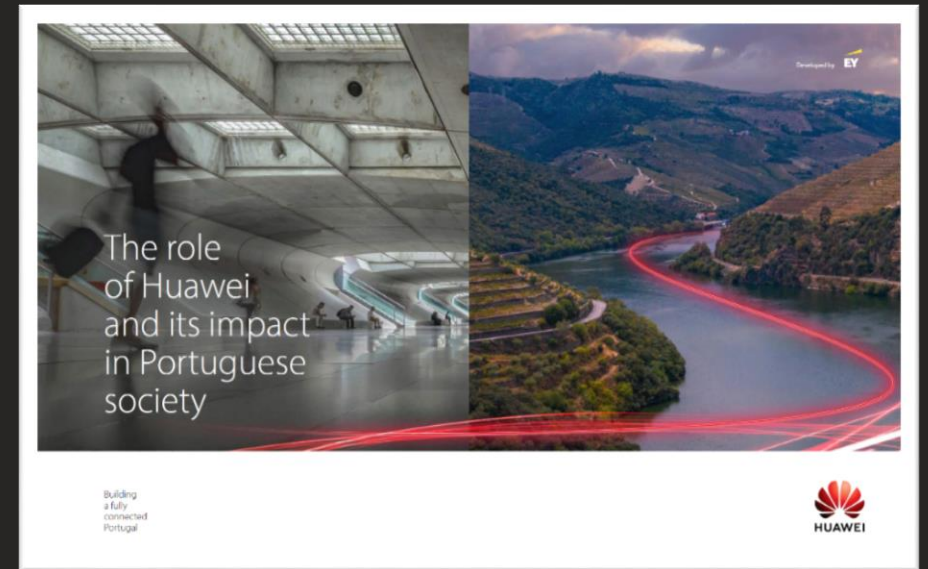


THE ROLE OF HUAWEI AND ITS IMPACT IN PORTUGUESE SOCIETY

Highlights of report
developed by EY



Title

The role of Huawei and its impact in Portuguese Society
Final Report

Sponsor

Huawei Portugal

Author

EY

Supervision

Paulo Madruga
Pedro Subtil
Sérgio Ferreira

Executive coordination

Fernando Teófilo
Hermano Rodrigues

Operational team

André Guilherme
Anna Lidacka
Catarina Monteiro
Giovana Jenkins
Marcelo Vendramel
Pedro Oliveira
Rita Tavares
Rodolfo Junqueira
Rui Ferreira



HUAWEI'S VALUE AND CONTRIBUTION TO PORTUGAL

Huawei in Portugal

Established in Portugal in **2004**



83% are local employees

4 operational business segments



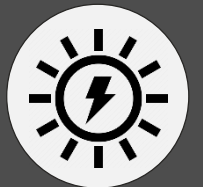
Carrier



Consumer



Enterprise



Digital Power

Main partnerships of Huawei Portugal

Established collaborations have a decisive role for the country's innovation environment



In 2019, Huawei Portugal signed a partnership agreement with StartUp Portugal

Partnership strengthens national entrepreneurship ecosystem, support startup incubation, enhance Portugal's position as a technological hub



Prominent role as a major sponsor of Web Summit

Several company leaders have attended and actively participated in the summit

Web Summit 2022 edition, in Lisbon

71.000+ attendees	2.250+ startups
1.000+ investors	2.000+ social media channels
2.000+ media	1.000+ speakers

A broader impact of Huawei on society

Cultivating digital talent

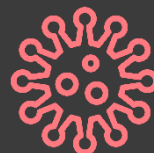


€2.7M

investment made since 2014 in local initiatives, investments, and partnerships with a focus on education, qualification, gender equality and sustainability.

During the COVID-19 pandemic:

- Assisted operators in maintaining the resilience of telecom networks
- Provided medical equipment to Portuguese authorities
- Public praise by the Portuguese Government in June 2020



Donated the 5G+AI Lab to the University of Aveiro and IT - Instituto de Telecomunicações

SMARTBUS



Mobile school visiting primary and secondary schools, providing training in ICT and cybersecurity

In 3 years, 10.869 students aged between 11 and 15, and 643 professors participated. 25 cities visited in 2022



Partner in initiative aiming to teach 1 million adults, especially those over 45 years old, on how to use the internet freely and easily by 2023



Over 80 future ICT talents from Portugal have spent two weeks at the Seeds for the Future Program summer camp at Beijing and Huawei HQ in Shenzhen



Huawei ICT technologies training, encourages students to get Huawei certification, and develops talents with practical skills for the ICT industry and the community



In 2021, as part of its commitment to the Education sector, Huawei, in partnership with .PT, launched a nationwide scholarship program, half of the scholarships are awarded to female students

In 2 editions, program received 8.300 applications



Huawei Summer Camp 4 Her explored the intersection between technology, sustainability, and personal development



In 2021, Portugal hosted 1st edition of Huawei Summer School for Female Leadership in the Digital Age

Huawei Portugal's ecosystem

Diverse ecosystem of partners

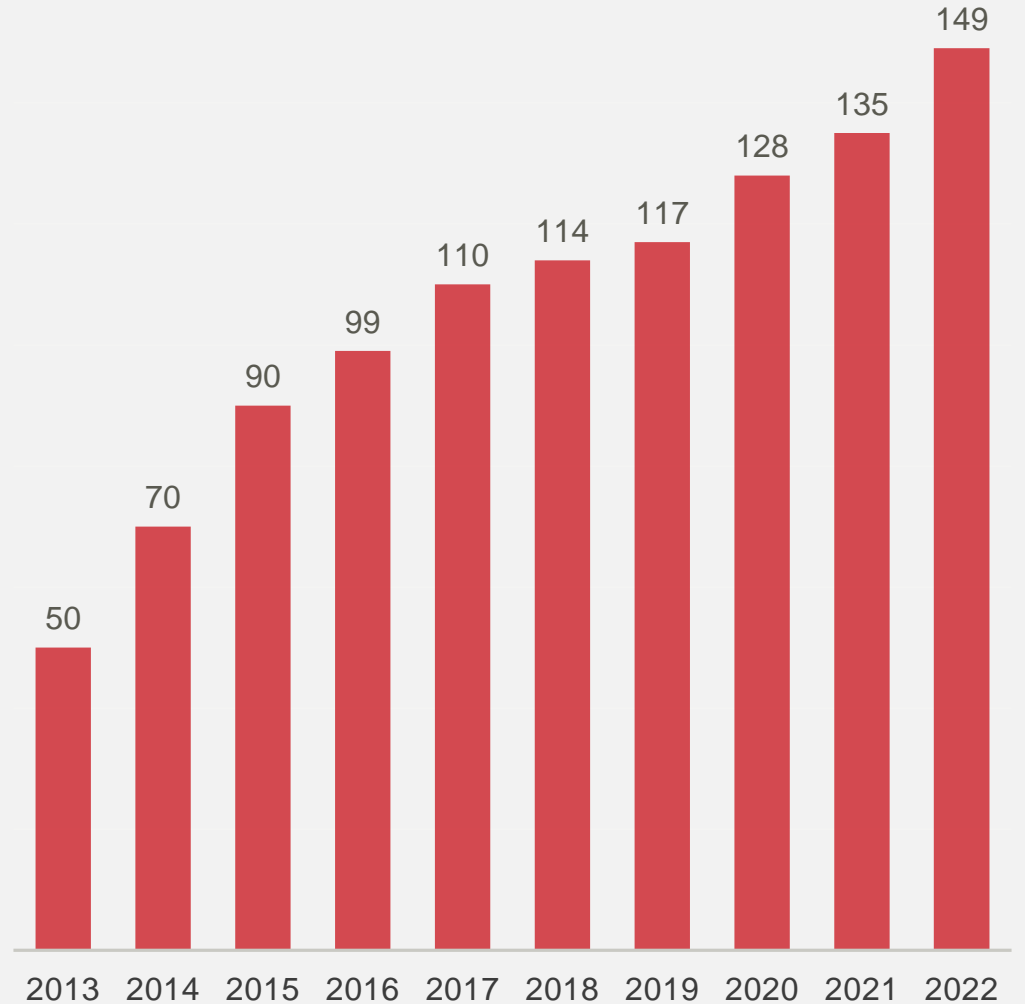
As a significant player in ICT innovation, services and solutions, Huawei has built a diverse network of partners from both the public and private sectors



partners from private and public sectors

Huawei's key collaborations span across various sectors, including professional, scientific and technical activities, business services, IT, manufacturing, wholesale and retail. However, its primary focus lies within the telecommunication sector

Huawei partner network in Portugal



Economic impact of Huawei's ecosystem (operational and investment) in 2022

An input-output modelling methodology was used by EY to estimate the total impacts of the Huawei Portugal ecosystem

Huawei Portugal Ecosystem has a multiplier effect of around 2x the Portuguese economy, considering Production

In terms of employment, the multiplier effect is more significant, reaching 7x, with ecosystem directly supporting about 651 jobs, together with activity impacting more than 4 thousand jobs indirectly, either along the upstream value chain or induced by consumption derived from household disposable income

The Huawei Portugal Ecosystem thus has a significant importance in the Portuguese economy, especially in terms of production, gross value added and employment

Source: SABI; INE; Huawei, EY analysis



651 impacted directly per year
2,989 impacted indirectly per year
1,127 induced impacted per year



yearly contributed to the Portuguese economy



in Gross value added (GVA)



in taxes

Multipliers of sectorial production

Huawei Ecosystem Portugal



The multiplier effects of the Huawei Portugal Ecosystem are higher than most activities in the ICT sector

Compared to “wholesale” sector, Huawei Portugal Ecosystem has a significantly higher multiplier effect (**1.98** vs. **1.50**)

Compared to “Telecommunications services” sector, Huawei Portugal Ecosystem has a significantly higher multiplier effect (**1.98** vs. **1.76**)

Strong contribution to accelerating activities of other ITC companies and business groups in Portugal, benefiting the national economy

Source: EY analysis

KEY FIGURES

OPERATIONAL AND INVESTMENT ACTIVITIES OF THE HUAWEI PORTUGAL ECOSYSTEM - 2022

 149

partners from private and public sectors

 ⁺ €658M

per year in production

 4.767

jobs

 €197M

in GVA

 €143M

in Taxes

 €2.7M

Huawei Portugal investment in local initiatives, programs, and partnerships focused on education and workforce development since 2014

2

ECONOMIC IMPACT OF EXCLUDING HUAWEI FROM 5G NETWORKS

Impacts of Huawei's exclusion from 5G infrastructure in Portugal

Lower productivity and innovation: negatively impact on operators, consumers, and economy competitiveness



High replacement costs

investments already made between 2020 and 2023



Safety risks

increased for consumers and operators given the need of swapping equipment



Market distortion

leading to higher market concentration and fears of price increases on 5G equipments



Investment lag on new technology

delay telecoms investment into higher speed infrastructure



Delayed technology to consumers

delay the access of Portuguese population to the 5G cellular network



Harm FDI

potential loss of other foreign investments in Portugal

Economic impacts of excluding Huawei - Methodological approach

The estimated overall impact results from the sum of 6 types of effects, namely:

- 1. Replacement investments**
investments that operators will have to make to replace all existing Huawei 5G equipment
- 2. Future investments**
increased investments costs to build the 5G network, resulting essentially from lower competition and supply on the market
- 3. Productivity losses**
costs related to delayed 5G full deployment, preventing citizens and businesses from taking advantage of the technology
- 4. Energy consumption**
costs resulting from the utilization of less energy efficient equipment from Huawei's competitors
- 5. Opportunity cost**
potential returns lost by operators, given the need to perform replacement investments, instead of using the financial resources on more profitable alternatives
- 6. Economic value not depreciated**
costs related to unutilized equipment still with a considerable lifecycle

€339M

Replacement investments

€24M

Energy consumption

€193M

Δ future investments

€58M

Opportunity cost

€282M

Productivity losses

€156M

Economic value to depreciate

5G full deployment **2030**

Potential economic impacts of Huawei's exclusion from 5G infrastructure in Portugal

Total impact

€1,052M

Source: EY analysis

3

**AVERAGE PRICE
INCREASE ON
CONSUMERS**

Average price increase on consumers

Considering the overall impact shown, excluding productivity losses, once they do not affect telecommunication operators' cashflow, the impact of banning Huawei from 5G network in Portugal on the average price consumers pay is **7,0%**

	Years to recover investment	Yearly value	Number of subscribers	Price increase	Base price	New price	Difference
€ 807,654, 571.73	7	€115,379, 224.52	13,626,781	€ 0.71	€ 10.06	€ 10.77	+ 7.0%

Source: EY analysis





The role of Huawei and its impact in Portuguese society ——— Developed by 