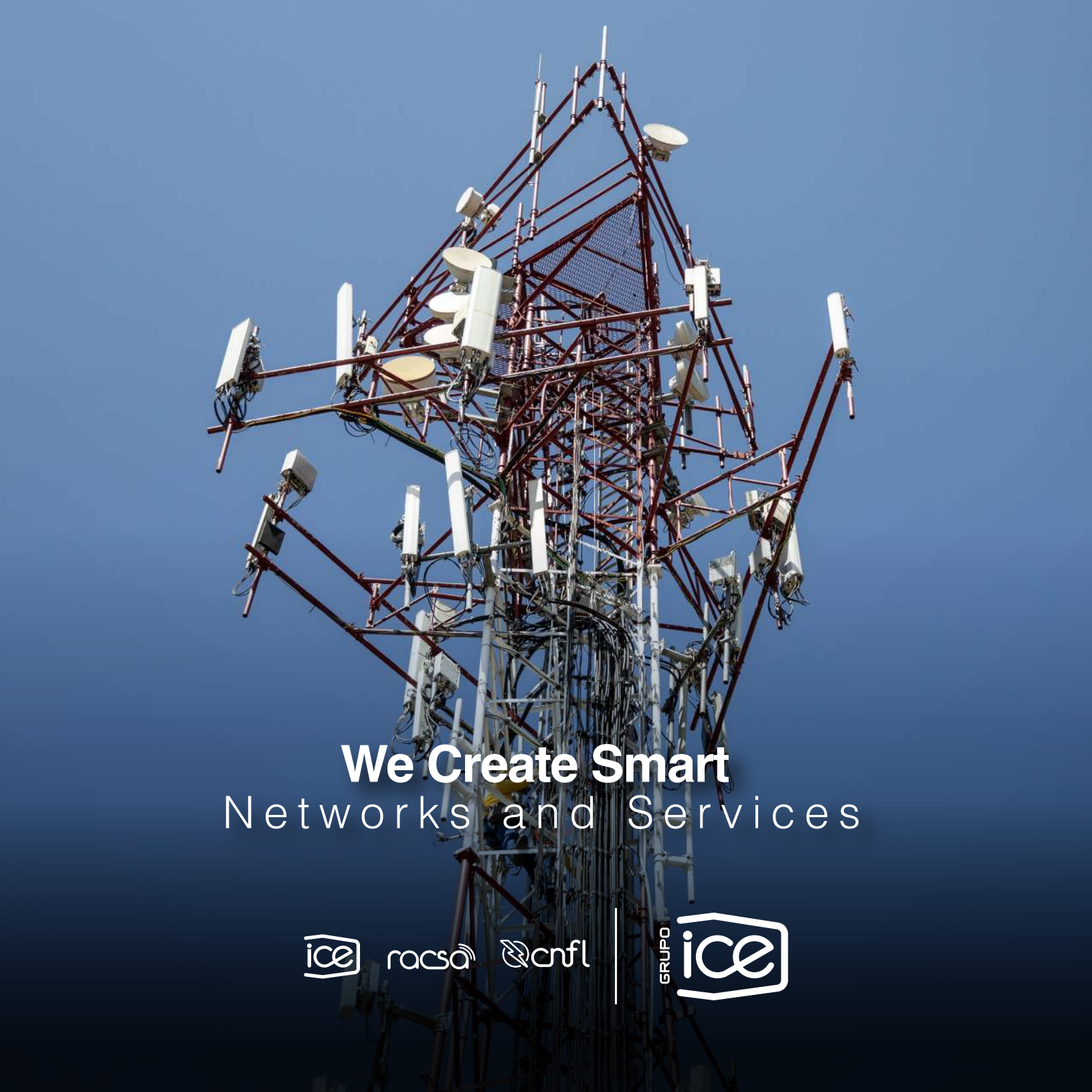
We Create Smart
Networks and Services
ice
racsa
cnfl
GRUPO
ice

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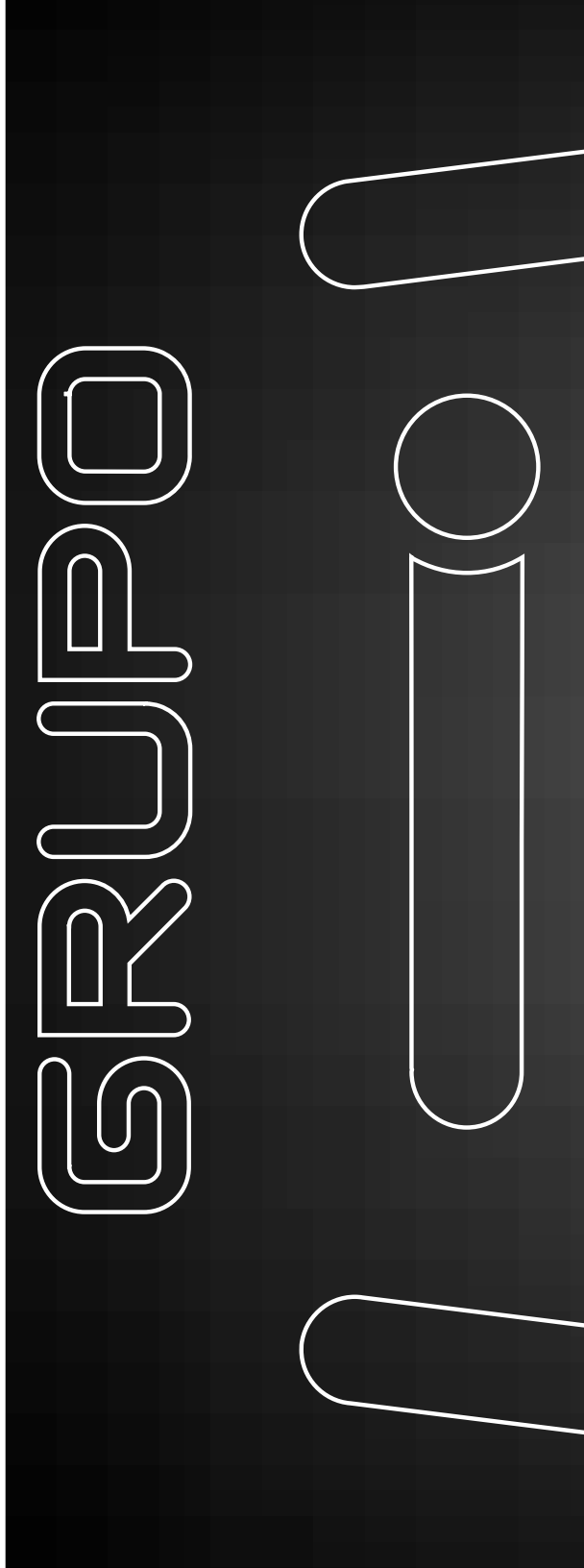
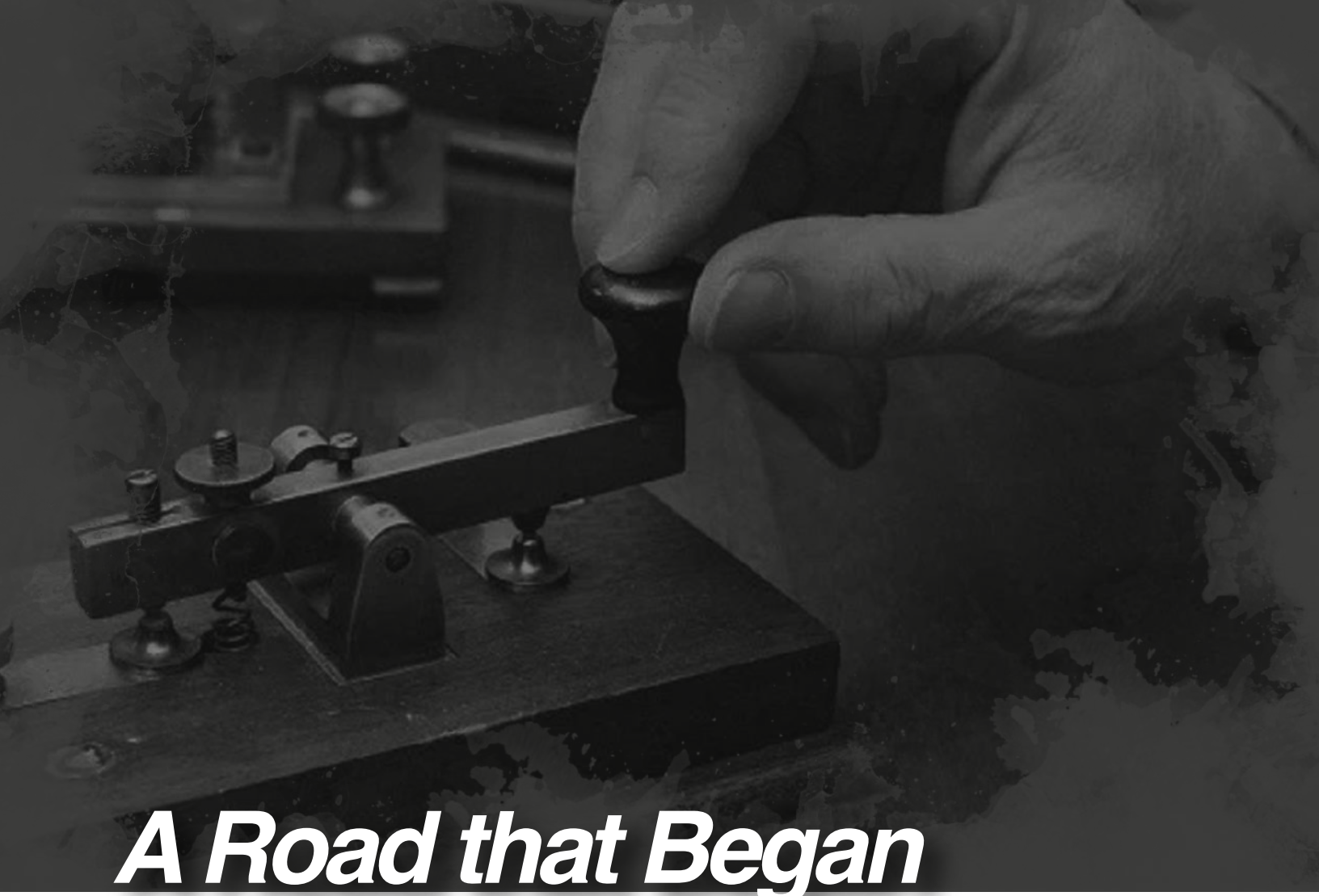




A Road that Began with Telegraph

Since the middle of the 19th century, Costa Rica [has] counted with Telegraph services.

It was, however, over the last two decades of the present century- thanks to the telephone-that communications invigorated.

In 1886, one decade after Alexander Graham Bell patented the telephone, some companies offered that service under the concession agreement model.

The Postal Service ompetition

Telegraph connected Costa Rica with the World in “Real time”.

It was so important for the State that, in 1920, the Government decreed that telegraph and telephone services were of “public use” and a nationalized monopoly.

- **1887:** The Government granted the first telephone concession. This agreement didn´t produce the expected results in service nor in infrastructure.
- **1893:** When this concession expired, the Government reassigned it to Francisco Mendiola, who established the **Compañía de Teléfonos de Costa Rica** in 1895.
- **1897:** The Costa Rican Government extended the contract with Mendiola to provide telephone services in San José, Cartago, Heredia and Alajuela.
- **1902:** The **United Fruit Company** installed its own undersea cable in Puerto Limón for international communication.
- **1928:** The American Foreign Power Co. (that belonged to the *Electric Bond and Share Company, EBASCO)* monopolized the telephone services.
- Even though the American Foreign Power Co. offered greater coverage, the service deteriorated by the half of the 20th century due to the lack of great technological innovations.

> The beginning of telegraph services in the country was possible thanks to the coffee exports and domestic trade.

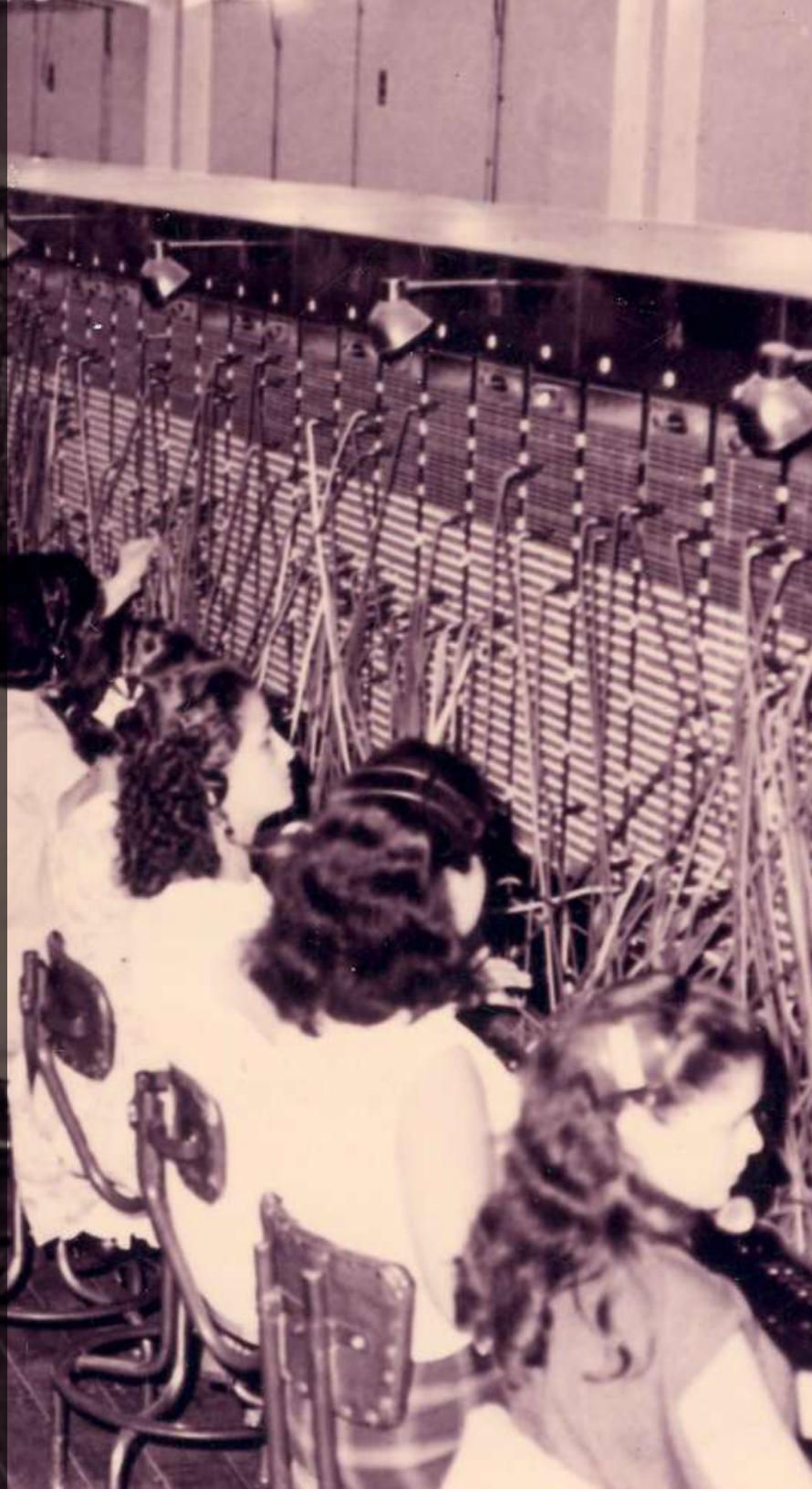
> In 1868, Alajuela, Cartago y San José had the first telegraph lines. One year after, these lines allowed communication with the main port of exportation: Puntarenas.

Costa Rican Radiographic was born

The Compañía Radiográfica Internacional de Costa Rica, predecessor of RACSA, was born in 1922, to provide telegraph and telephone services for the State.

Although these companies promoted communications on the first half of the 20th century, the high costs of investment and the network decay ended up pressing the Government to take over the service.

- In 1963, ICE –created in 1949 to electrify the country based on clean energies- takes over the operation and development of the National Telecommunication System.
- With this decision, Costa Rica improved the telephone and telegraph services coverage and quality.
- As part of this process, on June 18th, 1964, ICE and Compañía Radiográfica Internacional created Radiográfica Costarricense, S.A.
- Six months later, on December 1st, RACSA inaugurated the telex service (teletypewriter for data transmission) to 124 countries.



- One decade after, in May, 1974, RACSA automatized that service, thanks to the acquisition of modern electronic equipment and computers.
- By mutual agreement, on November 29th, 1975, ICE bought the totality of RACSA shares and became the sole stockholder.
- During the 80´s, RACSA incorporated innovative services such as fax transmission and a public data network, third of this type in Latin America.
- In 1991, RACSA inaugurated a satellite teleport for corporate digital telecommunications. This teleport was complemented with fiber optic rings.
- In 1994, RACSA began marketing Internet in the country as well as other associated services such as email, document management and electronic marketing.
- During the subsequent decades, RACSA successfully expanded these and other telecommunication services.
- In the juncture of telecommunication opening, RACSA redefined customers and services towards corporative, institutional and Government market niches.

Since 2014, RACSA refocused on corporative, institutional and Government services. Nowadays, this company is the engine of smart spaces in many cantons in the country.

Telephone Services for All

In 1963, the Costa Rican Institute of Electricity (ICE) took over the telecommunications in the country. Thanks to this decision, innovation and coverage accelerated.

Before that time, providers were usually foreign companies –mainly-which service, coverage and infrastructure standards were basic.

Similar to what happened with the power sector during the first half of the 20th century, social movements pressured to improve the access and the quality of the service.

This set off that, in 1963, ICE was assigned the operation and development of the National Telecommunication System.

How did this decision impact coverage and access index?

Let´s see:

- In the 60's, ICE began the installation of coin telephones (450)
- In 1968, fixed telephony penetration was very small: 1.76 land lines per inhabitant.
- By 1969, ICE had already installed 24 telephone centers and 33798 land lines.
- Over half a century (1968-2018), land line service grew from 29316 lines to 712247. That means, from a density of **1.76 lines to 14.20 per each 100 inhabitants.**
- Even at the present time, in 2019, and in spite of the natural migration to mobile services, Costa Rica holds one of the highest land line penetrations in Latin America: 13.9 lines per each 100 inhabitants.
- In 1994, ICE began selling analogic cellphones.
- By 1995, 94% of the population had access to telecommunication services.
- In 1996, the country counted with 7444 coin phones, representing an average of 2.3 devices per each 1000 inhabitants.
- In 2009, ICE launched ***kölbi***, leader brand in the mobile phone market.
- In 2017, ICE became the first Central American carrier offering 4.5G LTE technology to its customers. *(see "Taking the lead in the mobile phone market")*
- ICE operates with the lowest land line and mobile phone rates in Latin America, according to data endorsed by the International Telecommunication Union (ITU).

Land Line Density

Note: percentage by each 100 inhabitant
Source: ICE Group´s Telecommunications, 2018. Sutel, Dirección General de Mercados, 2018.

Even though the Internet and mobile phone burst has reduced land phone services, Costa Rica has one of the highest penetrations in Latin America. Let's take a look to its evolution:

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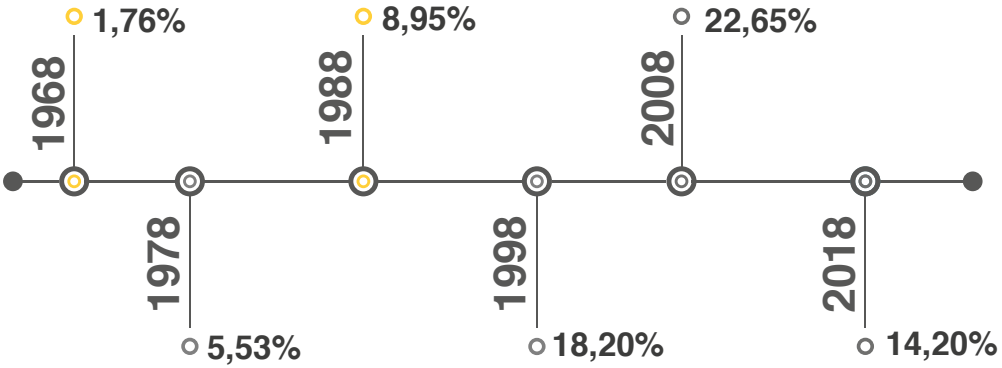
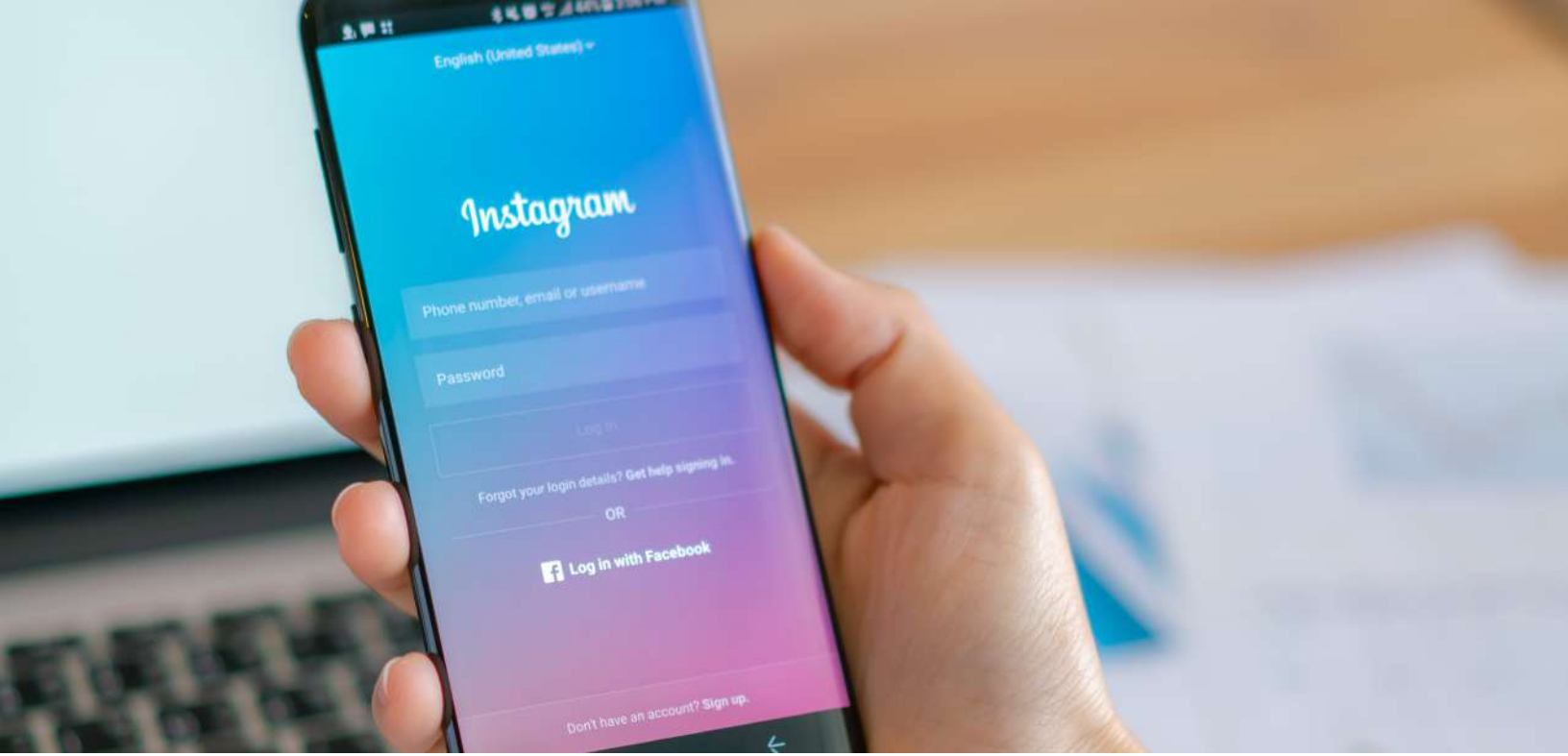


Pioneering in
Mobile Services

- In 1994, ICE began selling analogic mobile phones in Costa Rica.
- In 1995, ICE changed analogic technology for digital technology TDMA (Time Division Mobile Advance).
- In 1998, ICE had 108770 devices operating, which represents a density of four mobile services for each 100 inhabitants.
- In 2002, due to the fast–growing demand, ICE acquired 400000 GSM (Global System Mobile) cell phones.
- Later that year, ICE had 455000 cell phones operating and the telephone density was 11 services for each 100 inhabitants.
- One year after, the capacity grew to 1198462 lines for a density of 27.8 lines for each 100 inhabitants.



- After the telecommunication market opening in 2009, ICE launched ***Kölbi***.
- ***Kölbi*** is considered a case of international success because ICE is one of the few Government companies leading the market after an opening process.
- Since 2011, the ***Kölbi's*** mobile phone base has increased in 600 thousand customers (at the present has 4.2 million customers out of the almost 7 million in the Costa Rican market)
- In 2014, ICE launches the LTE Long Term Evolution technology (4G) in Central America.
- For 4 consecutive years, ***Kölbi*** has kept a Lovemark position in Costa Rica.
- In December 2017, ICE launched the first 4.5G network in the region.
- Nowadays, ICE provides ***Kölbi TV***, a service that integrates 100% digital cable TV and HD

Fiber optic Highways

- ICE Group counts with undersea cables for international connection in the Atlantic (Maya and Arcos) and in the Pacific (Pan American Crossing).
- ICE has an optical fiber network of more than 25 500 km installed all over the country and with a transmission capacity of more than 300 Mbps.
- ICE also counts with mixed connections (optical fiber-copper) that allow speeds of more than 35Mbps and copper fibers with a capacity of 20Mbps.

The ICE Group's Corporate Division of Telecommunications plans to provide 64% of its services over optical fiber by 2024.

A Smart City is based on the concept of sustainability and life quality for the citizen, supported by technology.

Life Quality Hand by Hand with Technology

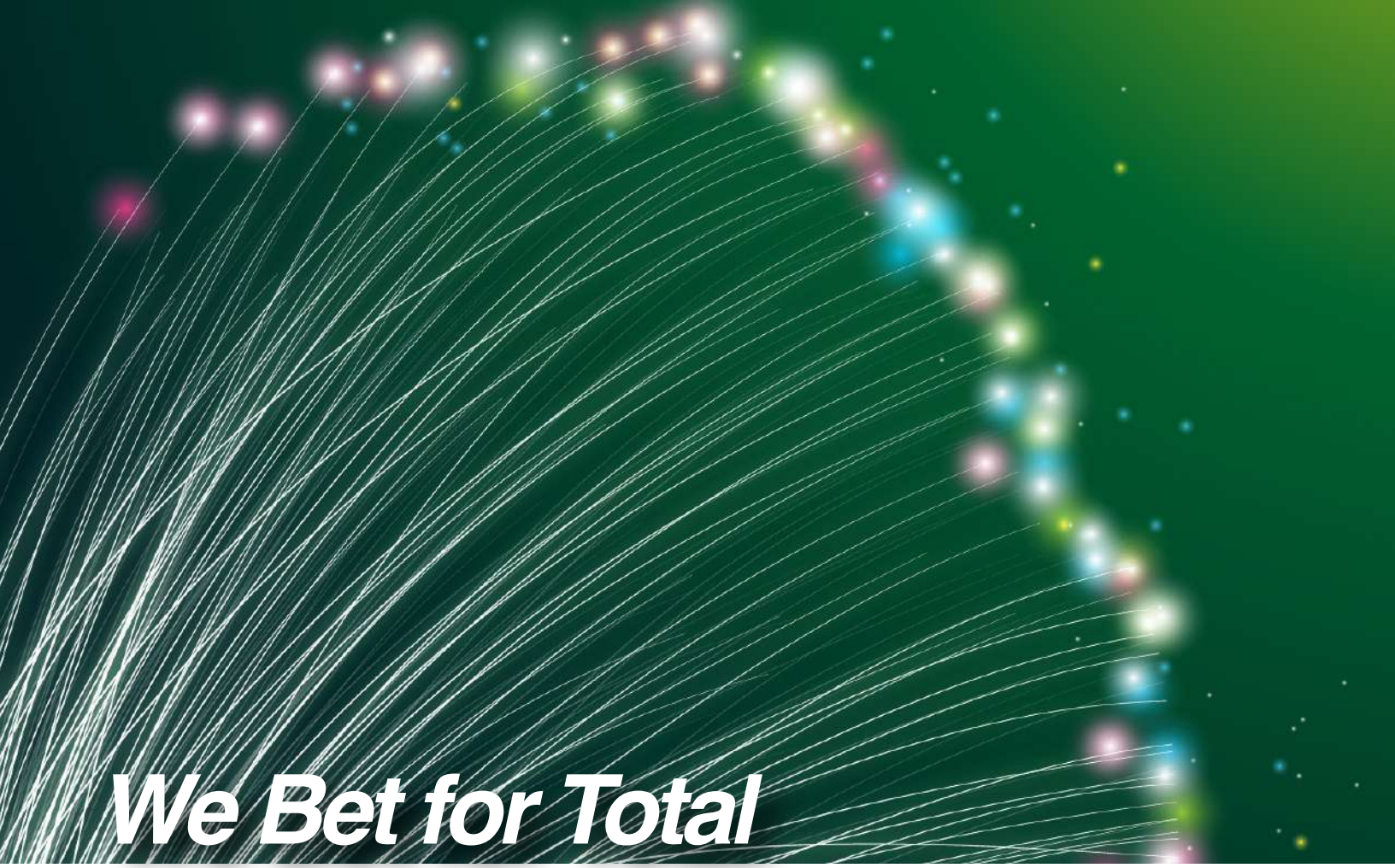
In a process led by RACSA, ICE Group moves towards a portfolio of digital services such as Smart Cities, video surveillance, information modules, Wireless Internet and Smart LED lighting in public spots.

- Nowadays, RACSA is a “single point contact” of the smart solutions that ICE Group provides for local governments.
- To achieve this, RACSA combines its expertise and its infrastructure with the ones from ICE and CNFL and provides convergent tailor-made solutions.
- These corporate synergies have allowed, as a starting point, video surveillance and Wireless Internet services in public areas.
- RACSA provides Smart City services for more and more cantons in the country. To mention some of them: Tibás, Grecia, Naranjo, Mora, Pococí, and Moravia.
- These services impact the people (Access to information and digital procedures) and the local Governments (for example, improving collection processes).
- Since 2014, RACSA focused on Business Lines among which stand out business connectivity, infrastructure management, digital information, and citizen services (logistic and operations).

Experience that Goes
Beyond Borders

In Partnership with Enatrel, ICE Group forayed in Nicaragua under the Brand Tecomunica.

This Company provides high quality Wireless Internet, digital TV and corporate services.



We Bet for Total
Connectivity

- ICE Group plans to launch, by 2020 the 5G technology in the country.

- ICE is also working on the expansion of the optical fiber network that will replace copper fiber
  The expectation is to have 64% of the national telecommunication network supported on optical fiber.

- ICE Group is constantly exploring other related markets such as convergent services, cloud solutions, artificial intelligence, Internet of Things (IoT), augmented reality, big data, cyber security, and entertainment, among others.

We Create Smart

Networks and Services