



The Open RAN Challenge

Brazilian Perspectives



About CPQD



LATAM's LARGEST RD&I CENTER on ICT

Area - 360.000 m²

2 spinoffs (Padtec and Tropicó)

Technical Advisor for Government and Clients

EMPLOYEES:

917



PATENTS:

391 National

210 International



The Digital Gap: Falling in love with the problem



DIGITAL DIVIDE

Key Takeaways of Digital Divide

Digital divide encompasses the technical and financial ability to utilize available technology, along with access to the internet.

Digital divides exist between developed and developing countries, urban and rural populations, young and educated versus older and less educated individuals, and men and women.

Consequences of the digital divide include isolation, which can affect mental health, educational barriers as postsecondary education increasingly moves online, and worsening gender discrimination.

Urban-rural divide is the single biggest factor in the digital divide.



(((Impacts of the Digital Divide)))



1 in 3 workers

lack foundational
digital skills

Sources: National Skills Coalition, Salesforce, RAND

3 in 4 workers

lack the resources to learn the
digital skills to succeed in
workplaces of the future



\$11.5 trillion

could be lost across
14 countries if the digital
skills gap isn't addressed

The Digital Gap: Falling in love with the problem

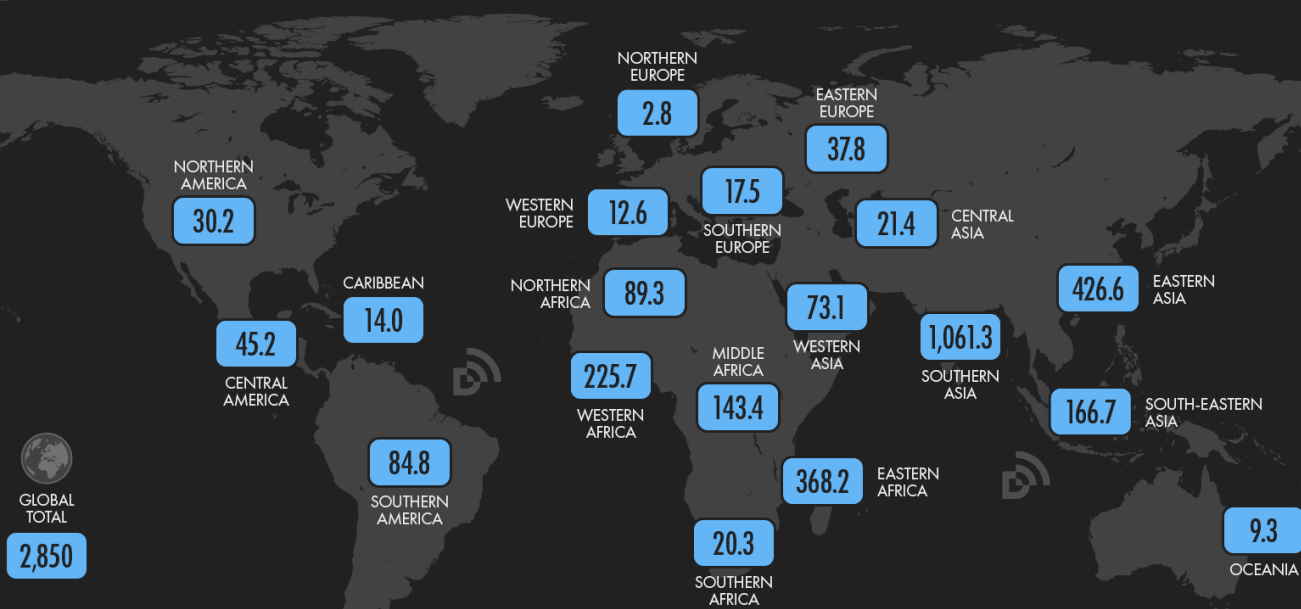


JAN
2023

UNCONNECTED POPULATIONS

NUMBER OF PEOPLE (IN MILLIONS) WHO DO NOT USE THE INTERNET

GLOBAL OVERVIEW

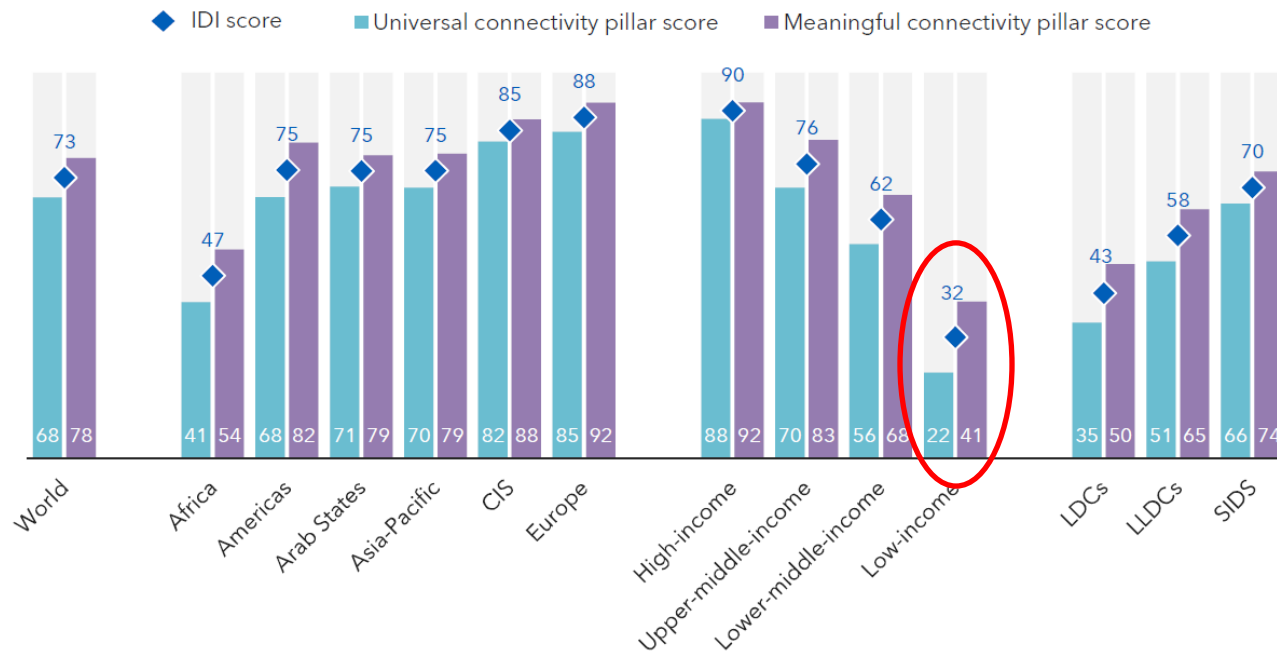


Affordable Internet Access and its Impact



The ICT Development Index 2023

Figure 9: Universal and meaningful connectivity pillar scores, by region and income group



A hand is shown holding a glowing lightbulb. The lightbulb is surrounded by a network of orange dots and lines, suggesting a digital or networked environment. A translucent brain is visible behind the lightbulb, symbolizing thought and innovation. The background is dark, and the overall scene is illuminated by the light from the bulb and the network.

How can Open RAN help to mitigate the problem?

Lower CAPEX and OPEX result in:

- Economies that can be transferred to the customers;
- Feasibility to attend less dense areas;
- Lower barriers for new entrants that are willing to cover unserved areas.

What are the challenges?

- Carriers lacking the skills to work with this new paradigm;
- Incumbent vendors currently are the trusted integrators for large carriers;
- Legal agreements with incumbent vendors avoiding the use of new solutions from competitors;
- New carriers are still skeptical on the real benefits of Open RAN;
- A few trusted Open RAN vendors in the market, not the wide ecosystem that was expected;
- Validated interoperable solutions are still scarce;
- Lack of local laboratories to test and validate the interoperability from different vendors.





Open RAN Initiatives in Brazil

- CPQD (RD&I, 2018) – TIP Community Lab;
- CPQD (RD&I, 2020) – First RD&I Project (5G BR), sponsored by the Telecommunications Fund for Innovation (FUNTTEL/MCOM);
- CPQD and RNP (RD&I, 2021) – Open RAN @Brasil Program – Phase 1. Sponsored by the Ministry of Science and Technology;
- ANATEL (Regulatory, 2021) – GT Open RAN;
- CPQD, RNP, Inatel, Eldorado (RD&I, 2022) – Open RAN @Brasil Program – Phase 2. Sponsored by the Ministry of Science and Technology;
- CPQD (RD&I, 2023) – Excellence Centre in Open Networks. Sponsored by EMBRAPII/MCTI.

Excellence Centre in Open Networks

Five pillars to elevate the country's capacity on Open RAN:

- Keep the RD&I on Open RAN, considering the current and future challenges towards a wide adoption of this paradigm on 5G+ and 6G, in close partnership with other reference centers around the world;
- Training and qualification of the local workforce to understand the benefits of Open RAN and adopt it. And develop new researchers on the subject;
- Establish an OTIC (Open Testing and Interoperable Center) in the region;
- Develop the local ecosystem through a Technological Association dedicated to Open RAN;
- Foster the development and acceleration of startups on the theme.

Open RAN

Summary



- The digital divide is a problem with enormous impacts on the economy and the well-being of a country's population;
- Many factors influence this situation, but the lack of connectivity or its accessibility are strong offenders;
- Open RAN can be a tool to help mitigate these issues, whether its savings are transferred to customers or facilitate the entry of new telecom service providers;
- There are still challenges in disseminating Open RAN in the market;
- Some possible actions involve the education, training and qualification of researchers and workforce in telecommunications operators;
- Fostering a local ecosystem in collaboration with other international initiatives and ensuring advanced tools and frameworks are available to local operators can catalyze this broad dissemination.

Thank you!

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EXCELLENCE CENTRE IN
OPEN NETWORKS

