claro	NORTEAMERICA ROAMING 25MN	₡10 500	Minutes	25	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Claro	NORTEAMERICA ROAMING 15MN	₡6 000	Minutes	15	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Claro	NORTEAMERICA ROAMING 10MN	₡4 500	Minutes	10	N/A	N/A	N/A	N/A	N/A	N/A	N/A

Operator	Name	Price	Included services	Minutes to all operators	Minutes to another operator	Minutes to the same operator	SMS to all operators	SMS to another operator	SMS to the same operator	Total download capacity (Gigabytes)	Other additional services
Claro	AMERICA ROAMING 50SMS	₡3 500	N/A	N/A	N/A	N/A	50	N/A	N/A	N/A	N/A
Claro	AMERICA ROAMING 25SMS	₡2 000	N/A	N/A	N/A	N/A	25	N/A	N/A	N/A	N/A
Claro	AMERICA ROAMING 15SMS	₡1 350	N/A	N/A	N/A	N/A	15	N/A	N/A	N/A	N/A
Claro	NORTEAMERICA ROAMING 50SMS	₡3 500	N/A	N/A	N/A	N/A	50	N/A	N/A	N/A	N/A
Claro	NORTEAMERICA ROAMING 25SMS	₡2 000	N/A	N/A	N/A	N/A	25	N/A	N/A	N/A	N/A
Claro	NORTEAMERICA ROAMING 15SMS	₡1 350	N/A	N/A	N/A	N/A	15	N/A	N/A	N/A	N/A
Claro	M@s Navego 30MB	₡100	Internet	N/A	N/A	N/A	N/A	N/A	N/A	30	This internet package covers access in CR, Central America and Panama, if the Without Borders Prepaid Plan is purchased.
Claro	Paquete M@s7	₡2 000	Minutes, Internet	20	N/A	200	50	N/A	N/A	1	"-Unlimited WhatsApp* -Up to 500 MB of free data in social media apps, includes: Facebook, Instagram, Pinterest, and Waze."
Claro	Paquete M@s 3	₡1 000	Minutes, Internet	10	N/A	50	20	N/A	N/A	300	"-Unlimited WhatsApp* -Up to 500 MB of free data in social media apps, includes: Facebook, Instagram, Pinterest, and Waze."
Claro	Paquete M@s10	₡3 000	Minutes, Internet	30	N/A	200	100	N/A	N/A	2	"-Unlimited WhatsApp* -Up to 500 MB of free data in social media apps, includes: Facebook, Instagram, Pinterest, and Waze."
Claro	Paquete M@s 15	₡4 500	Minutes, Internet	45	N/A	200	200	N/A	N/A	3	"-Unlimited WhatsApp* -Up to 700 MB of free data in social media apps, includes: Facebook, Instagram, Pinterest, and Waze."
Claro	Paquete M@s 30	₡10 000	Minutes, Internet	85	N/A	200	300	N/A	N/A	5	"-Unlimited WhatsApp* -Up to 700 MB of free data in social media apps, includes: Facebook, Instagram, Pinterest, and Waze."

Operator	Name	Price	Included services	Minutes to all operators	Minutes to another operator	Minutes to the same operator	SMS to all operators	SMS to another operator	SMS to the same operator	Total download capacity (Gigabytes)	Other additional services
Kölbi	Paquete Voz Internacional Panamá #1	₡900	Minutes	N/A	N/A	N/A	N/A	N/A	N/A	N/A	*Valid for 7 days. The total price includes taxes and legal fees: VAT (13%), 911 (0.75%) & Red Cross (1.0%).
Kölbi	Paquete Voz Internacional Nicaragua #1	₡3 100	Minutes	N/A	N/A	N/A	N/A	N/A	N/A	N/A	*Valid for 7 days. The total price includes taxes and legal fees: VAT (13%), 911 (0.75%) & Red Cross (1.0%).
Kölbi	Paquete Voz Internacional USA #1	₡1 200	Minutes	N/A	N/A	N/A	N/A	N/A	N/A	N/A	*Valid for 7 days. The total price includes taxes and legal fees: VAT (13%), 911 (0.75%) & Red Cross (1.0%).
Kölbi	Plan Dominio Prepago 1	₡5 040	Minutes, Internet	35	N/A	N/A	30	N/A	N/A	2	The total monthly price includes taxes and legal fees: VAT (13%), 911 (0.75%) & Red Cross (1.0%).
Kölbi	Plan Dominio Prepago 2	₡8 065	Minutes, Internet	50	N/A	N/A	30	N/A	N/A	4	The total monthly price includes taxes and legal fees: VAT (13%), 911 (0.75%) & Red Cross (1.0%).
Kölbi	Plan Dominio Prepago 3	₡12 095	Minutes, Internet	100	N/A	N/A	30	N/A	N/A	5	The total monthly price includes taxes and legal fees: VAT (13%), 911 (0.75%) & Red Cross (1.0%).
Kölbi	Paquete Internet Prepago En Todas 1	₡200	Internet	N/A	N/A	N/A	N/A	N/A	N/A	50	1- These packages will renew automatically. 2- Includes up to 100 MB of WhatsApp, Instagram & Facebook data usage. 3- Reach speeds of up to 50 Mbps in the 4.5G network.
Kölbi	Paquete Internet Prepago En Todas 3	₡600	Internet	N/A	N/A	N/A	N/A	N/A	N/A	200	1- These packages will renew automatically. 2- Includes up to 100 MB of WhatsApp, Instagram & Facebook data usage. 3- Reach speeds of up to 50 Mbps in the 4.5G network.
Kölbi	Paquete Internet Prepago En Todas Plus 5	₡1 300	Internet	N/A	N/A	N/A	N/A	N/A	N/A	300	1- These packages will renew automatically. 2- Includes up to 200 MB of WhatsApp, Instagram, Facebook, Snapchat, Pinterest and Twitter data usage. 3- Reach speeds of up to 50 Mbps in the 4.5G network.

Operator	Name	Price	Included services	Minutes to all operators	Minutes to another operator	Minutes to the same operator	SMS to all operators	SMS to another operator	SMS to the same operator	Total download capacity (Gigabytes)	Other additional services
Kölbi	Paquete Internet Prepago En Todas Plus 10	₡2 500	Internet	N/A	N/A	N/A	N/A	N/A	N/A	500	1- These packages will renew automatically. 2- Includes up to 400 MB of WhatsApp, Instagram, Facebook, Snapchat, Pinterest and Twitter data usage. 3- Reach speeds of up to 50 Mbps in the 4.5G network.
Kölbi	Paquete Internet Prepago 1 GIGA	₡2 500	Internet	N/A	N/A	N/A	N/A	N/A	N/A	1	These packages will renew automatically. Reach speeds of up to 50 Mbps in the 4.5G network.
Kölbi	Paquete Internet Prepago 2 GIGAS	₡4 000	Internet	N/A	N/A	N/A	N/A	N/A	N/A	2	These packages will renew automatically. Reach speeds of up to 50 Mbps in the 4.5G network.
Kölbi	Paquete Internet Prepago Entretenimiento - Música	₡4 000	Internet	N/A	N/A	N/A	N/A	N/A	N/A	N/A	1- These packages will renew automatically. 2- 30 days of Unlimited Internet on Apps included in this package. 3- Available to customers with pure prepaid, prepaid "Dominio" and "Dominio k" plans.
Kölbi	Paquete Internet Prepago Entretenimiento - Juego	₡1 000	Internet	N/A	N/A	N/A	N/A	N/A	N/A	N/A	1- These packages will renew automatically. 2- 7 days of Unlimited Internet on Apps included in this package. 3- Available to customers with pure prepaid, prepaid "Dominio" and "Dominio k" plans.
Kölbi	Paquete Internet Prepago Entretenimiento - Social	₡1 500	Internet	N/A	N/A	N/A	N/A	N/A	N/A	N/A	1- These packages will renew automatically. 2- 7 days of Unlimited Internet on Apps included in this package. 3- Available to customers with pure prepaid, prepaid "Dominio" and "Dominio k" plans.. 4- Voice calls, video calls and VoIP calls, Videochats, and chatbots in the following applications: Facebook, Instagram, and WhatsApp.

Operator	Name	Price	Included services	Minutes to all operators	Minutes to another operator	Minutes to the same operator	SMS to all operators	SMS to another operator	SMS to the same operator	Total download capacity (Gigabytes)	Other additional services
Kölbi	Paquete Internet Prepago Entretenimiento - Video	₡4 000	Internet	N/A	N/A	N/A	N/A	N/A	N/A	N/A	1- These packages will renew automatically. 2- Up to 10 GB for 30 days in Apps included in this package. 3- Available to customers with pure prepaid, prepaid "Dominio" and "Dominio k" plans.
Kölbi	Paquete Internet Prepago Unlimited - Hora	₡600	Internet	N/A	N/A	N/A	N/A	N/A	N/A	N/A	1. 60 minutes of unlimited free Internet. 2- Activate through any of the following: a. from kölbi App; b. by sending an SMS to 8888 with the relevant activation word (according to package); or c. From "Tienda k" by dialing: *888# (option 3).
Kölbi	Paquete Internet Prepago Unlimited - Día	₡1 500	Internet	N/A	N/A	N/A	N/A	N/A	N/A	N/A	1. 24 hours of unlimited free Internet. 2- Activate through any of the following: a. from kölbi App; b. by sending an SMS to 8888 with the relevant activation word (according to package); or c. From "Tienda k" by dialing: *888# (option 3).
Kölbi	Paquete Internet Prepago Unlimited - Noche	₡600	Internet	N/A	N/A	N/A	N/A	N/A	N/A	N/A	1. Unlimited free Internet from 9 pm to 6 am. 2- Activate through any of the following: a. from kölbi App; b. by sending an SMS to 8888 with the relevant activation word (according to package); or c. From "Tienda k" by dialing: *888# (option 3).

Source: SUTEL, General Directorate of Markets. Costa Rica, 2023.

Tabla n.° 62. Costa Rica: Características de los planes de telecomunicaciones móviles pospago ofertados en diciembre 2022

Operator	Name of Telephone Plan	Cost without terminal	Included services	Minutes to the same operator	Minutes to another operator	Minutes to all operators	SMS to the same operator	SMS another operator	SMS to all operators	Total download capacity (Gigabytes)	Observations
Claro	Conexión 1	₡10 600	Minutes, Internet	Unlimited	140	140	Unlimited	140	140	11	"Unlimited voice calls from Claro to Claro numbers (Only in Costa Rica) Includes America Without Borders Includes unlimited free WhatsApp and Waze."
Claro	Conexión 2	₡13 200	Minutes, Internet	Unlimited	200	200	Unlimited	200	200	12	"Unlimited voice calls from Claro to Claro numbers (Only in Costa Rica) Includes America Without Borders Includes unlimited free WhatsApp and Waze."
Claro	Conexión 3	₡19 000	Minutes, Internet	Unlimited	300	300	Unlimited	300	300	17	"Unlimited voice calls from Claro to Claro numbers (Only in Costa Rica) Includes America Without Borders Includes unlimited free WhatsApp and Waze."
Claro	Conexión 4	₡24 500	Minutes, Internet	Unlimited	600	600	Unlimited	600	600	16	"Unlimited voice calls from Claro to Claro numbers (Only in Costa Rica) Includes America Without Borders Includes unlimited free WhatsApp and Waze."
Claro	Conexión 5	₡35 600	Minutes, Internet	Unlimited	1500	1500	Unlimited	1500	1500	26	"Unlimited voice calls from Claro to Claro numbers (Only in Costa Rica) Includes America Without Borders Includes unlimited free WhatsApp and Waze."
Claro	Conexión 6	₡44 000	Minutes, Internet	Unlimited	Unlimited	Unlimited	Unlimited	Unlimited	Unlimited	30	"Unlimited voice calls from Claro to Claro numbers (Only in Costa Rica) Includes America Without Borders Includes unlimited free WhatsApp and Waze."
Claro	SIN LÍMITES 2 (14GB)	₡13 200	Minutes, Internet	Unlimited	150	150	Unlimited	150	150	14	N/A
Claro	SIN LÍMITES 2 (16GB)	₡16 200	Minutes, Internet	Unlimited	150	150	Unlimited	150	150	16	N/A
Claro	SIN LÍMITES 2 (18GB)	₡19 200	Minutes, Internet	Unlimited	150	150	Unlimited	150	150	18	N/A
Claro	SIN LÍMITES 3 (14GB)	₡18 500	Minutes, Internet	Unlimited	300	300	Unlimited	300	300	14	N/A

Operator	Name of Telephone Plan	Cost without terminal	Included services	Minutes to the same operator	Minutes to another operator	Minutes to all operators	SMS to the same operator	SMS another operator	SMS to all operators	Total download capacity (Gigabytes)	Observations
Claro	SIN LÍMITES 3 (16GB)	₡21 500	Minutes, Internet	Unlimited	300	300	Unlimited	300	300	16	N/A
Claro	SIN LÍMITES 3 (18GB)	₡24 500	Minutes, Internet	Unlimited	300	300	Unlimited	300	300	18	N/A
Claro	SIN LíMITES 4 (14GB)	₡28 900	Minutes, Internet	Unlimited	600	600	Unlimited	600	600	14	N/A
Claro	SIN LíMITES 4 (16GB)	₡31 900	Minutes, Internet	Unlimited	600	600	Unlimited	600	600	16	N/A
Claro	SIN LíMITES 4 (18GB)	₡34 900	Minutes, Internet	Unlimited	600	600	Unlimited	600	600	18	N/A
Claro	SIN LÍMITES Unlimited 1	₡44 000	Minutes, Internet	Unlimited	Unlimited	Unlimited	Unlimited	Unlimited	Unlimited	22	INCLUDES CLARO MUSIC
Claro	SIN LÍMITES Unlimited 2	₡55 000	Minutes, Internet	Unlimited	Unlimited	Unlimited	Unlimited	Unlimited	Unlimited	30	INCLUDES CLARO MUSIC
Kölbi	Especial 1	₡4 250	Minutes	N/A	N/A	30	N/A	N/A	2500	N/A	N/A
Kölbi	Especial 2	₡16 000	Minutes, Internet	N/A	N/A	30	N/A	N/A	6000	1.5	N/A
Kölbi	Plan 4G k1	₡8 000	Minutes, Internet	N/A	N/A	35	N/A	N/A	30	2.5	N/A
Kölbi	Plan 4G k2	₡12 000	Minutes, Internet	N/A	N/A	150	N/A	N/A	150	0.0035	"Unlimited free WhatsApp can be activated. Benefits are effective for a 90-day period 2. Data in social media apps is unlimited provided that data usage does not exceed 5 GB per month across all the applications included in the selected benefit option."
Kölbi	Plan 4G k3	₡18 000	Minutes, Internet	N/A	N/A	300	N/A	N/A	300	5	Only one benefit may be active at a time depending on the subscription plan (Unlimited WhatsApp + Waze, or Unlimited calls to your favorite kölbi number).
Kölbi	Plan 4G k4	₡26 000	Minutes, Internet	N/A	N/A	800	N/A	N/A	600	7	N/A
Kölbi	Plan 4G k5	₡36 000	Minutes, Internet	N/A	N/A	1500	N/A	N/A	1300	10	N/A
Kölbi	Plan 4G k6	₡48 000	Minutes, Internet	N/A	N/A	3000	N/A	N/A	2500	20	N/A
Kölbi	Plan converson K2	₡15 000	Minutes, Internet	N/A	N/A	400	N/A	N/A	300	0.005	N/A
Kölbi	Plan kölbi Pospago 4G k1	₡9 000	Minutes, Internet	N/A	N/A	35	N/A	N/A	30	5	Includes 3 GB of FREE WhatsApp
Kölbi	Plan kölbi Pospago 4G k2	₡13 000	Minutes, Internet	N/A	N/A	150	N/A	N/A	150	10	Includes 5 GB of FREE WhatsApp, Facebook, Instagram and Waze
Kölbi	Plan kölbi Pospago 4G k3	₡18 000	Minutes, Internet	N/A	N/A	300	N/A	N/A	300	14	Includes 5 GB of FREE WhatsApp, Facebook, Instagram and Waze

Operator	Name of Telephone Plan	Cost without terminal	Included services	Minutes to the same operator	Minutes to another operator	Minutes to all operators	SMS to the same operator	SMS another operator	SMS to all operators	Total download capacity (Gigabytes)	Observations
Kölbi	Plan kölbi Pospago 4G k4	₡26 000	Minutes, Internet	N/A	N/A	800	N/A	N/A	600	18	Includes 5 GB of FREE WhatsApp, Facebook, Instagram and Waze
Kölbi	Plan kölbi Pospago 4G k5	₡36 000	Minutes, Internet	N/A	N/A	1500	N/A	N/A	1300	26	Includes 5 GB of FREE WhatsApp, Facebook, Instagram and Waze
Kölbi	Plan kölbi Pospago 4G k6	₡48 000	Minutes, Internet	N/A	N/A	3000	N/A	N/A	2500	34	Includes 5 GB of FREE WhatsApp, Facebook, Instagram and Waze
Kölbi	Plan Pospago Ultra k1	₡10 400	Minutes, Internet	N/A	N/A	150	N/A	N/A	150	10	Unlimited free data in social media apps (WhatsApp, Instagram, Facebook, Waze and Twitter)
Kölbi	Plan Pospago Ultra k2	₡15 000	Minutes, Internet	Unlimited	300	N/A	Unlimited	300	N/A	15	Users get unlimited free data in the following apps: WhatsApp, Instagram, Waze and Twitter; users may additionally select, at no extra cost, 2 categories of apps from the following list: 1- SOCIAL (unlimited free data; includes: Tiktok, Pinterest, LinkedIn). 2- VIDEO (up to 5 GB of free data usage; includes: Netflix, Youtube, Disney +). 3- PRODUCTIVITY (up to 5 GB of free data usage; includes: Zoom, Teams, Web Ex). 4- MUSIC (unlimited free data; includes: Spotify, Sound Cloud, Kölbi Music).
Kölbi	Plan Pospago Ultra k3	₡20 000	Minutes, Internet	Unlimited	500	N/A	Unlimited	500	N/A	20	Users get unlimited free data in the following apps: WhatsApp, Instagram, Waze and Twitter; users may additionally select, at no extra cost, 2 categories of apps from the following list: 1- SOCIAL (unlimited free data; includes: Tiktok, Pinterest, LinkedIn). 2- VIDEO (up to 5 GB of free data usage; includes: Netflix, Youtube, Disney +). 3- PRODUCTIVITY (up to 5 GB of free data usage; includes: Zoom, Teams, Web Ex). 4- MUSIC (unlimited free data; includes: Spotify, Sound Cloud, Kölbi Music).

Operator	Name of Telephone Plan	Cost without terminal	Included services	Minutes to the same operator	Minutes to another operator	Minutes to all operators	SMS to the same operator	SMS another operator	SMS to all operators	Total download capacity (Gigabytes)	Observations
Kölbi	Plan Pospago Ultra k4	₡28 000	Minutes, Internet	Unlimited	700	N/A	Unlimited	700	N/A	28	Users get unlimited free data in the following apps: WhatsApp, Instagram, Waze and Twitter; users may additionally select, at no extra cost, 2 categories of apps from the following list: 1- SOCIAL (unlimited free data; includes: Tiktok, Pinterest, LinkedIn). 2- VIDEO (up to 5 GB of free data usage; includes: Netflix, Youtube, Disney +). 3- PRODUCTIVITY (up to 5 GB of free data usage; includes: Zoom, Teams, Web Ex). 4- MUSIC (unlimited free data; includes: Spotify, Sound Cloud, Kölbi Music).
Kölbi	Plan Pospago Ultra k5	₡38 000	Minutes, Internet	Unlimited	1000	N/A	Unlimited	1000	N/A	N/A	Users get unlimited free data in the following apps: WhatsApp, Instagram, Waze and Twitter; users may additionally select, at no extra cost, 2 categories of apps from the following list: 1- SOCIAL (unlimited free data; includes: Tiktok, Pinterest, LinkedIn). 2- VIDEO (up to 5 GB of free data usage; includes: Netflix, Youtube, Disney +). 3- PRODUCTIVITY (up to 5 GB of free data usage; includes: Zoom, Teams, Web Ex). 4- MUSIC (unlimited free data; includes: Spotify, Sound Cloud, Kölbi Music).
Kölbi	ULTRA 1	₡2 500	Internet	N/A	N/A	N/A	N/A	N/A	N/A	1	N/A
Movistar	Plan 4G@1 sin terminal	₡10 500	Minutes, Internet	300	150	N/A	300	150	N/A	4	Includes 25 hours of FREE Movistar Play Includes International Long Distance voice calls and minutes to Movistar numbers in the USA, Canada and Nicaragua.
Movistar	Plan 4G@2 sin terminal	₡15 500	Minutes, Internet	Unlimited	200	N/A	Unlimited	200	N/A	5	Includes 25 hours of FREE Movistar Play Includes International Long Distance voice calls and minutes to Movistar numbers in the USA, Canada and Nicaragua.
Movistar	Plan 4G@3 sin terminal	₡21 500	Minutes, Internet	Unlimited	300	N/A	Unlimited	300	N/A	6	Includes 50 hours of FREE Movistar Play Includes International Long Distance voice calls and minutes to the USA and Canada.

Operator	Name of Telephone Plan	Cost without terminal	Included services	Minutes to the same operator	Minutes to another operator	Minutes to all operators	SMS to the same operator	SMS another operator	SMS to all operators	Total download capacity (Gigabytes)	Observations
Movistar	Plan 4G@4 sin terminal	₡26 500	Minutes, Internet	Unlimited	600	N/A	Unlimited	600	N/A	8	Includes 50 hours of FREE Movistar Play Includes International Long Distance voice calls and minutes to Movistar numbers in the USA, Canada and Nicaragua.
Movistar	Plan 4G@5 sin terminal	₡32 500	Minutos, Internet	Unlimited	1000	N/A	Unlimited	1000	N/A	8	Includes 100 hours of FREE Movistar Play
Movistar	Plan 4G@6 sin terminal	₡41 500	Minutos, Internet	Unlimited	1500	N/A	Unlimited	1500	N/A	20	Includes 100 hours of FREE Movistar Play
Movistar	Plan Pospago LTE PRO @1 ST	₡10 500	Minutos, Internet	300	N/A	150	300	N/A	150	8	Includes 5 GB of free data in social media apps (WhatsApp, Twitter, Waze)
Movistar	Plan Pospago LTE PRO @2 ST	₡15 500	Minutos, Internet	Unlimited	N/A	200	Unlimited	N/A	200	10	Includes 5 GB of free data in social media apps (WhatsApp, Facebook, Instagram, Twitter, Waze)
Movistar	Plan Pospago LTE PRO @3 ST	₡21 500	Minutos, Internet	Unlimited	N/A	300	Unlimited	N/A	300	14	Includes 5 GB of free data in social media apps (WhatsApp, Facebook, Instagram, Twitter, Waze)
Movistar	Plan Pospago LTE PRO @4 CT	₡26 500	Minutos, Internet	Unlimited	N/A	600	Unlimited	N/A	600	22	Includes 5 GB of free data in social media apps (WhatsApp, Facebook, Instagram, Twitter, Waze)
Movistar	Plan Pospago LTE PRO @5 ST	₡32 500	Minutos, Internet	Unlimited	N/A	1000	Unlimited	N/A	1000	22	Includes 5 GB of free data in social media apps (WhatsApp, Facebook, Instagram, Twitter, Waze)
Movistar	Plan Pospago LTE PRO @6 ST	₡41 500	Minutos, Internet	Unlimited	N/A	1500	Unlimited	N/A	1500	30	Includes 5 GB of free data in social media apps (WhatsApp, Facebook, Instagram, Twitter, Waze)

Source: SUTEL, General Directorate of Markets. Costa Rica, 2023.

Table 63. Costa Rica: Characteristics of the postpaid mobile telecommunications packages offered in December 2023

Operator	Name of Telephone Plan	Cost without terminal	Included services	Minutes to the same operator	Minutes to another operator	Minutes to all operators	SMS to the same operator	SMS another operator	SMS to all operators	Total download capacity (Gigabytes)	Observations
Claro	Internet Móvil PRO	₡9 000	Internet	N/A	N/A	N/A	N/A	N/A	N/A	10	N/A
Claro	Internet Móvil FULL	₡12 500	Internet	N/A	N/A	N/A	N/A	N/A	N/A	10	N/A
Claro	Internet Móvil GOLD	₡14 500	Internet	N/A	N/A	N/A	N/A	N/A	N/A	10	N/A
Claro	Internet Móvil PLATINO	₡16 500	Internet	N/A	N/A	N/A	N/A	N/A	N/A	10	N/A
Claro	Internet Móvil DIAMOND	₡18 500	Internet	N/A	N/A	N/A	N/A	N/A	N/A	10	N/A
Liberty	Plan WiFi Móvil Plan 4G 10GB	₡13 500	Internet	N/A	N/A	N/A	N/A	N/A	N/A	10	24-month permanence agreements include a free mifi device, with no down payment.
Liberty	Plan WiFi Móvil Plan 4G 20GB	₡18 750	Internet	N/A	N/A	N/A	N/A	N/A	N/A	20	12-month permanence agreements include a subsidized mifi device.
Liberty	Paquete LDI Full Nicaragua	₡1 000	Minutes	N/A	8	N/A	N/A	N/A	N/A	N/A	N/A
Liberty	Paquete LDI Movistar Nicaragua	₡1 000	Minutes	N/A	15	N/A	N/A	N/A	N/A	N/A	N/A
Liberty	Paquete LDI Europa	₡1 000	Minutes	N/A	25	15	N/A	N/A	N/A	N/A	N/A
Liberty	Paquete LDI América	₡1 000	Minutes	N/A	N/A	18	N/A	N/A	N/A	N/A	N/A
Liberty	paquete LDI USA -Canadá	₡1 000	Minutes	N/A	N/A	60	N/A	N/A	N/A	N/A	N/A
Liberty	Paquete LDI Estados Unidos y Canadá	₡2 000	Minutes	N/A	N/A	50	N/A	N/A	N/A	N/A	N/A
Liberty	Paquete LDI Movistar Nicaragua Mes	₡2 500	Minutes	N/A	N/A	150	N/A	N/A	N/A	N/A	N/A
Liberty	Plan Pospago LTE PRO @1 CT	₡10 700	Minutes, Internet	300	N/A	200	300	N/A	150	10	Includes unlimited data usage on social media apps (WhatsApp, Twitter, Waze)
Liberty	Plan Pospago LTE PRO @2 CT	₡16 000	Minutes, Internet	Unlimited	N/A	300	Unlimited	N/A	200	15	Includes unlimited data usage on social media apps (WhatsApp, Facebook, Instagram, Twitter, Waze)
Liberty	Plan Pospago LTE PRO @3 CT	₡22 000	Minutes, Internet	Unlimited	N/A	1000	Unlimited	N/A	300	19	Includes unlimited data usage on social media apps (WhatsApp, Facebook, Instagram, Twitter, Waze)
Liberty	Plan Pospago LTE PRO @5 CT	₡33 200	Minutes, Internet	Unlimited	N/A	Unlimited	Unlimited	N/A	1000	29	Includes unlimited data usage on social media apps (WhatsApp, Facebook, Instagram, Twitter, Waze)

Operator	Name of Telephone Plan	Cost without terminal	Included services	Minutes to the same operator	Minutes to another operator	Minutes to all operators	SMS to the same operator	SMS another operator	SMS to all operators	Total download capacity (Gigabytes)	Observations
Liberty	Plan Pospago LTE PRO @6 CT	₡42 200	Minutes, Internet	Unlimited	N/A	150	Unlimited	N/A	Minutes, Internet	Unlimited	Includes unlimited data usage on social media apps (WhatsApp, Facebook, Instagram, Twitter, Waze)
Liberty	Plan Pospago LTE PRO @1 ST	₡10 500	Minutes, Internet	300	N/A	200	300	N/A	150	8	Includes 5 GB of free data in social media apps (WhatsApp, Twitter, Waze)
Liberty	Plan Pospago LTE PRO @2 ST	₡15 500	Minutes, Internet	Unlimited	N/A	300	Unlimited	N/A	200	10	Includes 5 GB of free data in social media apps (WhatsApp, Facebook, Instagram, Twitter, Waze)
Liberty	Plan Pospago LTE PRO @3 ST	₡21 500	Minutes, Internet	Unlimited	N/A	600	Unlimited	N/A	300	14	Includes 5 GB of free data in social media apps (WhatsApp, Facebook, Instagram, Twitter, Waze)
Liberty	Plan Pospago LTE PRO @4 ST	₡26 500	Minutes, Internet	Unlimited	N/A	1000	Unlimited	N/A	600	16	Includes 5 GB of free data in social media apps (WhatsApp, Facebook, Instagram, Twitter, Waze)
Liberty	Plan Pospago LTE PRO @5 ST	₡32 500	Minutes, Internet	Unlimited	N/A	1500	Unlimited	N/A	1000	22	Includes 5 GB of free data in social media apps (WhatsApp, Facebook, Instagram, Twitter, Waze)
Liberty	Plan Pospago LTE PRO @6 ST	₡41 500	Minutes, Internet	Unlimited	N/A	600	Unlimited	N/A	1500	30	Includes 5 GB of free data in social media apps (WhatsApp, Facebook, Instagram, Twitter, Waze)
Liberty	Plan Pospago LTE PRO @4 CT	₡26 500	Minutes, Internet	Unlimited	N/A	N/A	Unlimited	N/A	600	22	Includes 30GB of free data in social media apps (WhatsApp, Facebook, Instagram, Twitter, Waze)
Claro	Paquetes de InternetAmérica y Estados Unidos 150 MB	₡4 800	Internet	N/A	N/A	N/A	N/A	N/A	N/A	150	Terms and conditions in www.claro.cr
Claro	Paquetes de Internet Roaming Centroamerica 300 MB	₡8 700	Internet	N/A	N/A	N/A	N/A	N/A	N/A	300	Terms and conditions in www.claro.cr
Claro	Paquetes de Internet Roaming Centroamerica 500 MB	₡12 900	Internet	N/A	N/A	N/A	N/A	N/A	N/A	500	N/A
Claro	Paquetes de Internet Roaming Centroamerica 1 GB	₡16 000	Internet	N/A	N/A	N/A	N/A	N/A	N/A	1	N/A
Claro	Paquetes de Internet Roaming America 150 MB	₡22 600	Internet	N/A	N/A	N/A	N/A	N/A	N/A	150	N/A
Claro	Paquetes de Internet Roaming America 300 MB	₡42 000	Internet	N/A	N/A	N/A	N/A	N/A	N/A	300	N/A
Claro	Paquetes de Internet América y Estados Unidos 500 MB	₡62 400	Internet	N/A	N/A	N/A	N/A	N/A	N/A	500	N/A

Operator	Name of Telephone Plan	Cost without terminal	Included services	Minutes to the same operator	Minutes to another operator	Minutes to all operators	SMS to the same operator	SMS another operator	SMS to all operators	Total download capacity (Gigabytes)	Observations
Claro	Paquetes de Internet Roaming America 1 GB	₡99 000	Internet	N/A	N/A	N/A	N/A	N/A	N/A	1	N/A
Claro	Paquetes de Internet Roaming 150 MB	₡46 750	Internet	N/A	N/A	N/A	N/A	N/A	N/A	150	N/A
Claro	Paquetes de Internet Roaming 300 MB	₡82 000	Internet	N/A	N/A	N/A	N/A	N/A	N/A	300	N/A
Claro	Paquetes de Internet Roaming 500 MB	₡121 000	Internet	N/A	N/A	N/A	N/A	N/A	N/A	500	N/A
Claro	Paquetes de Internet Roaming 1 GB	₡187 000	Internet	N/A	N/A	N/A	N/A	N/A	N/A	1	N/A
Claro	Paquetes de datos adicionales 1 GB	₡2 500	Internet	N/A	N/A	N/A	N/A	N/A	N/A	1	N/A
Claro	Paquetes de datos adicionales 3 GB	₡4 500	Internet	N/A	N/A	N/A	N/A	N/A	N/A	3	N/A
Claro	Paquetes de datos adicionales 5 GB	₡7 000	Internet	N/A	N/A	N/A	N/A	N/A	N/A	5	N/A
Claro	Paquetes de datos adicionales 12 GB	₡14 000	Internet	N/A	N/A	N/A	N/A	N/A	N/A	12	N/A
Claro	Paquete Europa sin fronteras vigencia 1 día	₡6 000	Internet	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Claro	Paquete Europa sin fronteras vigencia 3 días	₡18 000	Internet	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Claro	Paquete Europa sin fronteras vigencia 5 días	₡30 000	Internet	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Kölbi	Roaming America Internet (Pospago)	N/A	Internet	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Kölbi	Servicio Roaming Datos por Región (Pospago)	N/A	Internet	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Claro	Paquete de Roaming Japón	₡31 200	Internet	N/A	N/A	150	N/A	N/A	N/A	512	N/A
Liberty	Plan Pospago LTE PRO @1 Portabilidad	₡10 700	Minutes, Internet	300	N/A	200	300	N/A	150	10	Includes unlimited data usage on social media apps (WhatsApp, Twitter, Waze) Accrue Gigas
Liberty	Plan Pospago LTE PRO @2 Portabilidad	₡16 000	Minutes, Internet	Unlimited	N/A	300	Unlimited	N/A	200	15	Includes unlimited data usage on social media apps (WhatsApp, Facebook, Instagram, Twitter, Waze) Accrue Gigas Transfer Gigas.
Liberty	Plan Pospago LTE PRO @3 Portabilidad	₡22 000	Minutes, Internet	Unlimited	N/A	600	Unlimited	N/A	300	19	Includes unlimited data usage on social media apps (WhatsApp, Facebook, Instagram, Twitter, Waze) Accrue Gigas Transfer Gigas.

Operator	Name of Telephone Plan	Cost without terminal	Included services	Minutes to the same operator	Minutes to another operator	Minutes to all operators	SMS to the same operator	SMS another operator	SMS to all operators	Total download capacity (Gigabytes)	Observations
Liberty	Plan Pospago LTE PRO @4 Portabilidad	₡27 200	Minutes, Internet	Unlimited	N/A	1000	Unlimited	N/A	600	24	Includes unlimited data usage on social media apps (WhatsApp, Facebook, Instagram, Twitter, Waze) Accrue Gigas Transfer Gigas.
Liberty	Plan Pospago LTE PRO @5 Portabilidad	₡33 200	Minutes, Internet	Unlimited	N/A	Unlimited	Unlimited	N/A	1000	29	Includes unlimited data usage on social media apps (WhatsApp, Facebook, Instagram, Twitter, Waze) Accrue Gigas Transfer Gigas.
Liberty	Plan Pospago LTE PRO @6 Portabilidad	₡42 200	Minutes, Internet	Unlimited	N/A	150	Unlimited	N/A	Unlimited	Unlimited	Includes unlimited data usage on social media apps (WhatsApp, Facebook, Instagram, Twitter, Waze) Transfer Gigas.
Liberty	Plan Pospago LTE PRO @1 Sin Celular	₡10 700	Minutes, Internet	300	N/A	200	300	N/A	150	8	Includes unlimited data usage on social media apps (WhatsApp, Twitter, Waze) Accrue Gigas
Liberty	Plan Pospago LTE PRO @2 Sin Celular	₡16 000	Minutes, Internet	Unlimited	N/A	300	Unlimited	N/A	200	11	Includes unlimited data usage on social media apps (WhatsApp, Facebook, Instagram, Twitter, Waze) Accrue Gigas Transfer Gigas.
Liberty	Plan Pospago LTE PRO @3 Sin Celular	₡22 000	Minutes, Internet	Unlimited	N/A	600	Unlimited	N/A	300	15	Includes unlimited data usage on social media apps (WhatsApp, Facebook, Instagram, Twitter, Waze) Accrue Gigas Transfer Gigas.
Liberty	Plan Pospago LTE PRO @4 Sin Celular	₡27 200	Minutes, Internet	Unlimited	N/A	1000	Unlimited	N/A	600	18	Includes unlimited data usage on social media apps (WhatsApp, Facebook, Instagram, Twitter, Waze) Accrue Gigas Transfer Gigas.
Liberty	Plan Pospago LTE PRO @5 Sin Celular	₡33 200	Minutes, Internet	Unlimited	N/A	Unlimited	Unlimited	N/A	1000	23	Includes unlimited data usage on social media apps (WhatsApp, Facebook, Instagram, Twitter, Waze) Accrue Gigas Transfer Gigas.
Liberty	Plan Pospago LTE PRO @6 Sin Celular	₡42 200	Minutos, Internet	Unlimited	N/A	N/A	Unlimited	N/A	Unlimited	Unlimited	Includes unlimited data usage on social media apps (WhatsApp, Facebook, Instagram, Twitter, Waze) Transfer Gigas.
Liberty	Plan WiFi Móvil Plan 10GB LTE PRO Básico	₡15 500	Internet	N/A	N/A	150	N/A	N/A	N/A	10	Only available for use with MIFI devices.

Operator	Name of Telephone Plan	Cost without terminal	Included services	Minutes to the same operator	Minutes to another operator	Minutes to all operators	SMS to the same operator	SMS another operator	SMS to all operators	Total download capacity (Gigabytes)	Observations
Kölbi	Plan Pospago Ultra k1	₡10 865	Minutos, Internet	N/A	N/A	N/A	N/A	N/A	150	10	1- Unused GIGAS may be accrued for local Internet consumption in a following month. 2- These phone plans may be marketed together with currently available financing options. 3-Unlimited free data in social media apps (WhatsApp, Instagram, Facebook, Waze and X).
Kölbi	Plan Pospago Ultra k2	₡15 228	Minutos, Internet	Unlimited	300	N/A	Unlimited	300	N/A	15	Users get unlimited free data in the following apps: WhatsApp, Instagram, Waze and X; users may additionally select, at no extra cost, 2 categories of apps from the following list: 1- SOCIAL (unlimited free data; includes: Tiktok, Pinterest, LinkedIn). 2- VIDEO (up to 5 GB of free data usage; includes: Netflix, Youtube, Disney +). 3- PRODUCTIVITY (up to 5 GB of free data usage; includes: Zoom, Teams, Web Ex). 4- MUSIC (unlimited free data; includes: Spotify, Sound Cloud, Kölbi Music).
Kölbi	Plan Pospago Ultra k3	₡20 304	Minutos, Internet	Unlimited	500	N/A	Unlimited	500	N/A	20	Users get unlimited free data in the following apps: WhatsApp, Instagram, Waze and X; users may additionally select, at no extra cost, 2 categories of apps from the following list: 1- SOCIAL (unlimited free data; includes: Tiktok, Pinterest, LinkedIn). 2- VIDEO (up to 5 GB of free data usage; includes: Netflix, Youtube, Disney +). 3- PRODUCTIVITY (up to 5 GB of free data usage; includes: Zoom, Teams, Web Ex). 4- MUSIC (unlimited free data; includes: Spotify, Sound Cloud, Kölbi Music).
Kölbi	Plan Pospago Ultra k4	₡28 427	Minutes, Internet	Unlimited	700	N/A	Unlimited	700	N/A	28	Users get unlimited free data in the following apps: WhatsApp, Instagram, Waze and X; users may additionally select, at no extra cost, 2 categories of apps from the following list: 1- SOCIAL (unlimited free data; includes: Tiktok, Pinterest, LinkedIn). 2- VIDEO (up to 5 GB of free data usage; includes: Netflix, Youtube, Disney +). 3- PRODUCTIVITY (up to 5 GB of free data usage; includes: Zoom, Teams, Web Ex). 4- MUSIC (unlimited free data; includes: Spotify, Sound Cloud, Kölbi Music).

Operator	Name of Telephone Plan	Cost without terminal	Included services	Minutes to the same operator	Minutes to another operator	Minutes to all operators	SMS to the same operator	SMS another operator	SMS to all operators	Total download capacity (Gigabytes)	Observations
Kölbi	Plan Pospago Ultra k5	₡42 645	Minutes, Internet	Unlimited	1000	N/A	Unlimited	1000	N/A	N/A	Users get unlimited free data in the following apps: WhatsApp, Instagram, Waze and X; users may additionally select, at no extra cost, 2 categories of apps from the following list: 1- SOCIAL (unlimited free data; includes: Tiktok, Pinterest, LinkedIn). 2- VIDEO (up to 5 GB of free data usage; includes: Netflix, Youtube, Disney +). 3- PRODUCTIVITY (up to 5 GB of free data usage; includes: Zoom, Teams, Web Ex). 4- MUSIC (unlimited free data; includes: Spotify, Sound Cloud, Kölbi Music).
Kölbi	Plan Datos 1	₡13 100	Internet	N/A	N/A	N/A	Unlimited	Unlimited	Unlimited	14	1- To upgrade your download capacity, switch to a higher capacity plan or purchase a Postpaid Internet Package. 2- Reach speeds of up to 50 Mbps in the 4.5G network.
Kölbi	Plan Datos 2	₡16 146	Internet	N/A	N/A	N/A	N/A	N/A	N/A	18	1- To upgrade your download capacity, switch to a higher capacity plan or purchase a Postpaid Internet Package. 2- Reach speeds of up to 50 Mbps in the 4.5G network.
Kölbi	Plan Datos 3	₡25 286	Internet	N/A	N/A	N/A	N/A	N/A	N/A	30	1- To upgrade your download capacity, switch to a higher capacity plan or purchase a Postpaid Internet Package. 2- Reach speeds of up to 50 Mbps in the 4.5G network.
Kölbi	Plan Datos 4	₡29 348	Internet	N/A	N/A	N/A	N/A	N/A	N/A	50	1- To upgrade your download capacity, switch to a higher capacity plan or purchase a Postpaid Internet Package. 2- Reach speeds of up to 50 Mbps in the 4.5G network.

Operator	Name of Telephone Plan	Cost without terminal	Included services	Minutes to the same operator	Minutes to another operator	Minutes to all operators	SMS to the same operator	SMS another operator	SMS to all operators	Total download capacity (Gigabytes)	Observations
Kölbi	Plan kölbi Datos para Dispositivos	₡2 539	Internet	N/A	N/A	N/A	N/A	N/A	N/A	40	1- This mobile connectivity service allows customers to manage, control and monitor their mobile devices in real time through the use of low data consumption applications. 2- It has multiple features, such as: bar codes, vehicle tracking, dataphone/POS and vehicle fleet management). 3- This service is specifically designed for low data consumption applications. 4- It enables users to send and receive SMS messages domestically (billed as overage fees).
Kölbi	Plan kölbi Datos y Voz para Dispositivos	₡2 539	Internet	N/A	N/A	N/A	N/A	N/A	N/A	40	1- This mobile connectivity service allows customers to manage, control and monitor their mobile devices in real time through the use of low data consumption applications. 2- It has multiple features, such as: bar codes, vehicle tracking, dataphone/POS and vehicle fleet management). 3- This service is specifically designed for low data consumption applications. 4- It enables users to send and receive SMS messages domestically (billed as overage fees).
Kölbi	Paquete 1 GIGA	₡2 500	Internet	N/A	N/A	N/A	N/A	N/A	N/A	1	1. This package is prioritized over the plan's consumption capacity. 2. Available to postpaid and data plan customers. 3. The pertinent fees are billed in the monthly invoice. 4. The total price of each package includes taxes and legal fees: VAT (13%), 911 (0.75%) & Red Cross (1.0%). 5. This package applies only to local data consumption. 4. Activate via SMS (by sending the activation word to 8888), via voice call (by dialing *888#), via the "Mi kolbi" app, or via the Web, in: (www.kolbi.cr)

Operator	Name of Telephone Plan	Cost without terminal	Included services	Minutes to the same operator	Minutes to another operator	Minutes to all operators	SMS to the same operator	SMS another operator	SMS to all operators	Total download capacity (Gigabytes)	Observations
Kölbi	PAQUETE 3 GIGAS	₡5 000	Internet	N/A	N/A	N/A	N/A	N/A	N/A	3	1. This package is prioritized over the plan's consumption capacity. 2. Available to postpaid and data plan customers. 3. The pertinent fees are billed in the monthly invoice. 4. The total price of each package includes taxes and legal fees: VAT (13%), 911 (0.75%) & Red Cross (1.0%). 5. This package applies only to local data consumption. 6. Activate via SMS (by sending the activation word to 8888), via voice call (by dialing *888#), via the "Mi kolbi" app, or via the Web, in: (www.kolbi.cr)
Kölbi	PAQUETE 6 GIGAS	₡8 000	Internet	N/A	N/A	N/A	N/A	N/A	N/A	6	1. This package is prioritized over the plan's consumption capacity. 2. Available to postpaid and data plan customers. 3. The pertinent fees are billed in the monthly invoice. 4. The total price of each package includes taxes and legal fees: VAT (13%), 911 (0.75%) & Red Cross (1.0%). 5. This package applies only to local data consumption. 6. Activate via SMS (by sending the activation word to 8888), via voice call (by dialing *888#), via the "Mi kolbi" app, or via the Web, in: (www.kolbi.cr)
Kölbi	PAQUETE 12 GIGAS	₡13 000	Internet	N/A	N/A	N/A	N/A	N/A	N/A	12	1. This package is prioritized over the plan's consumption capacity. 2. Available to postpaid and data plan customers. 3. The pertinent fees are billed in the monthly invoice. 4. The total price of each package includes taxes and legal fees: VAT (13%), 911 (0.75%) & Red Cross (1.0%). 5. This package applies only to local data consumption. 6. Activate via SMS (by sending the activation word to 8888), via voice call (by dialing *888#), via the "Mi kolbi" app, or via the Web, in: (www.kolbi.cr)

Operator	Name of Telephone Plan	Cost without terminal	Included services	Minutes to the same operator	Minutes to another operator	Minutes to all operators	SMS to the same operator	SMS another operator	SMS to all operators	Total download capacity (Gigabytes)	Observations
Kölbi	Paquete Unlimited	₡2 000	Internet	N/A	N/A	N/A	N/A	N/A	N/A	N/A	1. Available to postpaid and data plan customers. 2. The pertinent fees are billed in the monthly invoice. 3. This package applies only to local data consumption. 4. The total price of each package includes taxes and legal fees: VAT (13%), 911 (0.75%) & Red Cross (1.0%). 5. Activate via SMS (by sending the activation word to 8888), via voice call (by dialing *888#), via the "Mi kolbi" app, or via the Web, in: (www.kolbi.cr)
Kölbi	kölbi favoritos pospago	₡3 554	Minutes	Unlimited	N/A	100	N/A	N/A	N/A	N/A	1. Available to natural persons with a 12-24 month postpaid plan. Not available to "Fusión k" customers. 2. The "favorite number" applies only to local voice calls within the kölbi network. Does not apply to kölbi's roaming services. 3. The "favorite number" can belong to a prepaid plan customer, to a postpaid plan customer, or to a fixed telephony customer within the kölbi network. 4. Refer to the terms and conditions in kolbi.cr for more information on restrictions and exclusions.
Kölbi	Paquete de Minutos	₡2 235	Minutes	N/A	N/A	N/A	N/A	N/A	N/A	N/A	The total monthly price includes taxes and legal fees: VAT (13%), 911 (0.75%) & Red Cross (1.0%). This package is available to fixed and mobile postpaid plan customers.
Kölbi	kölbiFusión	N/A	Minutes, Internet	N/A	N/A	N/A	N/A	N/A	N/A	N/A	1. Bundle your services and make your life easier by: - Organizing everything into one single invoice. - Making only one payment per month. - Saving time. - Grouping and personalizing all the services that you and your family members enjoy. 2. Registering for this service is very easy: If you have an active "Ultra k" postpaid plan subscription, and an optical fiber kölbi home Internet subscription, visit our online store or call 1193 to activate the Grouping feature for your kölbi services.

Source: SUTEL, General Directorate of Markets. Costa Rica, 2023.

Table 64. Costa Rica: Characteristics of the fixed telecommunications packages offered in December 2022

Operator	Name of Package	Cost	Services	Download Speed (Mbps)	Type of Internet Connection	Number of Channels	Domestic minutes to the same operator's fixed network	Domestic minutes to mobile networks	Minutes to all operators	Domestic minutes to another operator
Kölbi	Plan Triple Tv Avanzada + Telefonía + Internet 6Mbps	₡31 900	Fixed telephony + Fixed Internet + Television	6	Copper + Fiber	115	600	0	0	0
Kölbi	Plan Triple Tv Avanzada + Telefonía + Internet 4Mbps	₡30 400	Fixed telephony + Fixed Internet + Television	4	Copper + Fiber	119	600	0	0	0
Kölbi	Plan Triple Tv Avanzada + Telefonía + Internet 3Mbps	₡30 900	Fixed telephony + Fixed Internet + Television	3	Copper + Fiber	115	600	0	0	0
Kölbi	Plan Triple Tv Avanzada + Telefonía + Internet 2Mbps	₡28 400	Fixed telephony + Fixed Internet + Television	2	Copper + Fiber	119	600	0	0	0
Kölbi	Plan Triple Tv Avanzada + Telefonía + Internet 20Mbps	₡33 900	Fixed telephony + Fixed Internet + Television	20	Copper + Fiber	115	60	0	0	0
Kölbi	Plan Triple TV Avanzada + Telefonía + Internet 10Mbps	₡31 900	Fixed telephony + Fixed Internet + Television	10	Copper + Fiber	115	600	0	0	0
Kölbi	Plan Triple Tv Avanzada + Telefonía + Internet 1 Mbps	₡28 900	Fixed telephony + Fixed Internet + Television	1	Copper + Fiber	115	600	0	0	0
Kölbi	Plan Triple kA TV + Telefonía + Internet Simétrico 500/500 Mbps	₡131 900	Fixed telephony + Fixed Internet + Television	500	Fiber	123	60	0	0	0
Kölbi	Plan Triple kA TV + Telefonía + Internet Simétrico 50/50 Mbps	₡49 900	Fixed telephony + Fixed Internet + Television	50	Fiber	123	60	0	0	0
Kölbi	Plan Triple kA TV + Telefonía + Internet Simétrico 300/300 Mbps	₡86 900	Fixed telephony + Fixed Internet + Television	300	Fiber	123	60	0	0	0
Kölbi	Plan Triple kA TV + Telefonía + Internet Simétrico 30/30 Mbps	₡37 900	Fixed telephony + Fixed Internet + Television	30	Fiber	123	60	0	0	0
Kölbi	Plan Triple kA TV + Telefonía + Internet Simétrico 200/200 Mbps	₡61 900	Fixed telephony + Fixed Internet + Television	200	Fiber	123	60	0	0	0
Kölbi	Plan Triple kA TV + Telefonía + Internet Simétrico 100/100 Mbps	₡46 900	Fixed telephony + Fixed Internet + Television	100	Fiber	123	60	0	0	0
Kölbi	Plan Triple kA TV + Telefonía + Internet 50Mbps	₡39 900	Fixed telephony + Fixed Internet + Television	50	Fiber	123	60	0	0	0
Kölbi	Plan Triple kA TV + Telefonía + Internet 500Mbps	₡121 900	Fixed telephony + Fixed Internet + Television	500	Fiber	123	60	0	0	0
Kölbi	Plan Triple kA TV + Telefonía + Internet 30Mbps	₡37 900	Fixed telephony + Fixed Internet + Television	30	Fiber	123	60	0	0	0
Kölbi	Plan Triple kA TV + Telefonía + Internet 300Mbps	₡86 900	Fixed telephony + Fixed Internet + Television	300	Fiber	123	60	0	0	0
Kölbi	Plan Triple kA TV + Telefonía + Internet 200Mbps	₡51 900	Fixed telephony + Fixed Internet + Television	200	Fiber	123	60	0	0	0
Kölbi	Plan Triple kA TV + Telefonía + Internet 10Mbps	₡30 400	Fixed telephony + Fixed Internet + Television	10	Fiber	127	600	0	0	0
Kölbi	Plan Triple kA TV + Telefonía + Internet 100Mbps	₡46 900	Fixed telephony + Fixed Internet + Television	100	Fiber	123	60	0	0	0

Operator	Name of Package	Cost	Services	Download Speed (Mbps)	Type of Internet Connection	Number of Channels	Domestic minutes to the same operator's fixed network	Domestic minutes to mobile networks	Minutes to all operators	Domestic minutes to another operator
Kölbi	Plan Dúo TV Avanzada + Telefonía	₡24 750	Fixed telephony + Television	N/A	Copper + Fiber	119	600	0	0	0
Kölbi	Plan Dúo Tv Avanzada + Internet 6Mbps	₡27 400	Fixed Internet + Television	6	Copper + Fiber	119	N/A	N/A	N/A	N/A
Kölbi	Plan Dúo TV Avanzada + Internet 4Mbps	₡28 900	Fixed Internet + Television	4	Copper + Fiber	115	N/A	N/A	N/A	N/A
Kölbi	Plan Dúo TV Avanzada + Internet 3Mbps	₡26 400	Fixed Internet + Television	3	Copper + Fiber	119	N/A	N/A	N/A	N/A
Kölbi	Plan Dúo TV Avanzada + Internet 2Mbps	₡26 900	Fixed Internet + Television	2	Copper + Fiber	115	N/A	N/A	N/A	N/A
Kölbi	Plan Dúo TV Avanzada + Internet 20Mbps	₡30 400	Fixed Internet + Television	20	Copper + Fiber	119	N/A	N/A	N/A	N/A
Kölbi	Plan Dúo TV Avanzada + Internet 10Mbps	₡28 900	Fixed Internet + Television	10	Copper + Fiber	115	N/A	N/A	N/A	N/A
Kölbi	Plan Dúo TV Avanzada + Internet 1Mbps	₡24 400	Fixed Internet + Television	1	Copper + Fiber	119	N/A	N/A	N/A	N/A
Kölbi	Plan Dúo Telefonía + Internet Simétrico 50/50 Mbps	₡36 900	Fixed telephony + Fixed Internet	50	Fiber	N/A	60	0	0	0
Kölbi	Plan Dúo Telefonía + Internet Simétrico 30/30 Mbps	₡24 900	Fixed telephony + Fixed Internet	30	Fiber	N/A	60	0	0	0
Kölbi	Plan Dúo Telefonía + Internet Simétrico 200/200 Mbps	₡43 900	Fixed telephony + Fixed Internet	200	Fiber	N/A	60	0	0	0
Kölbi	Plan Dúo Telefonía + Internet Simétrico 100/100 Mbps	₡28 900	Fixed telephony + Fixed Internet	100	Fiber	N/A	60	0	0	0
Kölbi	Plan Dúo Telefonía + Internet Simétrico 300/300 Mbps	₡68 900	Fixed telephony + Fixed Internet	300	Fiber	N/A	60	0	0	0
Kölbi	Plan Dúo Telefonía + Internet 6Mbps	₡19 900	Fixed telephony + Fixed Internet	6	Copper + Fiber	N/A	60	0	0	0
Kölbi	Plan Dúo Telefonía + Internet 50Mbps	₡30 900	Fixed telephony + Fixed Internet	50	Fiber	N/A	60	0	0	0
Kölbi	Plan Dúo Telefonía + Internet 500Mbps	₡207 900	Fixed telephony + Fixed Internet	500	Fiber	N/A	60	0	0	0
Kölbi	Plan Dúo Telefonía + Internet 4Mbps	₡17 900	Fixed telephony + Fixed Internet	4	Copper + Fiber	N/A	600	0	0	0
Kölbi	Plan Dúo Telefonía + Internet 3Mbps	₡16 900	Fixed telephony + Fixed Internet	3	Copper + Fiber	N/A	60	0	0	0
Kölbi	Plan Dúo Telefonía + Internet 30Mbps	₡28 900	Fixed telephony + Fixed Internet	30	Fiber	N/A	60	0	0	0
Kölbi	Plan Dúo Telefonía + Internet 300Mbps	₡147 900	Fixed telephony + Fixed Internet	300	Fiber	N/A	60	0	0	0
Kölbi	Plan Dúo Telefonía + Internet 2Mbps	₡14 900	Fixed telephony + Fixed Internet	2	Copper + Fiber	N/A	600	0	0	0
Kölbi	Plan Dúo Telefonía + Internet 20Mbps	₡24 900	Fixed telephony + Fixed Internet	20	Copper + Fiber	N/A	60	0	0	0
Kölbi	Plan Dúo Telefonía + Internet 200Mbps	₡82 900	Fixed telephony + Fixed Internet	200	Fiber	N/A	600	0	0	0
Kölbi	Plan Dúo Telefonía + Internet 1Mbps	₡11 900	Fixed telephony + Fixed Internet	1	Copper + Fiber	N/A	60	0	0	0

Operator	Name of Package	Cost	Services	Download Speed (Mbps)	Type of Internet Connection	Number of Channels	Domestic minutes to the same operator's fixed network	Domestic minutes to mobile networks	Minutes to all operators	Domestic minutes to another operator
Kölbi	Plan Dúo Telefonía + Internet 10Mbps	₡19 900	Fixed telephony + Fixed Internet	10	Cable + Fiber	N/A	600	0	0	0
Kölbi	Plan Dúo Telefonía + Internet 100Mbps	₡28 900	Fixed telephony + Fixed Internet	100	Fiber	N/A	60	0	0	0
Kölbi	Plan Dúo Telefonía + Internet Simétrico 500/500 Mbps	₡113 900	Fixed telephony + Fixed Internet	500	Fiber	N/A	60	0	0	0
Kölbi	Plan Dúo kA TV + Internet Simétrico 500/500 Mbps	₡128 900	Fixed Internet + Television	500	Fiber	123	N/A	N/A	N/A	N/A
Kölbi	Plan Dúo kA TV + Internet Simétrico 50/50 Mbps	₡46 900	Fixed Internet + Television	50	Fiber	123	N/A	N/A	N/A	N/A
Kölbi	Plan Dúo kA TV + Internet Simétrico 300/300 Mbps	₡83 900	Fixed Internet + Television	300	Fiber	123	N/A	N/A	N/A	N/A
Kölbi	Plan Dúo kA TV + Internet Simétrico 30/30 Mbps	₡34 900	Fixed Internet + Television	30	Fiber	123	N/A	N/A	N/A	N/A
Kölbi	Plan Dúo kA TV + Internet Simétrico 200/200 Mbps	₡58 900	Fixed Internet + Television	200	Fiber	123	N/A	N/A	N/A	N/A
Kölbi	Plan Dúo kA TV + Internet Simétrico 100/100 Mbps	₡43 900	Fixed Internet + Television	100	Fiber	123	N/A	N/A	N/A	N/A
Kölbi	Plan Dúo kA TV + Internet 50Mbps	₡37 400	Fixed Internet + Television	50	Fiber	127	N/A	N/A	N/A	N/A
Kölbi	Plan Dúo kA TV + Internet 500Mbps	₡223 400	Fixed Internet + Television	500	Fiber	127	N/A	N/A	N/A	N/A
Kölbi	Plan Dúo kA TV + Internet 30Mbps	₡36 900	Fixed Internet + Television	30	Fiber	123	N/A	N/A	N/A	N/A
Kölbi	Plan Dúo kA TV + Internet 300Mbps	₡163 400	Fixed Internet + Television	300	Fiber	127	N/A	N/A	N/A	N/A
Kölbi	Plan Dúo kA TV + Internet 200Mbps	₡99 900	Fixed Internet + Television	200	Fiber	123	N/A	N/A	N/A	N/A
Kölbi	Plan Dúo kA TV + Internet 10Mbps	₡28 900	Fixed Internet + Television	10	Fiber	123	N/A	N/A	N/A	N/A
Kölbi	Plan Dúo kA TV + Internet 100Mbps	₡43 900	Fixed Internet + Television	100	Fiber	123	N/A	N/A	N/A	N/A
Kölbi	Plan Dúo 6 Mbps + TV Digital	₡27 400	Fixed Internet + Television	6	Cable + Fiber	119	N/A	N/A	N/A	N/A
Kölbi	Plan Dúo 50 Mbps + TV Digital	₡37 400	Fixed Internet + Television	50	Cable + Fiber	119	N/A	N/A	N/A	N/A
Kölbi	Plan Dúo 30 Mbps + TV Digital	₡35 400	Fixed Internet + Television	30	Cable + Fiber	119	N/A	N/A	N/A	N/A
Kölbi	Plan Dúo 20 Mbps + TV Digital	₡30 400	Fixed Internet + Television	20	Cable + Fiber	119	N/A	N/A	N/A	N/A
Kölbi	Plan Dúo 100Mbps + TV Digital	₡38 900	Fixed Internet + Television	100	Cable + Fiber	125	N/A	N/A	N/A	N/A
Kölbi	Plan Dúo 10 Mbps + TV Digital	₡27 400	Fixed Internet + Television	10	Cable + Fiber	119	N/A	N/A	N/A	N/A
Liberty	TRIPLEPLAY MEGA 50	₡35 500	Fixed telephony + Fixed Internet + Television	50	Copper + Fiber	242	500	0	0	200
Liberty	TRIPLEPLAY MEGA 325	₡76 500	Fixed telephony + Fixed Internet + Television	325	Cable + Fiber	242	500	0	0	200

Operator	Name of Package	Cost	Services	Download Speed (Mbps)	Type of Internet Connection	Number of Channels	Domestic minutes to the same operator's fixed network	Domestic minutes to mobile networks	Minutes to all operators	Domestic minutes to another operator
Liberty	TRIPLEPLAY MEGA 30	₡33 500	Fixed telephony + Fixed Internet + Television	30	Cable + Fiber	242	500	0	0	200
Liberty	TRIPLEPLAY MEGA 200	₡53 500	Fixed telephony + Fixed Internet + Television	200	Cable + Fiber	242	500	0	0	200
Liberty	TRIPLEPLAY MEGA 100	₡38 500	Fixed telephony + Fixed Internet + Television	100	Cable + Fiber	242	500	0	0	200
Liberty	DOBLEPLAY MEGA 50	₡34 000	Fixed Internet + Television	50	Copper + Fiber	242	N/A	N/A	N/A	N/A
Liberty	DOBLEPLAY MEGA 325	₡75 000	Fixed Internet + Television	325	Cable + Fiber	242	N/A	N/A	N/A	N/A
Liberty	DOBLEPLAY MEGA 30	₡32 000	Fixed Internet + Television	30	Cable + Fiber	242	N/A	N/A	N/A	N/A
Liberty	DOBLEPLAY MEGA 200	₡52 000	Fixed Internet + Television	200	Copper + Fiber	242	N/A	N/A	N/A	N/A
Liberty	DOBLEPLAY MEGA 100	₡37 000	Fixed Internet + Television	100	Cable + Fiber	242	N/A	N/A	N/A	N/A
Liberty	Doble Play Mega 15	₡28 990	Fixed Internet + Television	15	Cable + Fiber	184	N/A	N/A	N/A	N/A
Telecable	Paq.TV Digital Plus+ @30Mbps Telecable	₡29 500	Fixed Internet + Television	30	Copper + Fiber	215	N/A	N/A	N/A	N/A
Telecable	Paq. TV Digital Plus+HD+@ 15Mbps	₡34 775	Fixed Internet + Television	15	Cable + Fiber	265	N/A	N/A	N/A	N/A
Telecable	Paq. TV Digital Plus+HD +@ 50Mbps	₡44 205	Fixed Internet + Television	50	Cable + Fiber	265	N/A	N/A	N/A	N/A
Telecable	Paq. TV Digital Plus+HD +@ 300Mbps	₡95 455	Fixed Internet + Television	300	Cable + Fiber	265	N/A	N/A	N/A	N/A
Telecable	Paq. TV Digital Plus+HD +@ 30 Mbps	₡40 515	Fixed Internet + Television	30	Cable + Fiber	265	N/A	N/A	N/A	N/A
Telecable	Paq. TV Digital Plus+HD +@ 200 Mbps	₡62 435	Fixed Internet + Television	200	Cable + Fiber	265	N/A	N/A	N/A	N/A
Telecable	Paq. TV Digital Plus+HD +@ 100Mbps	₡45 945	Fixed Internet + Television	100	Cable + Fiber	265	N/A	N/A	N/A	N/A
Telecable	Paq. TV Digital Plus+@ 15Mbps	₡29 525	Fixed Internet + Television	15	Cable + Fiber	205	N/A	N/A	N/A	N/A
Telecable	Paq. TV Digital Plus +@ 50Mbps	₡31 500	Fixed Internet + Television	50	Cable + Fiber	215	N/A	N/A	N/A	N/A
Telecable	Paq. TV Digital Plus +@ 300Mbps	₡73 900	Fixed Internet + Television	500	Cable + Fiber	215	N/A	N/A	N/A	N/A
Telecable	Paq. TV Digital Plus +@ 30 Mbps	₡35 265	Fixed Internet + Television	30	Cable + Fiber	205	N/A	N/A	N/A	N/A
Telecable	Paq. TV Digital Plus +@ 200 Mbps	₡53 950	Fixed Internet + Television	200	Cable + Fiber	157	N/A	N/A	N/A	N/A
Telecable	Paq. TV Digital Plus +@ 10Mbps	₡26 800	Fixed Internet + Television	10	Cable + Fiber	157	N/A	N/A	N/A	N/A
Telecable	Paq. TV Digital Plus +@ 100Mbps	₡33 000	Fixed Internet + Television	100	Cable + Fiber	215	N/A	N/A	N/A	N/A
Telecable	Paq. TV Digital Plus + @500 Mbps	₡73 900	Fixed Internet + Television	500	Cable + Fiber	215	N/A	N/A	N/A	N/A
Telecable	Paq. TV Digital +HD+@ 50 Mbps	₡41 425	Fixed Internet + Television	50	Cable + Fiber	235	N/A	N/A	N/A	N/A
Telecable	Paq. TV Digital +@ 50 Mbps	₡25 495	Fixed Internet + Television	50	Cable + Fiber	175	N/A	N/A	N/A	N/A

Operator	Name of Package	Cost	Services	Download Speed (Mbps)	Type of Internet Connection	Number of Channels	Domestic minutes to the same operator's fixed network	Domestic minutes to mobile networks	Minutes to all operators	Domestic minutes to another operator
Telecable	Paq. FTTH Tv Dig+ 200 @A	₡56 975	Fixed Internet + Television	200	Fiber	175	N/A	N/A	N/A	N/A
Telecable	Paq. FTTH Tv Dig Plus + 500 @S	₡74 900	Fixed Internet + Television	500	Fiber	215	N/A	N/A	N/A	N/A
Telecable	Paq. FTTH Tv Dig Plus + 50 @S Telecable	₡32 500	Fixed Internet + Television	50	Fiber	215	N/A	N/A	N/A	N/A
Telecable	Paq. FTTH Tv Dig Plus + 300 @S	₡103 775	Fixed Internet + Television	300	Fiber	205	N/A	N/A	N/A	N/A
Telecable	Paq. FTTH Tv Dig Plus + 30 @S	₡23 500	Fixed Internet + Television	30	Fiber	215	N/A	N/A	N/A	N/A
Telecable	Paq. FTTH Tv Dig Plus + 200 @S	₡39 975	Fixed Internet + Television	200	Fiber	240	N/A	N/A	N/A	N/A
Telecable	Paq. FTTH Tv Dig Plus + 15 @A	₡31 725	Fixed Internet + Television	15	Fiber	205	N/A	N/A	N/A	N/A
Telecable	Paq. FTTH Tv Dig Plus + 100 @S Telecable	₡33 000	Fixed Internet + Television	100	Fiber	215	N/A	N/A	N/A	N/A
Telecable	Paq. FTTH Tv Dig Avz + 50 @S	₡43 800	Fixed Internet + Television	50	Fiber	157	N/A	N/A	N/A	N/A
Telecable	Paq. FTTH Tv Dig Avz + 200 @S	₡68 600	Fixed Internet + Television	200	Fiber	157	N/A	N/A	N/A	N/A
Telecable	Paq. FTTH Tv Dig Avz + 15 @S	₡36 000	Fixed Internet + Television	15	Fiber	157	N/A	N/A	N/A	N/A
Telecable	Paq. FTTH Tv Dig Avz + 100 @S	₡46 100	Fixed Internet + Television	100	Fiber	157	N/A	N/A	N/A	N/A
Telecable	Paq. FTTH Tv Dig + 30 @S	₡27 825	Fixed Internet + Television	30	Fiber	175	N/A	N/A	N/A	N/A
Telecable	Paq. FTTH Tv Dig + 15 @S	₡31 815	Fixed Internet + Television	15	Fiber	175	N/A	N/A	N/A	N/A
Telecable	Paq. FTTH Tv Dig + 100 @A	₡39 975	Fixed Internet + Television	100	Fiber	175	N/A	N/A	N/A	N/A
Telecable	Paq. FTTH Tv Dig + 500 @S	₡86 975	Fixed Internet + Television	500	Fiber	175	N/A	N/A	N/A	N/A
Telecable	Paq. FTTH Tv Dig + 50 @S	₡34 900	Fixed Internet + Television	50	Fiber	175	N/A	N/A	N/A	N/A
Telecable	Paq. FTTH Tv Dig + 300 @S	₡101 025	Fixed Internet + Television	300	Fiber	175	N/A	N/A	N/A	N/A
Telecable	Paq. FTTH Tv Dig + 200 @S Telecable	₡39 500	Fixed Internet + Television	200	Fiber	215	N/A	N/A	N/A	N/A
Telecable	Paq. FTTH Dig Plus + 50 @A	₡37 800	Fixed Internet + Television	50	Fiber	157	N/A	N/A	N/A	N/A
Telecable	Paq. FTTH Dig Plus + 200 @A	₡55 250	Fixed Internet + Television	200	Fiber	157	N/A	N/A	N/A	N/A
Telecable	Paq. FTTH Dig Plus + 15 @S	₡34 800	Fixed Internet + Television	15	Fiber	157	N/A	N/A	N/A	N/A
Telecable	Paq. FTTH Dig Plus + 100 @A	₡39 950	Fixed Internet + Television	100	Fiber	157	N/A	N/A	N/A	N/A
Telecable	Paq. FTTH Dig Plus + 10 @A	₡28 940	Fixed Internet + Television	10	Fiber	157	N/A	N/A	N/A	N/A
Telecable	Paq. FTTH Dig Avz + 300 @A	₡96 240	Fixed Internet + Television	300	Fiber	157	N/A	N/A	N/A	N/A
Telecable	Paq. FTTH Dig Avz + 100 @A	₡36 850	Fixed Internet + Television	100	Fiber	157	N/A	N/A	N/A	N/A
Telecable	Paq TV Digital +HD+@ 300 Mbps	₡91 325	Fixed Internet + Television	300	Cable + Fiber	235	N/A	N/A	N/A	N/A

Operator	Name of Package	Cost	Services	Download Speed (Mbps)	Type of Internet Connection	Number of Channels	Domestic minutes to the same operator's fixed network	Domestic minutes to mobile networks	Minutes to all operators	Domestic minutes to another operator
Telecable	Paq TV Digital +HD+@ 30 Mbps	₡37 825	Fixed Internet + Television	30	Cable + Fiber	235	N/A	N/A	N/A	N/A
Telecable	Paq TV Digital +HD+@ 200 Mbps	₡59 875	Fixed Internet + Television	200	Cable + Fiber	235	N/A	N/A	N/A	N/A
Telecable	Paq TV Digital +HD+@ 15 Mbps	₡31 825	Fixed Internet + Television	15	Cable + Fiber	235	N/A	N/A	N/A	N/A
Telecable	Paq TV Digital +HD+@ 100 Mbps	₡42 825	Fixed Internet + Television	100	Cable + Fiber	235	N/A	N/A	N/A	N/A
Telecable	Paq TV Digital +@ 300 Mbps	₡86 075	Fixed Internet + Television	300	Cable + Fiber	175	N/A	N/A	N/A	N/A
Telecable	Paq TV Digital +@ 30 Mbps	₡32 575	Fixed Internet + Television	30	Cable + Fiber	175	N/A	N/A	N/A	N/A
Telecable	Paq TV Digital +@ 200 Mbps	₡54 625	Fixed Internet + Television	200	Cable + Fiber	175	N/A	N/A	N/A	N/A
Telecable	Paq TV Digital +@ 15 Mbps	₡26 575	Fixed Internet + Television	15	Cable + Fiber	175	N/A	N/A	N/A	N/A
Telecable	Paq TV Digital +@ 100 Mbps	₡37 575	Fixed Internet + Television	100	Cable + Fiber	175	N/A	N/A	N/A	N/A
Telecable	Paq TV Digital +@ 10 Mbps	₡23 900	Fixed Internet + Television	10	Cable + Fiber	119	N/A	N/A	N/A	N/A
Telecable	FTTH TV Digital Plus +HD+ 500@ S Telecable	₡94 975	Fixed Internet + Television	500	Copper + Fiber	265	N/A	N/A	N/A	N/A
Telecable	FTTH TV Digital Plus +HD+ 50@ S	₡49 825	Fixed Internet + Television	50	Fiber	265	N/A	N/A	N/A	N/A
Telecable	FTTH TV Digital Plus +HD+ 300@ S	₡109 025	Fixed Internet + Television	300	Fiber	265	N/A	N/A	N/A	N/A
Telecable	FTTH TV Digital Plus +HD+ 30@ S	₡36 975	Fixed Internet + Television	30	Fiber	265	N/A	N/A	N/A	N/A
Telecable	FTTH TV Digital Plus +HD+ 200@ S	₡48 275	Fixed Internet + Television	200	Fiber	265	N/A	N/A	N/A	N/A
Telecable	FTTH TV Digital Plus +HD+ 15@ S	₡39 885	Fixed Internet + Television	15	Fiber	265	N/A	N/A	N/A	N/A
Telecable	FTTH TV Digital Plus +HD+ 100@ A Telecable	₡48 275	Fixed Internet + Television	100	Fiber	265	N/A	N/A	N/A	N/A
Telecable	FTTH TV Digital +HD+ 500@ S	₡92 225	Fixed Internet + Television	500	Fiber	235	N/A	N/A	N/A	N/A
Telecable	FTTH TV Digital +HD+ 50@ S	₡47 075	Fixed Internet + Television	50	Fiber	235	N/A	N/A	N/A	N/A
Telecable	FTTH TV Digital +HD+ 300@ S	₡106 275	Fixed Internet + Television	300	Fiber	235	N/A	N/A	N/A	N/A
Telecable	FTTH TV Digital +HD+ 30@ S	₡33 075	Fixed Internet + Television	30	Fiber	235	N/A	N/A	N/A	N/A
Telecable	FTTH TV Digital +HD+ 200@ S Telecable	₡45 225	Fixed Internet + Television	200	Copper + Fiber	235	N/A	N/A	N/A	N/A
Telecable	FTTH TV Digital +HD+ 15@ S Telecable	₡37 065	Fixed Internet + Television	15	Fiber	235	N/A	N/A	N/A	N/A
Telecable	FTTH TV Digital +HD+ 100@ S Telecable	₡43 272	Fixed Internet + Television	100	Fiber	235	N/A	N/A	N/A	N/A
Telecable	@ 500 Mbps	₡40 000	Fixed Internet + Television	500	Cable + Fiber	215	N/A	N/A	N/A	N/A
TIGO (Milicom)	TV Digital HD + 75 Mbps	₡27 900	Fixed Internet + Television	75	Cable + Fiber	208	N/A	N/A	N/A	N/A

Operator	Name of Package	Cost	Services	Download Speed (Mbps)	Type of Internet Connection	Number of Channels	Domestic minutes to the same operator's fixed network	Domestic minutes to mobile networks	Minutes to all operators	Domestic minutes to another operator
TIGO (Milicom)	TV Digital HD + 50 Mbps	₡26 300	Fixed Internet + Television	50	Cable + Fiber	246	N/A	N/A	N/A	N/A
TIGO (Milicom)	TV Digital HD + 350 Mbps	₡80 600	Fixed Internet + Television	350	Cable + Fiber	246	N/A	N/A	N/A	N/A
TIGO (Milicom)	TV Digital HD + 300 Mbps	₡66 900	Fixed Internet + Television	300	Cable + Fiber	246	N/A	N/A	N/A	N/A
TIGO (Milicom)	TV Digital HD + 200 Mbps	₡38 900	Fixed Internet + Television	200	Cable + Fiber	246	N/A	N/A	N/A	N/A
TIGO (Milicom)	TV Digital HD + 100 Mbps	₡34 900	Fixed Internet + Television	100	Cable + Fiber	246	N/A	N/A	N/A	N/A
TIGO (Milicom)	TV Digital Avanzado + 50 Megas	₡35 900	Fixed Internet + Television	50	Cable + Fiber	170	N/A	N/A	N/A	N/A
TIGO (Milicom)	TV Digital Avanzado + 30 Megas	₡31 900	Fixed Internet + Television	30	Cable + Fiber	177	N/A	N/A	N/A	N/A
TIGO (Milicom)	TV Digital Avanzado + 20 Megas	₡26 300	Fixed Internet + Television	20	Cable + Fiber	170	N/A	N/A	N/A	N/A
TIGO (Milicom)	TV Digital Avanzado + 15 Megas	₡24 900	Fixed Internet + Television	15	Cable + Fiber	170	N/A	N/A	N/A	N/A
TIGO (Milicom)	TV Digital Avanzado + 100 Megas	₡36 900	Fixed Internet + Television	100	Cable + Fiber	170	N/A	N/A	N/A	N/A
TIGO (Milicom)	TV Digital + 50 Mbps	₡27 990	Fixed Internet + Television	50	Cable + Fiber	170	N/A	N/A	N/A	N/A
TIGO (Milicom)	ONETV+ 300 Mbps	₡66 900	Fixed Internet + Television	300	Cable + Fiber	246	N/A	N/A	N/A	N/A
TIGO (Milicom)	ONEtv HD + 100 Mbps	₡32 990	Fixed Internet + Television	100	Cable + Fiber	246	N/A	N/A	N/A	N/A
TIGO (Milicom)	ONE TV + 75 MEGAS	₡51 900	Fixed Internet + Television	200	Cable + Fiber	222	N/A	N/A	N/A	N/A
TIGO (Milicom)	ONE TV + 350 Mbps	₡80 600	Fixed Internet + Television	350	Cable + Fiber	246	N/A	N/A	N/A	N/A
TIGO (Milicom)	ONE TV + 200 MEGAS	₡38 900	Fixed Internet + Television	200	Cable + Fiber	246	N/A	N/A	N/A	N/A

Source: SUTEL, General Directorate of Markets. Costa Rica, 2023.

Tabla n.° 65. Costa Rica: Características de los paquetes de telecomunicaciones fijas ofertados en diciembre 2023

Operador	Nombre del paquete	Costo	Servicios	Velocidad de Descarga (Mbps)	Tipo de conexión a Internet	Cantidad de canales	Minutos nacionales fijos mismo operador	Minutos nacionales a móviles	Minutos a todos los operadores	Minutos nacionales otro operador
Liberty	DOBLEPLAY MEGA 50	₡34 000	Fixed Internet + Television	50	Cable + Fiber	242	N/A	N/A	N/A	N/A
Liberty	DOBLEPLAY MEGA 30	₡32 000	Fixed Internet + Television	30	Cable + Fiber	242	N/A	N/A	N/A	N/A
Liberty	DOBLEPLAY MEGA 100	₡37 000	Fixed Internet + Television	100	Cable + Fiber	242	N/A	N/A	N/A	N/A
Liberty	DOBLEPLAY MEGA 200	₡52 000	Fixed Internet + Television	200	Cable + Fiber	242	N/A	N/A	N/A	N/A
Liberty	DOBLEPLAY MEGA 325	₡75 000	Fixed Internet + Television	325	Cable + Fiber	242	N/A	N/A	N/A	N/A
Liberty	TRIPLEPLAY MEGA 50	₡35 500	Fixed telephony + Fixed Internet + Television	50	Cable + Fiber	242	500	N/A	N/A	200
Liberty	TRIPLEPLAY MEGA 30	₡33 500	Fixed telephony + Fixed Internet + Television	30	Cable + Fiber	242	500	N/A	N/A	200
Liberty	TRIPLEPLAY MEGA 100	₡38 500	Fixed telephony + Fixed Internet + Television	100	Cable + Fiber	242	500	N/A	N/A	200
Liberty	TRIPLEPLAY MEGA 200	₡53 500	Fixed telephony + Fixed Internet + Television	200	Cable + Fiber	242	500	N/A	N/A	200
Liberty	TRIPLEPLAY MEGA 325	₡76 500	Fixed telephony + Fixed Internet + Television	325	Cable + Fiber	242	500	N/A	N/A	200
Liberty	Promoción Juntos Mucho Mejor	₡76 500	Fixed Internet	N/A	Cable + Fiber	N/A	N/A	N/A	N/A	N/A
Millicom cable costa rica sa	TV Digital HD + 100 Mbps	₡32 900	Fixed Internet + Television	100	Cable + Fiber	209	N/A	N/A	N/A	N/A
Millicom cable costa rica sa	TV Digital HD + 30 Megas	₡25 900	Fixed Internet + Television	30	Cable + Fiber	209	N/A	N/A	N/A	N/A
Millicom cable costa rica sa	TV Digital HD + 50 Mbps	₡28 900	Fixed Internet + Television	50	Cable + Fiber	209	N/A	N/A	N/A	N/A
Millicom cable costa rica sa	TV Digital HD + 75 Mbps	₡29 900	Fixed Internet + Television	75	Cable + Fiber	209	N/A	N/A	N/A	N/A
Millicom cable costa rica sa	ONEtv HD + 100 Mbps	₡33 900	Fixed Internet + Television	100	Cable + Fiber	209	N/A	N/A	N/A	N/A
Millicom cable costa rica sa	ONE TV + 200 MEGAS	₡36 500	Fixed Internet + Television	200	Cable + Fiber	209	N/A	N/A	N/A	N/A

Operador	Nombre del paquete	Costo	Servicios	Velocidad de Descarga (Mbps)	Tipo de conexión a Internet	Cantidad de canales	Minutos nacionales fijos mismo operador	Minutos nacionales a móviles	Minutos a todos los operadores	Minutos nacionales otro operador
Telecable	TV+ 45Mbps	₡31 500	Fixed Internet + Television	45	Fiber	211	N/A	N/A	N/A	N/A
Telecable	TV+ 75Mbps	₡33 900	Fixed Internet + Television	75	Fiber	211	N/A	N/A	N/A	N/A
Telecable	TV+ 150Mbps	₡38 000	Fixed Internet + Television	150	Fiber	211	N/A	N/A	N/A	N/A
Telecable	TV+ 500Mbps	₡74 900	Fixed Internet + Television	500	Fiber	211	N/A	N/A	N/A	N/A
Telecable	TV+ 45Mbps+Telf	₡33 000	Fixed telephony + Fixed Internet + Television	45	Fiber	211	Unlimited	N/A	60	N/A
Telecable	TV+ 75Mbps+Telf	₡35 500	Fixed telephony + Fixed Internet + Television	75	Fiber	211	Unlimited	N/A	60	N/A
Telecable	TV+ 150Mbps+Telf	₡39 900	Fixed telephony + Fixed Internet + Television	150	Fiber	211	Unlimited	N/A	60	N/A
Telecable	TV+ 300Mbps+Telf	₡42 500	Fixed telephony + Fixed Internet + Television	300	Fiber	211	Unlimited	N/A	60	N/A
Telecable	TV+ 500Mbps+Telf	₡76 400	Fixed telephony + Fixed Internet + Television	500	Fiber	211	Unlimited	N/A	60	N/A
Telecable	TV+ 1000Mbps+Telf	₡101 400	Fixed telephony + Fixed Internet + Television	1000	Fiber	211	Unlimited	N/A	60	N/A
Telecable	+Tele 150Mbps	₡42 000	Fixed Internet + Television	150	Fiber	211	N/A	N/A	N/A	N/A
Telecable	+Tele 300 Mbps	₡45 000	Fixed Internet + Television	300	Fiber	211	N/A	N/A	N/A	N/A
Telecable	+Tele 500 Mbps	₡78 900	Fixed Internet + Television	500	Fiber	211	N/A	N/A	N/A	N/A
Telecable	+Tele 1000 Mbps	₡103 900	Fixed Internet + Television	1000	Fiber	211	N/A	N/A	N/A	N/A
Telecable	TV+ 300Mbps	₡41 000	Fixed Internet + Television	300	Fiber	211	N/A	N/A	N/A	N/A
Telecable	TV+ 1000Mbps	₡99 900	Fixed Internet + Television	1000	Fiber	211	N/A	N/A	N/A	N/A
Kölbi	Plan Triple TV + Telefonía + Internet 10 Mbps	₡32 115	Fixed telephony + Fixed Internet + Television	10	Copper + Fiber	119	60	N/A	N/A	N/A
Kölbi	Plan Triple TV + Telefonía + Internet simétrico 30 Mbps	₡38 208	Fixed telephony + Fixed Internet + Television	30	Fiber	119	60	N/A	N/A	N/A
Kölbi	Plan Triple TV + Telefonía + Internet simétrico 50 Mbps	₡40 239	Fixed telephony + Fixed Internet + Television	50	Fiber	119	60	N/A	N/A	N/A
Kölbi	Plan Triple TV + Telefonía + Internet simétrico 100 Mbps	₡47 348	Fixed telephony + Fixed Internet + Television	100	Fiber	119	60	N/A	N/A	N/A
Kölbi	Plan Triple TV + Telefonía + Internet simétrico 200 Mbps	₡52 425	Fixed telephony + Fixed Internet + Television	200	Fiber	119	60	N/A	N/A	N/A

Operador	Nombre del paquete	Costo	Servicios	Velocidad de Descarga (Mbps)	Tipo de conexión a Internet	Cantidad de canales	Minutos nacionales fijos mismo operador	Minutos nacionales a móviles	Minutos a todos los operadores	Minutos nacionales otro operador
Kölbi	Plan Triple TV + Telefonía + Internet simétrico 300 Mbps	₡87 967	Fixed telephony + Fixed Internet + Television	300	Fiber	119	60	N/A	N/A	N/A
Kölbi	Plan Triple TV + Telefonía + Internet simétrico 500 Mbps	₡123 509	Fixed telephony + Fixed Internet + Television	500	Fiber	119	60	N/A	N/A	N/A
Kölbi	Plan Dúo Internet + Telefonía 10 Mbps	₡20 208	Fixed telephony + Fixed Internet	10	Copper + Fiber	N/A	60	N/A	N/A	N/A
Kölbi	Plan Dúo Telefonía + Internet simétrico 30Mbps	₡25 286	Fixed telephony + Fixed Internet	30	Fiber	N/A	60	N/A	N/A	N/A
Kölbi	Plan Dúo Telefonía + Internet simétrico 50Mbps	₡27 317	Fixed telephony + Fixed Internet	50	Fiber	N/A	60	N/A	N/A	N/A
Kölbi	Plan Dúo Telefonía + Internet simétrico 100Mbps	₡29 348	Fixed telephony + Fixed Internet	100	Fiber	N/A	60	N/A	N/A	N/A
Kölbi	Plan Dúo Telefonía + Internet simétrico 200Mbps	₡34 425	Fixed telephony + Fixed Internet	200	Fiber	N/A	60	N/A	N/A	N/A
Kölbi	Plan Dúo Telefonía + Internet simétrico 300Mbps	₡69 967	Fixed telephony + Fixed Internet	300	Fiber	N/A	60	N/A	N/A	N/A
Kölbi	Plan Dúo Telefonía + Internet simétrico 500Mbps	₡105 509	Fixed telephony + Fixed Internet	500	Fiber	N/A	60	N/A	N/A	N/A
Kölbi	Plan Dúo TV + Internet 10Mbps	₡29 069	Fixed Internet + Television	10	Copper + Fiber	119	N/A	N/A	N/A	N/A
Kölbi	Plan Dúo TV + Internet simétrico 30Mbps	₡35 162	Fixed Internet + Television	30	Fiber	119	N/A	N/A	N/A	N/A
Kölbi	Plan Dúo TV + Internet simétrico 50Mbps	₡37 193	Fixed Internet + Television	50	Fiber	119	N/A	N/A	N/A	N/A
Kölbi	Plan Dúo TV + Internet simétrico 100Mbps	₡44 301	Fixed Internet + Television	100	Fiber	119	N/A	N/A	N/A	N/A
Kölbi	Plan Dúo TV + Internet simétrico 200Mbps	₡49 379	Fixed Internet + Television	200	Fiber	119	N/A	N/A	N/A	N/A
Kölbi	Plan Dúo TV + Internet simétrico 300Mbps	₡84 921	Fixed Internet + Television	300	Fiber	119	N/A	N/A	N/A	N/A
Kölbi	Plan Dúo TV + Internet simétrico 500 Mbps	₡120 463	Fixed Internet + Television	500	Fiber	119	N/A	N/A	N/A	N/A
Kölbi	Plan Dúo Tv + Telefonía	₡26 304	Fixed Internet + Television	N/A	Copper + Fiber	119	60	N/A	N/A	N/A
Kölbi	Plan Dúo Telefonía + Internet 20Mbps	₡23 255	Fixed telephony + Fixed Internet	20	Copper + Fiber	N/A	60	N/A	N/A	N/A
Kölbi	Plan Dúo TV + Internet 20Mbps	₡31 100	Fixed Internet + Television	20	Copper + Fiber	119	N/A	N/A	N/A	N/A
Kölbi	Plan Triple TV + Telefonía + Internet 1Mbps	₡29 069	Fixed telephony + Fixed Internet + Television	1	Copper + Fiber	119	60	N/A	N/A	N/A
Kölbi	Plan Triple TV + Telefonía + Internet 2Mbps	₡30 084	Fixed telephony + Fixed Internet + Television	2	Copper + Fiber	119	60	N/A	N/A	N/A

Operador	Nombre del paquete	Costo	Servicios	Velocidad de Descarga (Mbps)	Tipo de conexión a Internet	Cantidad de canales	Minutos nacionales fijos mismo operador	Minutos nacionales a móviles	Minutos a todos los operadores	Minutos nacionales otro operador
Kölbi	Plan Triple TV + Telefonía + Internet 3Mbps	₡31 100	Fixed telephony + Fixed Internet + Television	3	Copper + Fiber	119	60	N/A	N/A	N/A
Kölbi	Plan Triple TV + Telefonía + Internet 4Mbps	₡32 115	Fixed telephony + Fixed Internet + Television	4	Copper + Fiber	119	60	N/A	N/A	N/A
Kölbi	Plan Triple TV + Telefonía + Internet 6Mbps	₡32 115	Fixed telephony + Fixed Internet + Television	6	Copper + Fiber	119	60	N/A	N/A	N/A
Kölbi	Plan Triple TV + Telefonía + Internet 20Mbps	₡34 146	Fixed telephony + Fixed Internet + Television	20	Copper + Fiber	119	60	N/A	N/A	N/A
Kölbi	Plan Dúo 6 Mbps + TV Digital	₡27 569	Fixed Internet + Television	6	Copper + Fiber	119	N/A	N/A	N/A	N/A
Kölbi	Plan Dúo 10 Mbps + TV Digital	₡27 569	Fixed Internet + Television	10	Copper + Fiber	119	N/A	N/A	N/A	N/A
Kölbi	Plan Dúo 20 Mbps + TV Digital	₡30 600	Fixed Internet + Television	20	Copper + Fiber	119	N/A	N/A	N/A	N/A
Kölbi	Plan Dúo 30 Mbps + TV Digital	₡35 693	Fixed Internet + Television	30	Copper + Fiber	119	N/A	N/A	N/A	N/A
Kölbi	Plan Dúo 50 Mbps + TV Digital	₡37 724	Fixed Internet + Television	50	Copper + Fiber	119	N/A	N/A	N/A	N/A
Kölbi	Plan Dúo 100 Mbps + TV Digital	₡39 247	Fixed Internet + Television	100	Copper + Fiber	119	N/A	N/A	N/A	N/A
Kölbi	Plan Dúo Telefonía + Internet 1Mbps	₡12 084	Fixed telephony + Fixed Internet	1	Copper + Fiber	N/A	60	N/A	N/A	N/A
Kölbi	Plan Dúo Telefonía + Internet 2Mbps	₡15 131	Fixed telephony + Fixed Internet	2	Copper + Fiber	N/A	60	N/A	N/A	N/A
Kölbi	Plan Dúo Telefonía + Internet 3Mbps	₡17 162	Fixed telephony + Fixed Internet	3	Copper + Fiber	N/A	60	N/A	N/A	N/A
Kölbi	Plan Dúo Telefonía + Internet 4Mbps	₡18 177	Fixed telephony + Fixed Internet	4	Copper + Fiber	N/A	60	N/A	N/A	N/A
Kölbi	Plan Dúo TV Avanzada + Internet 1Mbps	₡26 022	Fixed Internet + Television	1	Copper + Fiber	119	N/A	N/A	N/A	N/A
Kölbi	Plan Dúo TV Avanzada + Internet 2Mbps	₡27 038	Fixed Internet + Television	2	Copper + Fiber	119	N/A	N/A	N/A	N/A
Kölbi	Plan Dúo TV Avanzada + Internet 3Mbps	₡28 053	Fixed Internet + Television	3	Copper + Fiber	119	N/A	N/A	N/A	N/A
Kölbi	Plan Dúo TV Avanzada + Internet 4Mbps	₡29 069	Fixed Internet + Television	4	Copper + Fiber	119	N/A	N/A	N/A	N/A
Kölbi	Plan Dúo Telefonía + Internet 6Mbps	₡20 208	Fixed telephony + Fixed Internet	6	Copper + Fiber	N/A	60	N/A	N/A	N/A
Kölbi	Plan Dúo Tv Avanzada + Internet 6Mbps	₡29 069	Fixed Internet + Television	6	Copper + Fiber	119	N/A	N/A	N/A	N/A
Telecable	FTTH 45 + Telf Telecable	₡26 000	Fixed telephony + Fixed Internet	45	Cable + Fiber	N/A	Unlimited	N/A	60	0
Telecable	FTTH 75 + Telf Telecable	₡27 000	Fixed telephony + Fixed Internet	75	Fiber	N/A	N/A	N/A	60	N/A
Telecable	FTTH 150 + Telf Telecable	₡28 500	Fixed telephony + Fixed Internet	150	Fiber	N/A	Unlimited	N/A	60	N/A

Operador	Nombre del paquete	Costo	Servicios	Velocidad de Descarga (Mbps)	Tipo de conexión a Internet	Cantidad de canales	Minutos nacionales fijos mismo operador	Minutos nacionales a móviles	Minutos a todos los operadores	Minutos nacionales otro operador
Telecable	FTTH 300 + Telf Telecable	₡31 500	Fixed telephony + Fixed Internet	300	Fiber	N/A	Unlimited	N/A	60	N/A
Telecable	FTTH 500 + Telf Telecable	₡58 500	Fixed telephony + Fixed Internet	500	Fiber	N/A	Unlimited	N/A	60	N/A
Telecable	FTTH 1000 + Telf Telecable	₡84 500	Fixed telephony + Fixed Internet	1000	Fiber	N/A	Unlimited	N/A	60	N/A
Telecable	.+Negocios @75 Mbps +Telf+TV Telecable	₡38 000	Telefonía fija+ Internet fijo+ Televisión	75	Fiber	240	Unlimited	N/A	60	N/A
Telecable	+Negocios @150 Mbps +Telf+TV Telecable	₡42 000	Telefonía fija+ Internet fijo+ Televisión	150	Fiber	240	Unlimited	N/A	60	N/A
Telecable	+Negocios @300Mbps +Telf+TV Telecable	₡48 500	Telefonía fija+ Internet fijo+ Televisión	300	Fiber	240	Unlimited	N/A	60	N/A
Telecable	+Negocios @75 Mbps+Telf Telecable	₡29 230	Fixed telephony + Fixed Internet	75	Fiber	N/A	Unlimited	N/A	60	N/A
Telecable	+Negocios @150 Mbps+Telf Telecable	₡30 730	Fixed telephony + Fixed Internet	150	Fiber	N/A	Unlimited	N/A	60	N/A
Telecable	+Negocios @300 Mbps+Telf Telecable	₡34 000	Fixed telephony + Fixed Internet	300	Fiber	N/A	Unlimited	N/A	60	N/A

Source: SUTEL, General Directorate of Markets. Costa Rica, 2023.

Table 66. Costa Rica: Total number of projects developed in a year by FONATEL per project life cycle phase in 2015-2023

Status	2015	2016	2017	2018	2019	2020	2021	2022	2023
In-initiation	0	0	0	0	0	0	0	0	0
In-planning	14	18	14	8	7	5	5	5	1
In-progress	13	14	21	28	27	28	31	31	30
Completed	0	0	0	0	2	4	2	2	3
Total	**27**	**32**	**35**	**36**	**36**	**37**	**38**	**38**	**34**

Source: SUTEL, General Directorate of FONATEL. Costa Rica, 2023.

Table 67. Costa Rica: Number of districts with at least one program in development with FONATEL resources, per program, in 2015-2023

Program	2015	2016	2017	2018	2019	2020	2021	2022	2023
Connected Communities	11	32	72	72	103	127	128	128	128
Connected Households	0	216	381	434	471	475	483	484	487
Provisioned Public Centers	0	0	172	263	263	263	263	456	468
Connected Public Spaces	0	0	0	0	178	313	315	315	315
Bicentennial Education Network	0	0	0	0	0	0	57	162	176
Total	**11**	**231**	**391**	**460**	**478**	**481**	**484**	**484**	**491**
Country coverage	2 %	48 %	81 %	94 %	98 %	99 %	99 %	99 %	100 %

Source: SUTEL, General Directorate of FONATEL. Costa Rica, 2023.

Table 68. Costa Rica: Number of devices granted through programs developed with FONATEL resources to provide access to ICTs, per program, in 2016-2023
(yearly aggregate figures)

Status	2016	2017	2018	2019	2020	2021	2022	2023
Connected Households	10 089	30 418	84 268	130 579	148 426	181 644	186 402	186 558
Provisioned Public Centers	0	6407	36 004	36 831	36 831	36 831	115 317	123 643
Total	**10 089**	**36 825**	**120 272**	**167 410**	**185 257**	**218 475**	**301 201**	**310 201**

Source: SUTEL, General Directorate of FONATEL. Costa Rica, 2023.

Table 69. Costa Rica: Number of Centers for the Provision of Public Services that have received benefits through FONATEL programs, per program, in 2015-2023
(yearly aggregate figures)

Program	2015	2016	2017	2018	2019	2020	2021	2022	2023
Connected Communities	15	94	234	600	996	1446	1777	1828	1916
Provisioned Public Centers	0	0	0	3787	3809	3809	3809	6102	6332
Bicentennial Education Network	0	0	0	0	0	0	133	600	682
Total	**15**	**94**	**234**	**4387**	**4805**	**5255**	**5719**	**8530**	**8930**

Source: SUTEL, General Directorate of FONATEL. Costa Rica, 2023.

Table 70. Costa Rica: Number of inhabitants, dwellings, and households with access to voice and data services in districts in which programs are in development with FONATEL resources in 2015-2023
(figures in thousands)

Indicator	2015	2016	2017	2018	2019	2020	2021	2022	2023
Inhabitants	76 739	269 740	393 088	905 496	1 171 572	1 368 676	1 695 417	1 782 051	1 758 452
Households	23 212	82 421	121 028	285 284	370 662	419 584	468 419	507 665	515 835
Dwellings	22 799	80 830	118 606	278 616	365 421	413 543	463 947	504 319	512 442

Source: SUTEL, General Directorate of FONATEL. Costa Rica, 2023.

Table 71. Costa Rica: Number of fixed telephony and fixed Internet subscriptions provided through programs in development with FONATEL resources in 2015-2023
(yearly aggregate figures)

Service	2015	2016	2017	2018	2019	2020	2021	2022	2023
Fixed Telephony	10	112	387	1131	3409	3351	5000	5102	5679
Fixed Internet	19	10 575	31 532	86 038	141 065	175 402	226 867	249 899	269 417
Mobile telephony	12 334	27 871	38 603	36 683	40 429	31 234	32 925	99 398	97 519

Source: SUTEL, General Directorate of FONATEL. Costa Rica, 2023.

Table 72. Costa Rica: Amount of the population that has benefited from FONATEL programs in 2015-2023

Indicator	2015	2016	2017	2018	2019	2020	2021	2022	2023
Population	12 428	62 821	142 253	317 640	502 791	628 571	977 165	1 238 739	1 304 195

Source: SUTEL, General Directorate of FONATEL. Costa Rica, 2023.

Table 73. Costa Rica: Equity and year-over-year variation rate of FONATEL in 2015-2023
(yearly figures in millions of colones)

	2015	2016	2017	2018	2019	2020	2021	2022	2023
Equity	143 265	161 306	171 551	200 979	200 847	211 188	204 683	157 171	104 921
Variation rate	9 %	13%	6 %	17 %	0 %	5 %	-3 %	-23 %	-33 %

Source: SUTEL, General Directorate of FONATEL. Costa Rica, 2023.

Table 74. Costa Rica: Special parafiscal contributions [CEPF as per its acronym in Spanish] and year-over-year variation rate in 2015-2023
(yearly figures in millions of colones)

	2015	2016	2017	2018	2019	2020	2021	2022	2023
CEPF	11 674	12 434	12 936	13 453	14 079	14 297	13 890	10 399	14 285
Variation rate	17 %	7 %	4 %	4 %	5 %	2 %	-3 %	-25 %	37 %

Source: SUTEL, General Directorate of FONATEL. Costa Rica, 2023.

Table 75. Costa Rica: Investment by FONATEL per program in 2013-2023
(yearly figures in millions of colones)

Program	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023	Total
Connected Communities	49	3077	2821	454	1971	4754	1937	10 855	4610	7243	2904	40 674
Connected Households	0	0	0	734	6060	17 298	21 205	17 366	21 006	12 697	18 919	115 285
Provisioned Public Centers	0	0	0	0	4752	3357	1464	0	0	23 467	13 857	46 897
Connected Public Spaces	0	0	0	0	0	0	981	3740	6550	7708	5957	24 936
Bicentennial Education Network	0	0	0	0	0	0	0	0	1013	4659	7417	13 089
Total	**49**	**3077**	**2821**	**1188**	**12 783**	**25 409**	**25 587**	**31 960**	**33 179**	**55 774**	**49 054**	**240 881**

Source: SUTEL, General Directorate of FONATEL. Costa Rica, 2023.

Table 76. Investment by FONATEL per operator in 2015-2023
(yearly figures in millions of colones)

Operator	2015	2016	2017	2018	2019	2020	2021	2022	2023	Total
RACSA	0	0	4752	3357	1741	1322	2561	27 005	18 684	59 423
Telecable	0	103	1372	4416	7072	5919	9418	7706	9389	45 394
Coopeguanacaste	0	0	6	96	303	1 310	2352	4762	5189	14 018
ICE	2061	141	2263	5791	4056	12309	4977	7714	4848	44 194
Liberty	760	438	3011	6009	6196	4120	6647	3944	3545	35 245
Tigo	0	0	188	3143	3649	3209	3680	1495	3468	18 833
Claro	0	431	724	1419	1453	2591	1919	1961	1728	14 740
Coopelesca	0	37	194	601	463	706	654	501	1479	4635
Coopesantos	0	38	272	577	648	416	811	573	564	3899
Cable Pacayas	0	0	0	0	0	58	125	70	114	367
Coopealfaro	0	0	0	0	0	0	36	44	42	122
Cable Caribe	0	0	0	0	0	0	0	0	4	4
Cable Visión	0	0	0	0	6	0	0	0	0	6
Total	**2821**	**1188**	**12 783**	**25 409**	**25 587**	**31 960**	**33 179**	**55 774**	**49 054**	**240 881**

Note: The data from this service provider includes the data reported by "Liberty Telecomunicaciones (Telefónica)" and "Liberty Servicios Fijos (Cabletica)". These used to be reported separately in previous reports. The data is now aggregated due to the merger of "Telefónica" and "Cabletica" under the "Liberty" brand in 2022. The data collected from FONATEL programs and projects is not broken down by company name or license, but rather by network operator and/or service provider.
Source: SUTEL, General Directorate of FONATEL. Costa Rica, 2023.

Table 77. Costa Rica: Achievement of the 2015-2021 PNDT's Goal #2 and the 2022-2027 PNDT's Goal #3: to provide indigenous territories with access to voice and data services through the Connected Communities Program in 2019-2023

Indicator	2019	2020	2021	2022	2023
Territories	1	3	6	9	14
Annual goal[1]	4	4	20	9	15
Achievement % of annual goal	25 %	75 %	30 %	100 %	93 %
Goal total[1]	20	20	20	24	24
Achievement % of goal total	5 %	15 %	30 %	38 %	58 %
Territory coverage	4 %	13 %	25 %	38 %	58 %

Note:1 The goals set in the 2015-2021 PNDT were last updated in February 2021, while the goals in the 2022-2027 PNDT were last updated in December 2022.
2MSP: This goal does not have a planned timetable or target. No target or objective has been set for this goal in the year of reference.
Source: SUTEL, General Directorate of FONATEL. Costa Rica, 2023.

Table 78. Costa Rica. Achievement of the 2015-2021 PNDT's Goal #1 and the 2022-2027 PNDT's Goal #4: to provide districts with access to voice and data services through the Connected Communities Program in 2015-2023

Indicator	2015	2016	2017	2018	2019	2020	2021	2022	2023
Districts	11	32	72	72	103	127	128	128	128
Annual goal[1]	12	32	72	72	125	125	183	MSP[2]	MSP[2]
Achievement % of annual goal	92 %	100 %	100 %	100 %	82 %	102 %	70 %	NA	NA
Goal total[1]	183	183	183	183	183	183	183	262	262
Achievement % of goal total	6 %	17 %	39 %	39 %	56 %	69 %	70 %	49 %	49 %
Country coverage	2 %	7 %	15 %	15 %	21 %	26 %	26 %	26 %	26 %

Note:[1] The goals set in the 2015-2021 PNDT were last updated in February 2021, while the goals in the 2022-2027 PNDT were last updated in December 2022.
[2]MSP: This goal does not have a planned timetable or target. No target or objective has been set for this goal in the year of reference.
Source: SUTEL, General Directorate of FONATEL. Costa Rica, 2023.

Table 79. Costa Rica: Distribution of districts with (total or partial) connectivity to voice and data services, per region, as a result of the Connected Communities Program in 2015-2023
(yearly aggregate figures)

Region	2015	2016	2017	2018	2019	2020	2021	2022	2023
Huetar Caribe	3	3	17	17	19	19	19	19	19
Huetar Norte	8	25	25	25	25	25	25	25	25
Brunca	0	4	30	30	30	30	30	30	30
Chorotega	0	0	0	0	29	39	40	40	40
Pacífico Central	0	0	0	0	0	14	14	14	14
Total	**11**	**32**	**72**	**72**	**103**	**127**	**128**	**128**	**128**

Source: SUTEL, General Directorate of FONATEL. Costa Rica, 2023.

Table 80. Costa Rica: Projects developed under the Connected Communities Program, per project life cycle phase, in 2015-2023
(yearly aggregate figures)

Program	2015	2016	2017	2018	2019	2020	2021	2022	2023
In-initiation	0	0	0	0	0	0	0	0	0
In-planning	13	17	13	6	6	4	4	4	0
In-progress	13	13	19	26	25	24	26	26	26
Completed	0	0	0	0	1	4	2	2	2
Total	**26**	**30**	**32**	**32**	**32**	**32**	**32**	**32**	**28**

Note: Two projects completed in 2020 were expanded in 2021 (Guatuso and Los Chiles).

4 projects exhibited a downward trend, in relation to 2022, as the assignment of the 5G spectrum that is required to provide the districts with connectivity was carried out via a bidding process.

Source: SUTEL, General Directorate of FONATEL. Costa Rica, 2023.

Table 81. Costa Rica: Number of towers equipped with telecommunications infrastructure through the Connected Communities Program, per region, in 2015-2023
(yearly aggregate figures)

Region	2015	2016	2017	2018	2019	2020	2021	2022	2023
Huetar Caribe	7	7	7	62	111	116	129	136	145
Huetar Norte	24	143	143	147	148	173	175	175	175
Brunca	0	0	50	115	115	116	118	128	142
Chorotega	0	0	0	0	57	114	129	131	137
Pacífico Central	0	0	0	0	0	68	77	81	82
Total	**31**	**150**	**200**	**324**	**431**	**587**	**628**	**651**	**681**

Source: SUTEL, General Directorate of FONATEL. Costa Rica, 2023.

Table 82. Costa Rica: Number of towers equipped with telecommunications infrastructure through the Connected Communities Program, per indigenous territory, in 2019-2023
(yearly aggregate figures)

Territories	2019	2020	2021	2022	2023
Maleku de Guatuso	2	2	2	2	2
Chorotega de Matambú	4	4	4	4	4
Bribrí de Keköldi (Cocles)	0	0	5	5	5
Bribrí de Talamanca	0	0	4	4	5
Brunka de Curré (Rey Curré)	0	0	2	4	4
Cabécar de Chirripó (Duchii)	0	0	1	1	8
Cabécar de Talamanca	0	0	1	3	4
Bribrí de Salitre	0	0	0	3	4
Cabécar de Tayní	0	0	0	3	3
Cabécar de Ujarrás	0	0	0	1	2
Bribrí de Cabagra	0	0	0	0	5
Guaymí de Conteburica	0	0	0	0	4
Guaymí de Altos de San Antonio	0	0	0	0	1
Total	**6**	**6**	**19**	**30**	**51**

Source: SUTEL, General Directorate of FONATEL. Costa Rica, 2023.

Table 83. Costa Rica: Number of Centers for the Provision of Public Services that were provided Internet access through the Connected Communities Program, per institution, in 2015-2023
(yearly aggregate figures)

Institution	2015	2016	2017	2018	2019	2020	2021	2022	2023
MEP	15	94	234	573	923	1352	1640	1683	1744
MICITT	0	0	0	5	11	15	23	26	30
CEN-CINAI	0	0	0	23	63	66	97	98	103
CCSS	0	0	0	0	0	14	17	21	39
Total	**15**	**94**	**234**	**601**	**997**	**1447**	**1777**	**1828**	**1916**

Source: SUTEL, General Directorate of FONATEL. Costa Rica, 2023.

Table 84. Costa Rica: Number of Centers for the Provision of Public Services that were provided Internet access through the Connected Communities Program, per indigenous territory, in 2018-2023
(yearly aggregate figures)

Territories	2018	2019	2020	2021	2022	2023
Maleku de Guatuso	8	9	9	9	9	9
Brunca de Curré (Rey Curré)	0	1	1	2	7	7
Teribe de Térraba	0	1	1	1	1	1
Chorotega de Matambú	0	0	3	4	4	4
Bribrí de Keköldi (Cocles)	0	0	1	1	3	3
Bribrí de Talamanca	0	0	0	4	7	9
Cabécar de Ujarrás	0	0	0	0	5	5
Bribrí de Salitre	0	0	0	0	5	8
Cabécar de Talamanca	0	0	0	0	4	4
Cabécar de Tayní	0	0	0	0	3	3
Bribrí de Cabagra	0	0	0	0	0	11
Guaymí de Conteburica	0	0	0	0	0	4
Guaymí de Altos De San Antonio	0	0	0	0	0	1
Total	**8**	**11**	**15**	**21**	**48**	**69**

Source: SUTEL, General Directorate of FONATEL. Costa Rica, 2023.

Table 85. Costa Rica: Number of inhabitants, households and dwellings in districts with (total or partial) connectivity that were provided potential access to voice and data services through the Connected Communities Program in 2015-2023
(yearly aggregate figures)

Institution	2015	2016	2017	2018	2019	2020	2021	2022	2023
Inhabitants	76 739	237 639	294 488	631 625	803 267	932 564	943 986	955 260	966 467
Dwellings	22 799	71 208	89 099	194 405	250 543	288 555	301 721	315 630	326 621
Households	23 212	72 745	90 765	197 129	254 138	292 773	304 630	317 723	328 783

Source: SUTEL, General Directorate of FONATEL. Costa Rica, 2023.

Table 86. Costa Rica: Number of fixed telephony, fixed Internet, and mobile telephony subscriptions provided through the Connected Communities Program in 2015-2023

Service	2015	2016	2017	2018	2019	2020	2021	2022	2023
Fixed Telephony	10	112	387	1131	3409	3351	5000	5102	5679
Fixed Internet	19	486	1114	1770	10 486	26 976	33 078	35 178	37 330
Mobile telephony	12 334	27 871	38 603	36 683	40 429	31 234	32 925	99 398	97 519

Source: SUTEL, General Directorate of FONATEL. Costa Rica, 2023.

Table 87. Costa Rica: Penetration of fixed telephony, fixed Internet, and mobile telephony subscriptions provided through the Connected Communities Program in 2015-2023

Service	2015	2016	2017	2018	2019	2020	2021	2022	2023
Fixed Telephony	0.0 %	0.0 %	0.0 %	0.1 %	0.5 %	0.6 %	1.0 %	1.0 %	0.9 %
Fixed Internet	0.0 %	0.1 %	0.1 %	0.2 %	1.2 %	2.7 %	3.1 %	3.2 %	3.2 %
Mobile Telephony	0.2 %	0.3 %	0.5 %	0.5 %	0.6 %	0.4 %	0.4 %	1.3 %	1.3 %

Source: SUTEL, General Directorate of FONATEL. Costa Rica, 2023.

Table 88. Costa Rica: Amount of the population that has benefited from the Connected Communities Program in 2015-2023

Year	2015	2016	2017	2018	2019	2020	2021	2022	2023
Beneficiaries	12 428	29 863	43 561	46 011	82 195	120 196	136 934	189 031	210 738

Source: SUTEL, General Directorate of FONATEL. Costa Rica, 2023.

Table 89. Costa Rica: Number of fixed Internet subscriptions provided through the Connected Communities Program, per region, in 2015-2023

Region	2015	2016	2017	2018	2019	2020	2021	2022	2023
Huetar Caribe	19	13	13	14	2171	6657	7992	8671	10256
Huetar Norte	0	473	894	1378	5720	13 515	15 865	16 869	16 647
Brunca	0	0	207	378	2595	6253	7514	6935	7193
Pacífico	0	0	0	0	0	314	664	1090	1253
Chorotega	0	0	0	0	0	237	1043	1613	1981
Total	**19**	**486**	**1114**	**1770**	**10 486**	**26 976**	**33 078**	**35 178**	**37 330**

Source: SUTEL, General Directorate of FONATEL. Costa Rica, 2023.

Table 90. Costa Rica: Number of fixed telephony subscriptions provided through the Connected Communities Program, per region, in 2015-2023

Región	2015	2016	2017	2018	2019	2020	2021	2022	2023
Huetar Caribe	10	3	2	5	873	1064	1462	1263	1467
Huetar Norte	0	109	278	873	1543	332	79	49	38
Brunca	0	0	107	253	993	1404	1752	997	940
Pacífico Central	0	0	0	0	0	314	664	1090	1253
Chorotega	0	0	0	0	0	237	1043	1613	1981
Total	**10**	**112**	**387**	**1131**	**3409**	**3351**	**5000**	**5012**	**5679**

Source: SUTEL, General Directorate of FONATEL. Costa Rica, 2023.

Table 91. Costa Rica: Number of mobile telephony subscriptions provided through the infrastructure made available by the Connected Communities Program, per region, in 2015-2023

Region	2015	2016	2017	2018	2019	2020	2021	2022	2023
Huetar Caribe	792	1565	2290	1865	6230	8682	9067	52 953	47 302
Huetar Norte	11 542	26 306	33 491	32 273	29 861	17 349	18 423	19 276	20 566
Brunca	0	0	2822	2545	4338	5203	5435	27 169	29 651
Total	**12 334**	**27 871**	**38 603**	**36 683**	**40 429**	**31 234**	**32 925**	**99 398**	**97 519**

Source: SUTEL, General Directorate of FONATEL. Costa Rica, 2023.

Table 92. Costa Rica: Distribution of investment made through the Connected Communities Program, per operator, in 2015-2023
(yearly aggregate figures)

Operator	2015	2016	2017	2018	2019	2020	2021	2022	2023	Total
ICE	2061	5	1213	3267	434	8179	2674	5279	1129	24 276
Claro	0	431	724	1419	1453	2591	1918	1938	1683	14 672
Liberty	760	18	33	68	49	85	18	25	65	1 699
Telecable	0	0	0	0	0	0	0	0	27	27
Total	**2821**	**454**	**1971**	**4754**	**1937**	**10 855**	**4610**	**7243**	**2904**	**40 674**

Note: The sum total includes amounts executed from 2013-2023.
Source: SUTEL, General Directorate of FONATEL. Costa Rica, 2023.

Table 93. Costa Rica: Subsidies granted through the Connected Households Program, per project, in 2016-2023
(yearly aggregate figures)

Status	2016	2017	2018	2019	2020	2021[1]	2022	2023
Total of subsidies	10 089	30 418	84 268	130 579	148 426	193 789	226 552	270 875
Project #1	10 089	30 418	84 268	130 579	148 426	181 644	186 402	186 558
Project #2	0	0	0	0	0	12145	40150	84317

Note: [1]The number of beneficiaries in 2022 was adjusted following an exhaustive analysis of the data collected from Project #1. During said audit, it was determined that a number of households under the "assigned" status, that were waiting for assistance due to some restriction, were incorrectly counted towards the total. In light of the above, the entire data set reported in association to this program was adjusted for 2022.
Source: SUTEL, General Directorate of FONATEL. Costa Rica, 2023.

Table 94. Costa Rica: Number of households that have benefited from the Connected Households Program, per status, in 2016-2023
(yearly aggregate figures)

Status	2016	2017	2018	2019	2020	2021	2022	2023
Beneficiaries	10 089	30 418	84 268	130 579	148 426	193 789	211 721	232 087
Active status[1]	9947	28 806	78 815	117 719	126 095	166 512	170 410	189 518
Inactive status	142	1612	5453	12860	22331	27277	41 311	42 569

[1]The data reported in 2022 was adjusted as FONATEL determined that a number of households were incorrectly counted towards the total beneficiaries under Project #1.
Source: SUTEL, General Directorate of FONATEL. Costa Rica, 2023.

Table 95. Costa Rica: Achievement of the 2015-2021 PNDT's Goal #43 and the 2022-2027 PNDT's Goal #7: to subsidize the Internet service of households with students through the Connected Households Program in 2020-2023
(yearly aggregate figures)

Indicator	2020	2021	2022	2023
Beneficiaries	0	12 145	40 150	84 317
Annual goal[1]	10 684	100 684	40 684	100 684
Achievement % of annual goal	0 %	12 %	99 %	84%
Goal total[1]	100 684	100 684	100 685	100 684
Achievement % of goal total	**0 %**	**12 %**	**40 %**	**84%**

Note:[1] The goals set in the 2015-2021 PNDT were last updated in February 2021, while the goals in the 2022-2027 PNDT were last updated in December 2022.
Source: SUTEL, General Directorate of FONATEL. Costa Rica, 2023.

Table 96. Costa Rica: Number of households that have benefited from the Connected Households Program, per quintile of income, in 2016-2023
(yearly aggregate figures)

Quintile of income	2016	2017	2018	2019	2020	2021	2022	2023
Quintile #1	9832	24 981	71 431	109 432	124 393	156 895	168 844	180 713
Quintile #2	256	4283	10536	17402	19 885	30 126	34 368	40 795
Quintile #3	1	1154	2301	3745	4148	6768	8509	10579
Total	**10 089**	**30 418**	**84 268**	**130 579**	**148 426**	**193 789**	**211 721**	**232 087**

Source: SUTEL, General Directorate of FONATEL. Costa Rica, 2023.

Table 97. Costa Rica: Number of households that have benefited from the Connected Households Program, per operator, in 2016-2023
(yearly aggregate figures)

Operator	2016	2017	2018	2019	2020	2021	2022	2023
Telecable	2124	6059	22 915	37 361	43 966	62 215	67 608	72 645
Liberty	5018	13 608	30 590	40 033	43 853	53 729	57 154	58 950
Tigo	488	3242	13 646	21 613	24 313	32 081	33 491	43 650
ICE	1237	4694	10 726	23 279	26 867	30 119	35 037	35 722
Coopelesca	658	1684	3060	3940	4546	7472	9056	9723
Coopesantos	458	947	2982	3921	4274	6174	6742	7046
Coopeguanacaste	106	184	324	402	426	863	982	2039
Cable Pacayas (Teki)	0	0	0	8	181	696	957	1267
Coopealfaroruiz	0	0	0	0	0	300	301	710
Claro	0	0	0	0	0	140	353	163
Cable Caribe	0	0	0	0	0	0	40	161
Cable Visión	0	0	25	22	0	0	0	0
In the process of switching to another operator	0	0	0	0	0	0	0	11
Total	**10 089**	**30 418**	**84 268**	**130 579**	**148 426**	**193 789**	**211 721**	**232 087**

Note: "Cable Visión" was acquired by ICE in 2020 and, therefore, does not report separately as of said date.
Source: SUTEL, General Directorate of FONATEL. Costa Rica, 2023.

Table 98. Costa Rica: Penetration of total households that have benefited from the Connected Households Program, per province, in 2016-2023

(yearly figures in percentage terms)

Province	2016	2017	2018	2019	2020	2021	2022	2023
San Jose	1 %	2 %	6 %	8 %	9 %	11 %	11 %	12 %
Alajuela	1 %	2 %	4 %	7 %	8 %	11 %	11 %	12 %
Cartago	0 %	1 %	5 %	8 %	10 %	13 %	13 %	13 %
Heredia	0 %	2 %	4 %	6 %	7 %	9 %	9 %	9 %
Guanacaste	1 %	4 %	9 %	12 %	14 %	18 %	18 %	18 %
Puntarenas	1 %	3 %	8 %	12 %	13 %	17 %	18 %	20 %
Limon	1 %	3 %	4 %	6 %	7 %	10 %	11 %	11 %
Total	**1 %**	**2 %**	**5 %**	**8 %**	**9 %**	**12 %**	**12 %**	**13 %**

Note: Market penetration is calculated by dividing the total number of beneficiary households by the total number of households in each province.

Source: SUTEL, General Directorate of FONATEL. Costa Rica, 2023.

Table 99. Costa Rica: Districts with coverage under the Connected Households Program in 2016-2023

(yearly aggregate figures)

	2016	2017	2018	2019	2020	2021	2022	2023
Districts	216	381	434	471	475	482	484	487
Country coverage	45 %	79 %	89 %	97 %	97 %	99 %	99 %	99 %

Source: SUTEL, General Directorate of FONATEL. Costa Rica, 2023.

Table 100. Costa Rica: Total net active Internet subscriptions that were subsidized through the Connected Households Program in 2016-2023

(yearly aggregate figures)

Indicator	2016	2017	2018	2019	2020	2021	2022	2023
Total subscriptions	9947	28 806	78 815	117 719	126 095	166 512	171 138	189 518
Net subscriptions	8097	23 448	64 155	67 335	72 126	114 893	118 085	130 767

Source: SUTEL, General Directorate of FONATEL. Costa Rica, 2023.

Table 101. Costa Rica: Penetration and contribution percentage of fixed Internet subscriptions provided under the Connected Households Program in 2016-2023

(yearly figures in percentage terms)

Indicator	2016	2017	2018	2019	2020	2021	2022	2023
Total penetration	0.7 %	1.9 %	5.1 %	7.5 %	8.0 %	10.1 %	9.9 %	10.7 %
Contribution percentage	1.6 %	3.9 %	9.4 %	13.0 %	12.7 %	15.7 %	15.4 %	16.5%

Source: SUTEL, General Directorate of FONATEL. Costa Rica, 2023.

TTable 102. Costa Rica: Amount of the population that has benefited from the Connected Households Program in 2021-2023
(yearly figures in percentage terms)

Status	2016	2017	2018	2019	2020	2021	2022	2023
Total beneficiaries[1]	34 666	104 518	289 549	449 394	510 449	660 796	725 898	800 635
Project #1 (Goal #5 of the 2015-2021 PNDT)	34 666	104 518	289 549	449 394	510 449	618 602	627 944	918 925
Project #2 (Goal #7 of the 2022-2027 PNDT)	0	0	0	0	0	42 194	147 916	310 393

Note: [1]Any person who was a beneficiary of more than one project was only counted once towards the total.
Source: SUTEL, General Directorate of FONATEL. Costa Rica, 2023.

Table 103. Costa Rica: Percentage of investment made through the Connected Households Program, per operator, in 2016-2023
(cifras anuales en millones de colones)

Operator	2016	2017	2018	2019	2020	2021	2022	2023	Total
Telecable	103	1372	4416	6622	4752	7612	3886	5925	34 689
Liberty	420	2978	5941	6146	4035	5696	3588	3434	32 237
Tigo	0	188	3143	3649	3209	3680	1495	3468	18 833
ICE	136	1050	2524	3621	4131	2303	2435	3718	19 918
Coopesantos	38	272	577	648	416	811	573	564	3899
Coopelesca	37	194	601	463	706	654	501	1479	4635
Coopeguanacaste	0	6	96	50	59	88	83	125	506
Cable Pacayas	0	0	0	0	58	125	70	114	367
Coopealfaroruiz	0	0	0	0	0	36	44	42	122
Claro	0	0	0	0	0	1	23	45	68
Cable Caribe	0	0	0	0	0	0	0	4	4
Cable Visión	0	0	0	6	0	0	0	0	6
Inversión Total	**734**	**6060**	**17 298**	**21 205**	**17 366**	**21 006**	**12 697**	**18 919**	**115 285**

Source: SUTEL, General Directorate of FONATEL. Costa Rica, 2023.

Table 104. Costa Rica: Number of devices delivered to CPSPs for accessing ICTs through the Provisioned Public Centers Program in 2017-2023
(yearly aggregate figures)

Year	2017	2018	2019	2020	2021	2022	2023
Delivered devices	6407	36 004	36 831	36 831	36 831	115 317	123 643

Source: SUTEL, General Directorate of FONATEL. Costa Rica, 2023.

Table 105. Costa Rica: Number of devices intended for accessing ICTs delivered through the Provisioned Public Centers Program, per institution, in 2018-2023
(yearly aggregate figures)

Institution	2018	2019	2020	2021	2022	2023
MEP	25 678	26 388	26 388	26 388	104 874	113 200
MICITT	4941	5058	5058	5058	5058	5058
CCSS	4318	4318	4318	4318	4318	4318
CENCINAI	1067	1067	1067	1067	1067	1067
Total	**36 004**	**36 831**	**36 831**	**36 831**	**115 317**	**123 643**

Source: SUTEL, General Directorate of FONATEL. Costa Rica, 2023.

Table 106. Costa Rica: Number of CPSPs that have benefited from the Provisioned Public Centers Program, per institution, in 2018-2023
(yearly aggregate figures)

Institution	2018	2019	2020	2021	2022	2023
CCSS	3134	3134	3134	3134	3134	3134
MEP	335	335	335	335	2628	2858
MICITT	246	268	268	268	268	268
CENCINAI	72	72	72	72	72	72
Total	**3787**	**3809**	**3809**	**3809**	**6102**	**6332**

Source: SUTEL, General Directorate of FONATEL. Costa Rica, 2023.

Table 107. Costa Rica: Districts with coverage under the Provisioned Public Centers Program in 2017-2023
(yearly aggregate figures)

	2017	2018	2019	2020	2021	2022	2023
Districts with coverage	172	263	263	263	263	456	468
Country coverage	36 %	54 %	54 %	54 %	54 %	93 %	95 %

Source: SUTEL, General Directorate of FONATEL. Costa Rica, 2023.

Table 108. Costa Rica: Investments made through the Provisioned Public Centers Program in 2017-2023
(yearly figures in millions of colones)

	2017	2018	2019	2020	2021	2022	2023	Total
Investment	4752	3357	1464	0	0	23 467	13 857	46 897

Source: SUTEL, General Directorate of FONATEL. Costa Rica, 2023.

TTable 109. Costa Rica: Zones with free Internet access made available through the Connected Public Spaces Program, per status, in 2019-2023
(half-yearly aggregate figures)

Status	2019	2020	2021	2022	2023
Active subsidy	301	510	513	513	411
Completed subsidy (active service)	0	0	0	0	65
Completed subsidy (inactive service)	0	0	0	0	37

Source: SUTEL, General Directorate of FONATEL. Costa Rica, 2023.

Table 110. Costa Rica: Number of new and total users, hours of connection time, data traffic (in GB), and sessions initiated by users under the Connected Public Spaces Program in 2019-2023
(yearly aggregate figures)

Operator	2019	2020	2021	2022	2023	Total
Total users	399 218	715 716	1 683 033	2 050 106	1 531 524	6 379 597
New users	239 062	339 783	599 050	618 768	560 617	2 357 280
Hours of connection time	790 644	1 358 995	3 862 881	4 754 899	3 337 615	14 105 033
Traffic (GB)	85 869	242 929	1 003 223	1 278 604	718 123	3 328 748
Sessions	1 269 812	2 957 749	6 942 592	8 078 085	5 551 326	24 799 564

Source: SUTEL, General Directorate of FONATEL. Costa Rica, 2023.

Table 111. Costa Rica: Investment made through the Connected Public Spaces Program, per operator, in 2019-2023
(yearly figures in millions of colones)

Operator	2019	2020	2021	2022	2023	Total
RACSA-ICE	278	1322	2561	2741	2609	9511
Coopeguanacaste	253	1251	2221	2779	1885	8390
Telecable	450	1167	1767	2188	1463	7035
Total	**981**	**3740**	**6550**	**7708**	**5957**	**24 936**

Source: SUTEL, General Directorate of FONATEL. Costa Rica, 2023.

Table 112. Costa Rica: Achievement of the 2015-2021 PNDT's Goal #14 and the 2022-2027 PNDT's Goal #5: to achieve progress with FONATEL's Bicentennial Education Network Program in 2021-2023

Indicator	2021	2022	2023
Progress	19,8 %	25,8 %	26,5 %
Annual goal[1]	39,6 %	MSP[2]	MSP[2]
Achievement % of annual goal	50 %	NA	NA
Goal total[1]	39,6 %	100 %	100 %
Achievement % of goal total	50 %	26%	26%

Note:[1] The goals set in the 2015-2021 PNDT were last updated in February 2021, while the goals in the 2022-2027 PNDT were last updated in December 2022.

[2]MSP: This goal does not have a planned timetable or target. No target or objective has been set for this goal in the year of reference.

Source: SUTEL, General Directorate of FONATEL. Costa Rica, 2023.

Table 113. Costa Rica: Number of education centers connected through the Bicentennial Education Network Program in 2021-2023
(half-yearly aggregate figures)

Connected ECs	1st Sem 2021	2st Sem 2021	1st Sem 2022	2st Sem 2022	1st Sem 2023	2st Sem 2023
Aggregate	3	83	383	600	665	682
ECs	3	80	300	217	65	17

Note: EC stands for education centers.

Source: SUTEL, General Directorate of FONATEL. Costa Rica, 2023.

Table 114. Costa Rica: Number of education centers served through the Bicentennial Education Network Program, per status, in 2021-2023
(yearly aggregate figures)

Indicator[1]	2021	2022	2023
Total ECs assigned to FONATEL's area of focus	2375	2375	2375
ECs awaiting service	516	673	683
ECs inspected to determine the technical requirements for installation	487	725	748
ECs where the technical requirements for installation have been met	485	725	747
ECs with a proposed solution under review	283	642	693
ECs with a fully approved solution	262	625	685
ECs provided with connectivity and internal networks	168	601	682
ECs connected to the Bicentennial Education Network	133	600	682

Note: [1]EC = education center.

Source: SUTEL, General Directorate of FONATEL. Costa Rica, 2023.

Table 115. Costa Rica: Number of education centers connected through the Bicentennial Education Network Program, per broadband speed in Mbps, in 2021-2022
(half-yearly aggregate figures)

Broadband speed (Mbps)	2021	2022	2023
15 Mbps	2	34	34
40 Mbps	5	53	53
100 Mbps	69	297	352
175 Mbps	40	141	159
300 Mbps	15	64	70
500 Mbps	2	11	14
Total	**133**	**600**	**682**

Source: SUTEL, General Directorate of FONATEL. Costa Rica, 2023.

Table 116. Costa Rica: Percentage of education centers connected through the Bicentennial Education Network Program, per operator, in 2021-2023
(half-yearly aggregate figures)

Operator	2021	2022	2023
Telecable	79	180	185
Coopeguanacaste	39	245	253
RACSA-ICE-PC	15	136	205
Liberty		39	39
Total	**133**	**600**	**682**

Source: SUTEL, General Directorate of FONATEL. Costa Rica, 2023.

Table 117. Costa Rica: Distribution of education centers connected through the Bicentennial Education Network Program, per province, in 2021-2023
(yearly aggregate figures)

Province	2021	2022	2023
San Jose	37	88	96
Alajuela	6	154	156
Heredia	0	20	25
Cartago	2	35	37
Guanacaste	33	98	102
Puntarenas	45	106	109
Limon	10	99	157
Total	**133**	**600**	**682**

Source: SUTEL, General Directorate of FONATEL. Costa Rica, 2023.

Table 118. Costa Rica: Districts with coverage under the Bicentennial Education Network Program in 2021-2023
(Half-yearly aggregate figures)

Connected ECs	1st Sem 2021	2st Sem 2021	1st Sem 2022	2st Sem 2022	1st Sem 2023	2st Sem 2023
Aggregate	2	57	115	162	169	176
Half-yearly	2	55	58	47	7	7

Source: SUTEL, General Directorate of FONATEL. Costa Rica, 2023.

Table 119. Costa Rica: Number of students enrolled in the education centers connected through the Bicentennial Education Network Program in 2021-2023
(Half-yearly aggregate figures)

Students	1st Sem 2021	2st Sem 2021	1st Sem 2022	2st Sem 2022	1st Sem 2023	2st Sem 2023
Aggregate	532	33 643	87 881	141 861	158 963	161 564
Half-yearly	532	33 111	54 238	53 980	17 102	2601

Source: SUTEL, General Directorate of FONATEL. Costa Rica, 2023.

Table 120. Costa Rica: Number of new and total users, hours of connection time, data traffic (in TB), and sessions initiated by users under the Bicentennial Education Network Program in 2021-2023
(half-yearly aggregate figures)

Operator	I S 2021	II S 2021	I S 2022	II S 2022	I S 2023	II S 2023
Total users	15 598	336 657	620 240	832 235	1 084 708	2 889 438
New users	13 630	123 874	142 592	211 660	193 996	685 752
Hours of connection time	69 125	3 175 014	2 178 421	5 103 465	4 560 145	15 086 170
Traffic (TB)	6	103 746	277 472	546 206	663 700	1 591 129
Sessions	80 263	2 374 177	3 546 606	5 996 851	7 035 161	19 033 058

Source: SUTEL, General Directorate of FONATEL. Costa Rica, 2023.

Table 121. Costa Rica: Investment made under the Bicentennial Education Network Program, per operator, in 2021-2023
(yearly figures in millions of colones)

Operator	2021	2022	2023	Total
Liberty	932	331	46	1309
Coopeguanacaste	43	1900	3179	5122
Telecable	38	1632	1974	3644
ICE-RACSA-PC	0	797	2218	3014
Total	**1013**	**4659**	**7417**	**13 089**

Fuente: SUTEL, Dirección General de FONATEL. Costa Rica, 2023.

ACRONYMS

2023

A4AI	The acronym of the Alliance for Affordable Internet. Alliance for Affordable Internet
PON	The acronym for Passive Optical Networks. Active Optical Networks
ARESEP	The acronym of the "Autoridad Reguladora de los Servicios Públicos" [Public Utilities Regulatory Authority]
ARPU	The acronym for Average Revenue per User. Average Revenue per User
BCCR	The acronym of the "Banco Central de Costa Rica" [Central Bank of Costa Rica]
IDB	The acronym of the Inter-American Development Bank
CCSS	The acronym of the "Caja Costarricense de Seguro Social" [Social Security Administration of Costa Rica]
CECIs	The acronym of the "Centros Comunitarios Inteligentes" [Intelligence Community Centers]
Cen Cinai	The acronyms of the "Centros de Educación y Nutrición" [Education and Nutrition Centers] and the "Centros Infantiles de Atención Integral" [Children's Comprehensive Care Centers]
CEPF	The acronym for "Contribución Especial Parafiscal" [Special Parafiscal Contribution]
CGR	The acronym of the "Contraloría General de la República" [Office of the Comptroller General of the Republic]
COMEX	The acronym of the "Ministerio de Comercio Exterior" [Ministry of Foreign Trade]
COPROCOM	The acronym of the Commission for the Promotion of Competition (COPROCOM)
CPSPs	The acronym of the "Centros de Prestación de Servicios Públicos" [Centers for the Provision of Public Services]
DGC	The acronym for the "Dirección General de Calidad" [General Directorate of Quality]
DGCO	The acronym of the "Dirección General de Competencia" [General Directorate of Competition]
DGF	The acronym of the "Dirección General de FONATEL" [General Directorate of FONATEL]
DGM	The acronym of the "Dirección General de Mercados" [General Directorate of Markets]
DWDM	The acronym for Dense Wavelength Division Multiplexing. DWDM is a higher bandwidth fiber optic technology that uses multiple simultaneous wavelengths
EBAIS	The acronym of the "Equipos Básicos de Atención Integral en Salud" [Basic Comprehensive Health Care Teams]
ENAHO	The acronym for "Encuesta Nacional de Hogares" [National Household Survey]
ENIGH	The acronym for "Encuesta Nacional de Ingresos y Gastos de los Hogares" [National Survey of Household Income and Expenditures]
QAF	The acronym for Quality Adjustment Factor
FTTx	The acronym for Fiber-to-the-X; a generic term for network architecture that uses optical fiber for last mile telecommunications
FONATEL	The acronym of the "Fondo Nacional de Telecomunicaciones" [National Telecommunications Fund]

GB	Gigabyte
GIS	The acronym for Geographic Information System. Geographic Information System
GSM	The acronym for Global System for Mobile Communications. Global System for Mobile Communications
HFC	The acronym for Hybrid Fiber-Coaxial. Hybrid fiber-copper networks that use DOCSIS, or other similar technologies, for the provision of services
HHI	The acronym for the Herfindahl-Hirschman Index; a common measure of market concentration
ICE	The acronym of the "Instituto Costarricense de Electricidad" [Costa Rican Institute of Electricity]
IMAS	The acronym of the "Instituto Mixto de Ayuda Social" [Joint Institute of Social Assistance]
INEC	The acronym of the "Instituto Nacional de Estadística y Censos" [National Institute of Statistics and Censuses]
IP	The acronym for Internet Protocol. Internet Protocol: Set of network layer rules and standards for routing digital data communication according to the international DSI model
IPIF	The acronym for "índice de Precios de Internet Fijo" [Fixed Internet Price Index]
IPTM	The acronym for "Índice de Precios de Telecomunicaciones Móviles" [Mobile Telecommunications Price Index]
IPTV	The acronym for Internet Protocol Television. Internet Protocol Television
ISO	The acronym of the International Organization for Standardization. International Organization for Standardization
IXP	The acronym for Internet Exchange Point. Internet Exchange Point
kbps	Kilobits per second
LGT	The acronym for the "Ley General de Telecomunicaciones" [General Telecommunications Act], Act No. 8642
LTE	The acronym for Long Term Evolution. Long Term Evolution: wireless broadband technology designed to support mobile and portable devices and enable Internet access
Mbps	Megabits per second
MEIC	The acronym of the "Ministerio de Economía, Industria y Comercio" [Ministry of Economy, Industry and Commerce]
MEP	The acronym of the "Ministerio de Educación Pública" [Ministry of Public Education]
MH	The acronym of the "Ministerio de Hacienda" [Ministry of Finance]
MICITT	The acronym of the "Ministerio de Ciencia, Tecnología y Telecomunicaciones" [Ministry of Science, Technology and Telecommunications]
MIDEPLAN	The acronym of the "Ministerio de Planificación Nacional y Política Económica" [Ministry of National Planning and Economic Policy]

MIVAH	The acronym of the "Ministerio de Viviendas y Acentamientos Humanos" [Ministry of Housing and Human Settlements]
MMDS	The acronym for Multichannel Multipoint Distribution Services. Multichannel Multipoint Distribution Services
MMS	The acronym for Multimedia Messaging System. Multimedia Messaging System
MS	The acronym of the "Ministerio de Salud" [Ministry of Health]
OECD	The acronym of the Organization for Economic Co-operation and Development
Off-net	This term refers to voice calls and/or short messages that originate from an outside network that is different to the target network
On-net	This term refers to voice calls and/or short messages that originate from the same network as the target network
PAPyP	The acronym for "Plan Anual de Proyectos y Programas" [Annual Project and Program Plan]
PBAS	The acronym for "Programa Banda Ancha Solidaria" [Broadband Solidarity Program]
PCC	The acronym for "Programa Comunidades Conectadas" [Connected Communities Program]
PCiC	The acronym for "Programa Ciudadano Conectado" [Connected Citizen Program]
PCPE	The acronym for "Programa Centros Públicos Equipados" [Provisioned Public Centers Program]
PEPC	The acronym for "Programa Espacios Públicos Conectados" [Connected Public Spaces Program]
PHC	The acronym for "Programa Hogares Conectados" [Connected Households Program].
GDP	The acronym for Gross Domestic Product
PNDT	The acronym for "Plan Nacional de Desarrollo de las Telecomunicaciones" [National Telecommunications Development Plan]
UNDP	The acronym for United Nations Development Program
PON	The acronym for Passive Optical Networks. Passive Optical Networks
pp	The acronym for Percentage Points
PREB	The acronym for "Programa Red Educativa del Bicentenario" [Bicentennial Education Network Program]
QoSE	The acronym for Quality of Service Experienced by the User
RCS	The acronym for "Resolución del Consejo de Sutel" [SUTEL Board Resolution]
RPCS	The acronym for "Reglamento de Prestación y Calidad de Servicios" [Service Provision and Quality Regulations]
SDH	The acronym for Synchronous Digital Hierarchy. Protocol for transferring bit streams synchronously over fiber
SMS	The acronym for Short Messaging Service. Short Messaging Service

SITEL	The acronym for "Sistema de Indicadores de Telecomunicaciones" [Telecommunication Indicators System]
SUTEL	The acronym of the "Superintendencia de Telecomunicaciones" [Superintendency of Telecommunications]
TB	Terabyte
UG	Management Unit in charge of executing FONATEL programs and projects
ITU	The acronym of the International Telecommunication Union. A special agency of the United Nations in charge of regulating the provision of telecommunication services by operators and providers at an international level
USB	The acronym for Universal Serial Bus. A device with a universal serial port for data storage
VoIP	The acronym for Voice over Internet Protocol
VPN	The acronym for Virtual Private Network. Virtual Private Network
xDSL	The acronym for Digital Subscriber Line. A technology that uses a copper telephone platform for access