



ANNUAL REPORT 2021

Contents

03	Foreword
04	Global Progress
09	Africa
14	Central Asia
18	Latin America & Eastern Caribbean
22	Pathway to Scaling & Sustainability
26	Comms & Knowledge Resources
33	Partners

Foreword

In 2021, an estimated 2.9 billion people were still offline with 96% of them living in low and middle-income economies. Additionally, over 90 per cent of children in the world had their education interrupted by the COVID-19 pandemic. Around 463 million children were left without access to remote learning, further exacerbating the global learning crisis and showing the importance of extending connectivity to hard-to-reach areas and vulnerable populations. Giga is an ambitious initiative to connect every school to the Internet to ensure that every young person has access to information, opportunity, and choice.

Since its launch in 2019, Giga has made remarkable progress towards its objective. Through collaborations with public and private partners, Giga has connected over 1 million students and teachers in 3,200+ schools in Africa, Central Asia, Latin America and the Organization of Eastern Caribbean States. In 2021, Giga hit a major milestone of 1 million schools mapped across 42 countries on the Project Connect platform. Furthermore, Giga has mapped infrastructure pertinent to extending connectivity in 18 countries, enabling Giga to propose fit-for-purpose solutions to advise National Connectivity Programmes to ensure students are online.

Giga also raised over 27 million dollars from global partners including Ericsson, Dubai Cares, and the Musk Foundation to finance and test technologies and business solutions to connect schools and their surrounding communities affordably and sustainably.

The key accomplishments of Giga in 2021 are summarized in this Annual Report. It lays the foundation for connecting all schools to the internet by 2030, an objective that requires working together across technologies, sustainable models, conducive regulatory environments, and partnerships powered by the global community.

We thank our partners and governments that have been instrumental in the progress of Giga so far and welcome new partnerships. Together, in every part of the world, we will continue to deliver for young people in alignment with ITU and UNICEF's mandate and the 2030 Agenda and the Sustainable Development Goals, especially in advancing equality for all in education and technology.



Mr. Fayaz King
Deputy Executive Director
Innovation
UNICEF



Ms. Doreen Bogdan-Martin
Director, Telecommunication
Development Bureau
International Telecommunication Union

School location + connectivity

School location (processed)

School location (not processed)

GLOBAL PROGRESS



GIGA 2021

With Giga, millions of young people have been connected to the internet

Giga's **Direct** Contributions

\$27MM+

**Raised for
UNICEF+ITU**

14 Partners

Including 1st time partners
Ericsson, Musk Foundation,
Softbank, etc.

3,200+

pilot schools connected

1.1 million

**children connected
(470K girls)**

Giga's **Mobilization** Successes

\$210M

mobilized
WB, Brazil, EIB, ISDB,
IDB
(\$4.8B more needed)

~25,200

Connected schools planned for 2022/3

8.3 million+

**children will be
connected 2022/3**

Mapping highlights



1M+ schools mapped across 42 countries



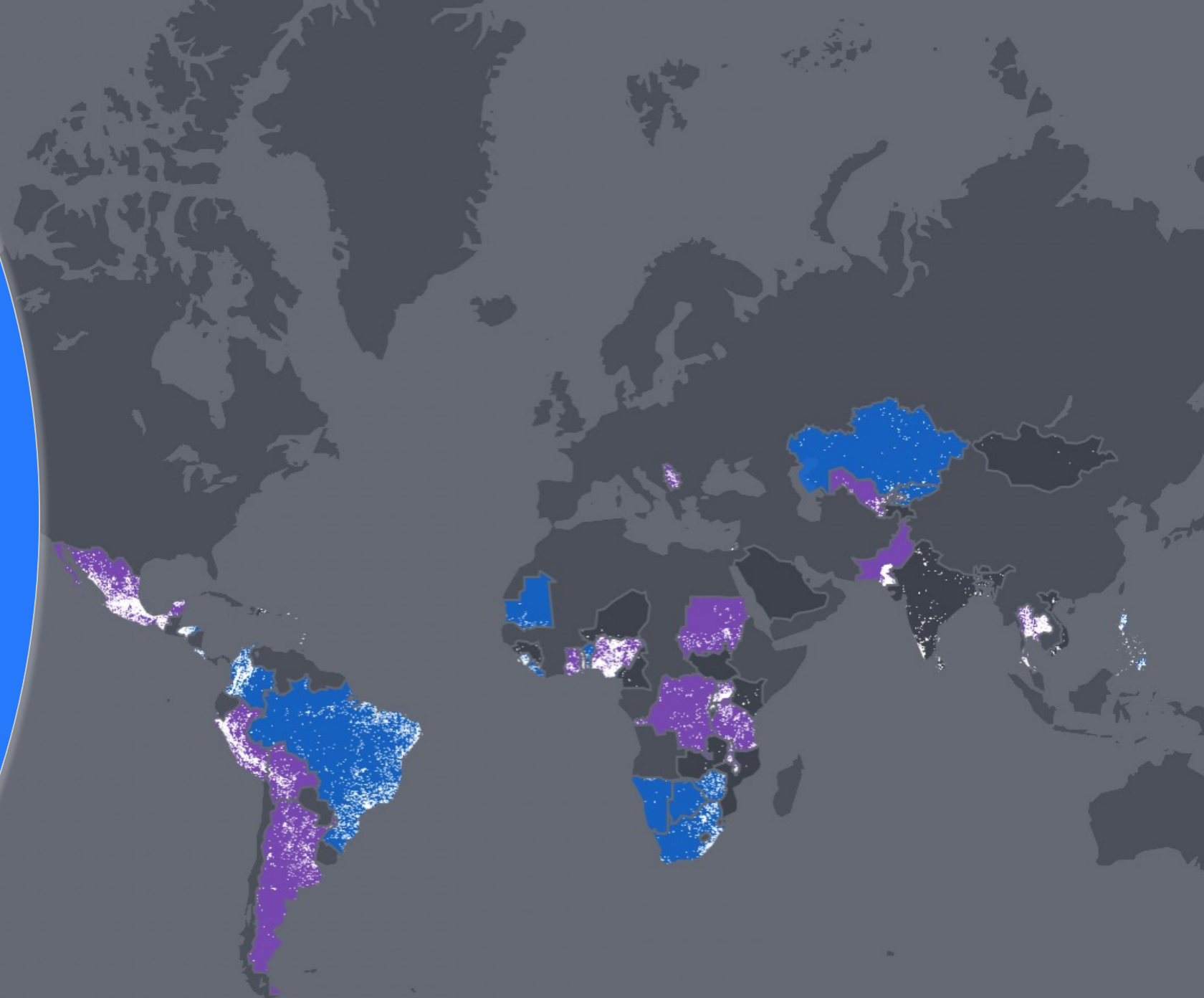
40,000+ schools across 3 countries reporting daily live connectivity data



25 countries reporting quarterly on school connectivity



Infrastructure mapping and analysis completed in 18 countries





Connect highlights



3,200+ schools, ~ 1.1M+ students connected in Africa, Central Asia, Latin America and Eastern Caribbean region



Exploring the potential of a **connectivity credit scheme** to incentivise companies to **extend connectivity** to the poorest and **hardest-to-reach** areas.



Finance highlights



proposing to raise **\$5 billion Giga-sourced capital** to provide the upfront funding needed to accelerate critical infrastructure investments and mobilize public and private capital.



~ **\$4.8 million raised to implement the Accelerate programme** which aims to **test innovative solutions to connect schools** sustainably and **provide insights to fast-track governments' universal connectivity programs.**



Giga has mapped school location and connectivity status with Project Connect in 23 countries in Africa.

GREEN dots – schools with good connectivity

YELLOW dots – schools with moderate connectivity

RED dots – schools with no connectivity

School location + connectivity

School location (processed)

School location (not processed)

Africa

280,000+
schools mapped

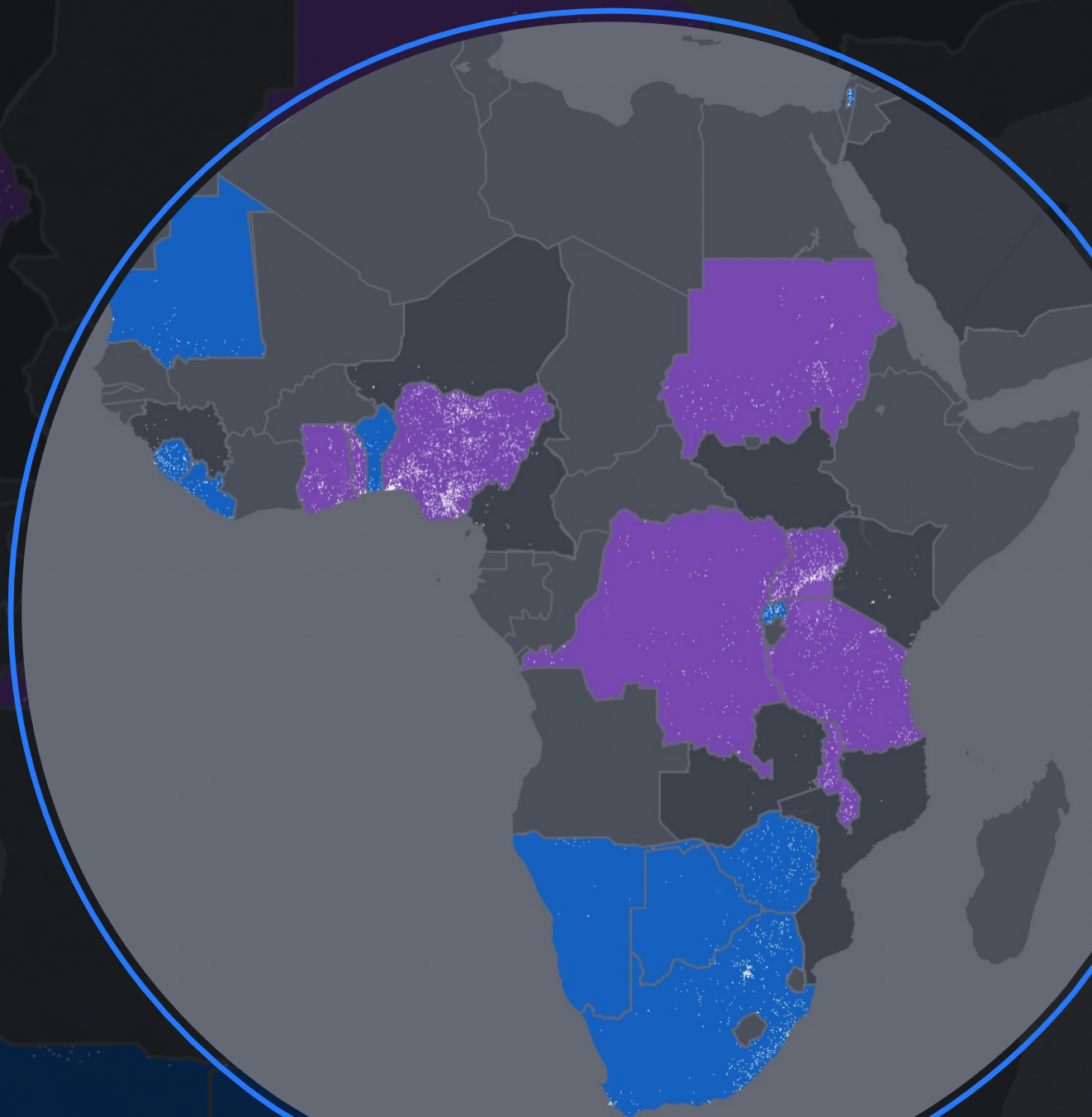
across 23 countries and all viewable
on the Project Connect Platform

1,500+
schools connected

by Giga partners: Kenya, Sierra Leone and
Rwanda

630,000+
students & teachers connected

through Giga and partners'
connectivity initiatives





Kenya: 42,000 students and teachers connected

- In 2021, In collaboration with the Government of Kenya, ITU Regional Office for Africa and UNICEF Kenya, Giga connected **110 schools**, reaching **~42,000 students and teachers** across every geographical region of Kenya.
- These schools were connected to at least 10 Mbps download and 5 Mbps upload to test efficiency and reliability of available technology solutions in the market: **LTE, WiMax, satellite and fiber**.
- **Connectivity helped the schools to make better use of tablets they had received as part of a Government programme**, allowing learners and teachers to access fresh digital content from the Kenya Education Cloud.
- Giga is in the final process to **scale the connectivity work further to an additional 1,050 schools** to generate a blueprint for connecting the remaining 23,000 unconnected schools in the country.

A young boy with short dark hair, wearing a red school uniform with yellow and blue stripes on the sleeves, is smiling and looking at a black tablet computer. He is holding the tablet with both hands. In the background, another person wearing a red and yellow patterned garment is partially visible. The background is a blurred brick wall.

Rwanda: demand aggregation yields lower costs on high connectivity speeds

- In collaboration with the Government of Rwanda, ITU Regional Office for Africa and UNICEF Rwanda, Giga aggregated the demand for connectivity across **63 schools in Rwanda's Eastern Province** and launched a common bid to connect them broadband internet. 13 of the schools are in refugee camps without access to electricity.
- **Through a bid launched in partnership with the government and the UNICEF Country Office, Giga secured a 30% to 55% reduction** in the average price per Mb paid by schools in the procurement process.
- Additionally, the schools are being connected through fixed wireless with minimum speeds of 25 Mbps and up to 150 Mbps—an **improvement of 400% in connectivity speeds** for schools

Sierra Leone: reporting live connectivity status

- In partnership with Measurement Labs, Giga **developed a browser extension that can be installed in schools to measure speed in real-time.**
- Through advocacy led by the UNICEF Country office and ITU Regional Office for Africa, Sierra Leone is **the first country to pilot the connectivity monitoring tool** to monitor the connectivity status for an initial **3% of connected schools**, with data updated every 4 hours on Project Connect
- Together with the UNICEF Country Office and ITU Regional Office for Africa, Giga is also liaising with Internet Service Providers (ISPs) in the country to upload the connectivity speed data of the schools they have connected directly to Project Connect.

Data unavailable

No connectivity

Moderate

Good

A map of Central Asia, including Kazakhstan, Kyrgyzstan, Tajikistan, and Uzbekistan, is shown in a dark grey tone. Overlaid on the map are numerous small dots representing school locations. The dots are color-coded: green for good connectivity, yellow for moderate connectivity, and red for no connectivity. The dots are densely clustered in certain areas, particularly in the northern and eastern parts of the region, while other areas have fewer dots.

Giga has mapped school location and connectivity status with Project Connect in 4 countries in Central Asia.

GREEN dots – schools with good connectivity

YELLOW dots – schools with moderate connectivity

RED dots – schools with no connectivity

School location + connectivity

School location (processed)

School location (not processed)

CENTRAL ASIA

18,000+
schools mapped

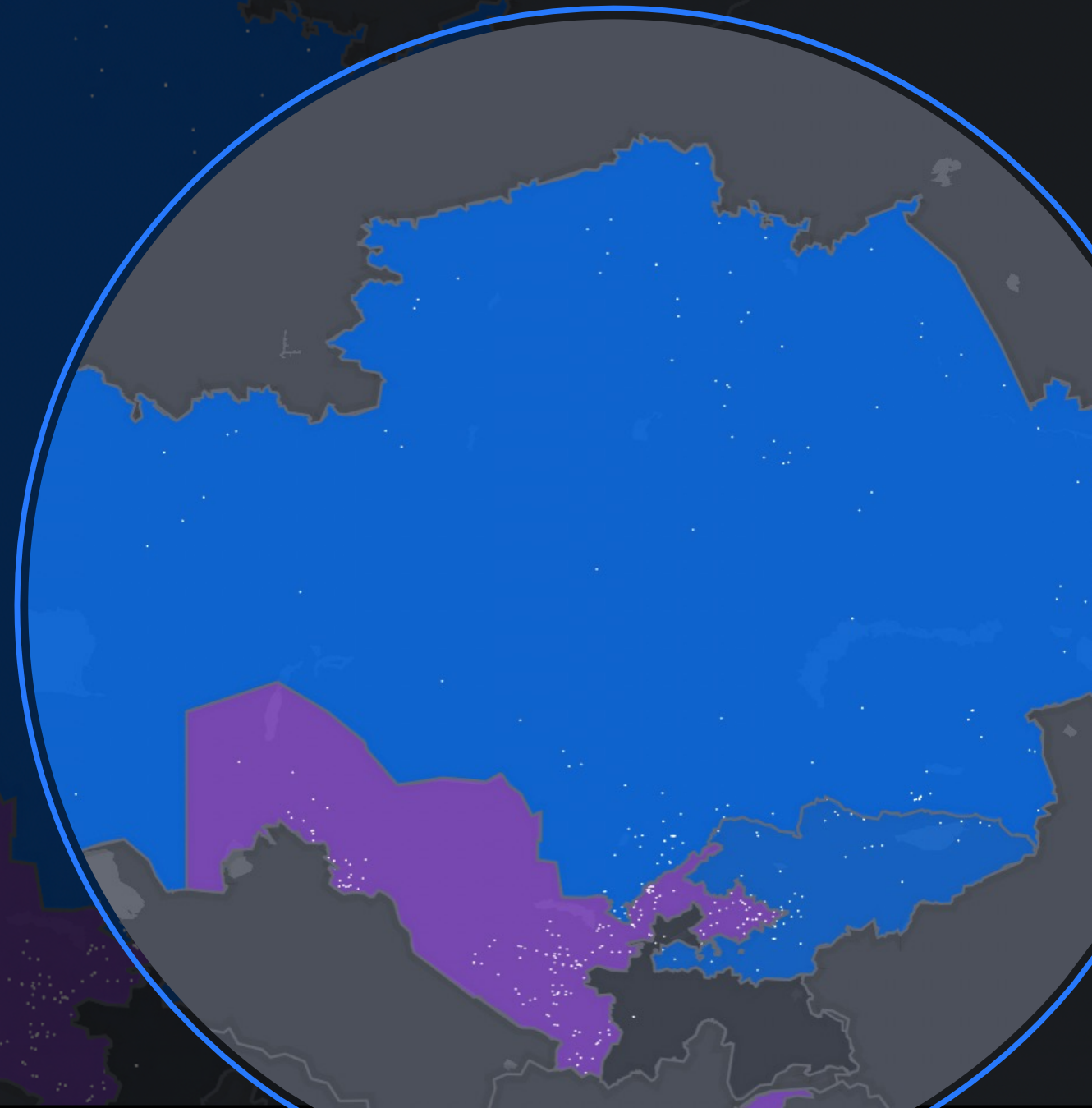
Across 4 countries and all viewable on the Project
Connect Platform

600+
schools connected

by Giga partners in Kazakhstan and Kyrgyzstan

390,000+
students & teachers connected

through Giga and partners'
connectivity initiatives





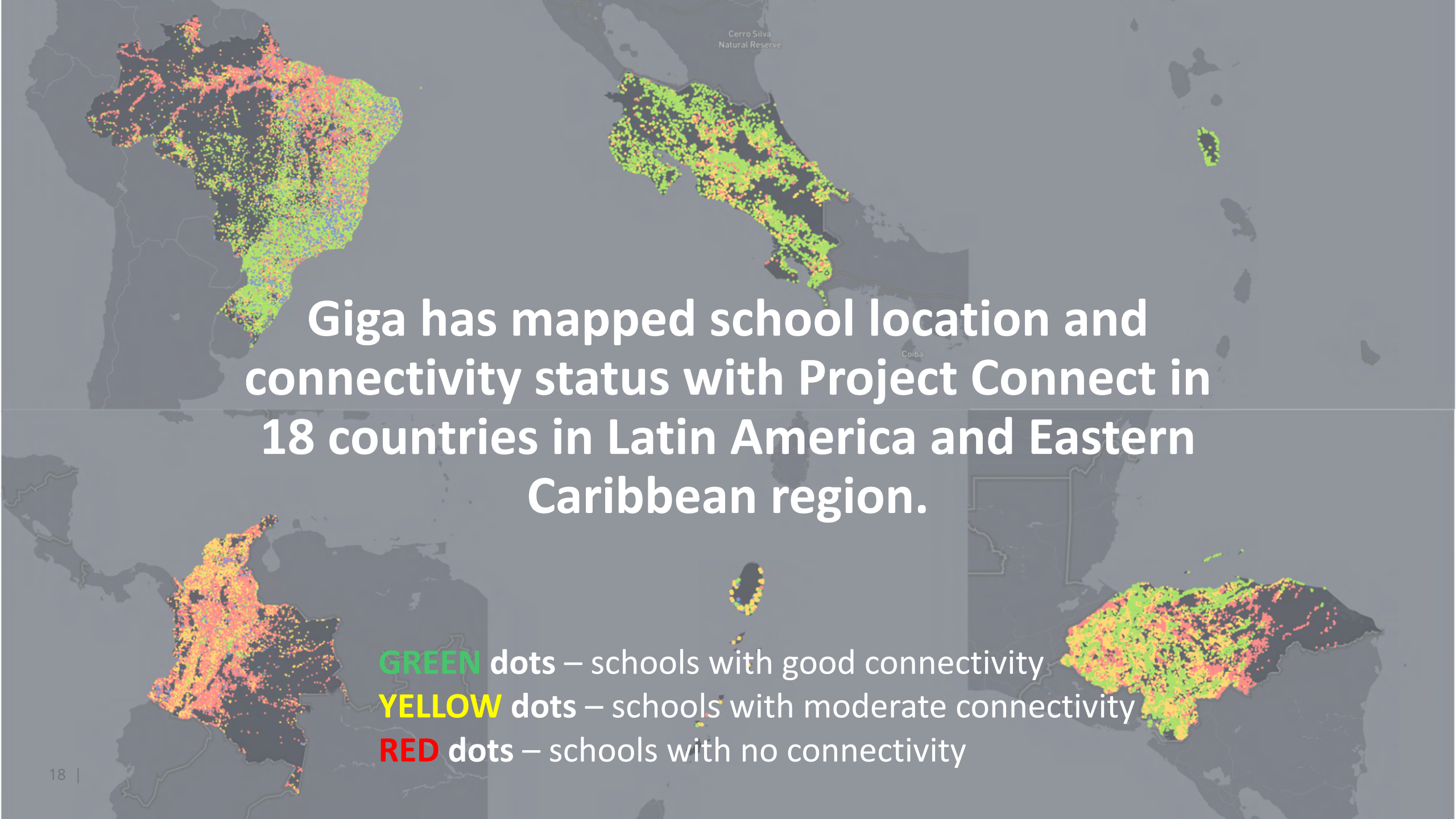
Kazakhstan: 20,000 students connected, and digital skills improved

- **38 rural primary and secondary schools** in the Turkestan region are in the process of being connected to the internet in collaboration with the Government of Kazakhstan, ITU Regional Office for CIS and the UNICEF Country office
- This will lead to **20,000 students** in hard-to-reach areas connected in the country.
- Furthermore, lessons learned from these pilot, led to the local Turkestan government making a formal request for **regulatory changes to ease the process of connecting schools**
- As part of a digital education initiative in collaboration with Astana Hub and International IT University, **teachers** from these schools also under-went a 72-hour online **program** on blended learning to **improve the competences and digital skills of teachers to provide quality educational services.**
- UNICEF Country office **developed a joint plan** with the Information Analytic Center (IAC) **to strengthen the capacity of pre-school and pre-primary levels of education**, monitor and quality assure service delivery and school connectivity to Internet

A young man and woman are sitting at a desk, looking at a computer screen. The man is wearing glasses and a brown jacket, and the woman is wearing a blue jacket. They are both focused on the screen. The background is a plain wall.

Connecting the last 1% of schools in Kyrgyzstan

- **Only 1% of schools in Kyrgyzstan are unconnected.** These schools are in **remote and mountainous regions** and connecting them **requires innovative technologies and financing solutions** to ensure that they are connected to the Internet affordably and sustainably.
- In collaboration with the government of Kyrgyzstan, ITU Regional Office for CIS and the UNICEF Country Office, Giga will **prototype connectivity in the 5 schools with the highest number of students.** Once the connectivity solutions have been implemented, **the lessons and best practices will be collected and used to inform the strategy to connect the remaining unconnected schools in the country** and the implementation of Giga in countries in similar context.

A map of Latin America and the Caribbean region, showing school locations and connectivity status. The map is overlaid with a grid of colored dots representing schools. The dots are color-coded: green for good connectivity, yellow for moderate connectivity, and red for no connectivity. The map covers countries including Brazil, Mexico, Colombia, Venezuela, and the Caribbean islands. The text is centered over the map.

Giga has mapped school location and connectivity status with Project Connect in 18 countries in Latin America and Eastern Caribbean region.

GREEN dots – schools with good connectivity

YELLOW dots – schools with moderate connectivity

RED dots – schools with no connectivity

Latin America & the Organization of Eastern Caribbean States

540,000+
schools mapped

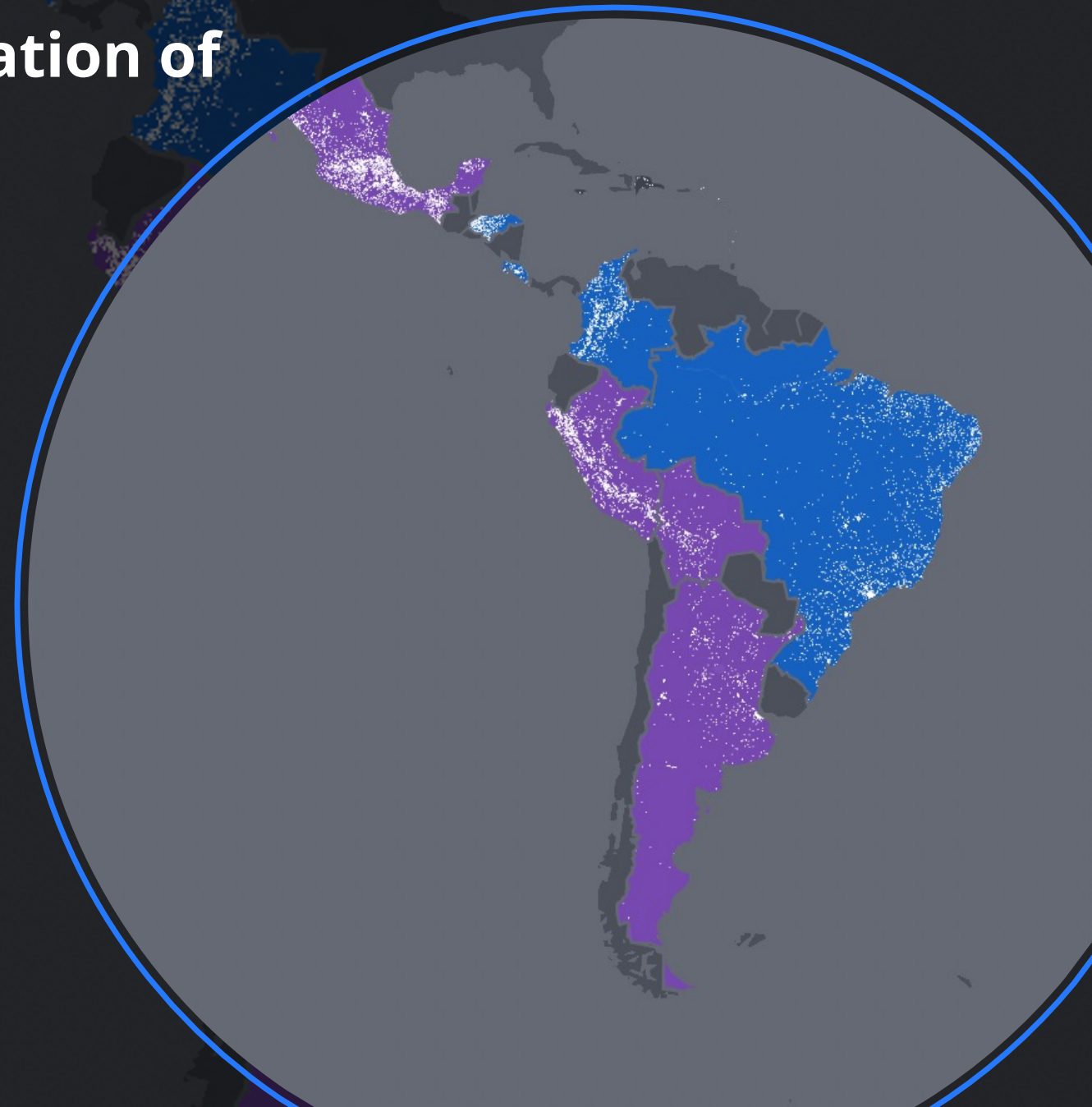
Across 18 countries and all viewable on
the Project Connect Platform


1,000+
schools connected

by Giga partners: El Salvador, Honduras and
OECS

100,000+
students & teachers connected

through Giga and partners'
connectivity initiatives





The Organization of Eastern Caribbean States: Network Resiliency Analysis

- Funded by Connect2Recover, ITU has begun carrying out a **network resiliency analysis** to identify how Giga can **support better network infrastructure to improve the quality of service of connectivity for schools** and expand the connectivity from schools to unconnected communities.
- **The first countries under review are Grenada and Saint Kitts & Nevis.** Preliminary results are expected by Q2 2022.
- Giga is also in the process of **overlaying telecommunications infrastructure data with school location data** to determine how far schools are from existing infrastructure in order **to draw insights about any additional technology and infrastructure needed to improve connectivity.**

Brazil: 45,000+ schools reporting real-time connectivity data

- Through coordinated efforts with the government of Brazil, UNICEF Brazil, Nic.br and Giga, **there are now 45,000+ schools reporting daily live connectivity status**, with data updated every 4 hours on Project Connect.
- 33% of schools reporting live connectivity data **have on average download speeds of 60 Mb/s per month.**
- While most schools report levels of good connectivity, the hardest-to reach remain unconnected. Giga's work in 2022 will involve prototyping ways to connect the remaining unconnected schools through the National connectivity program.
- **In collaboration with UNICEF Brazil, Giga also contributed to discussions that led to the unlocking and approving the use of \$270M from the Universal Service Fund (USF) for connectivity with \$48M specifically set aside for school connectivity.**



Data unavailable

No connectivity

Moderate

Good

School location + connectivity

School location (processed)

School location (not processed)

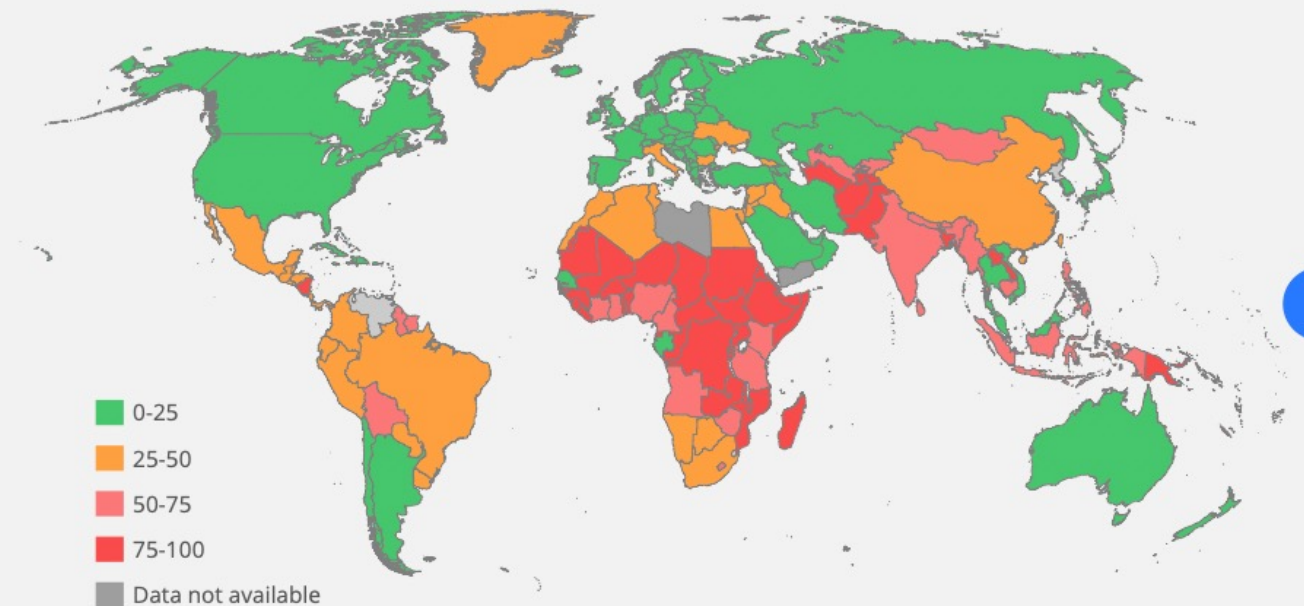
PATHWAY TO SCALING & SUSTAINABILITY

Of the 2.9 billion people who remain offline, 96% live in the developing world

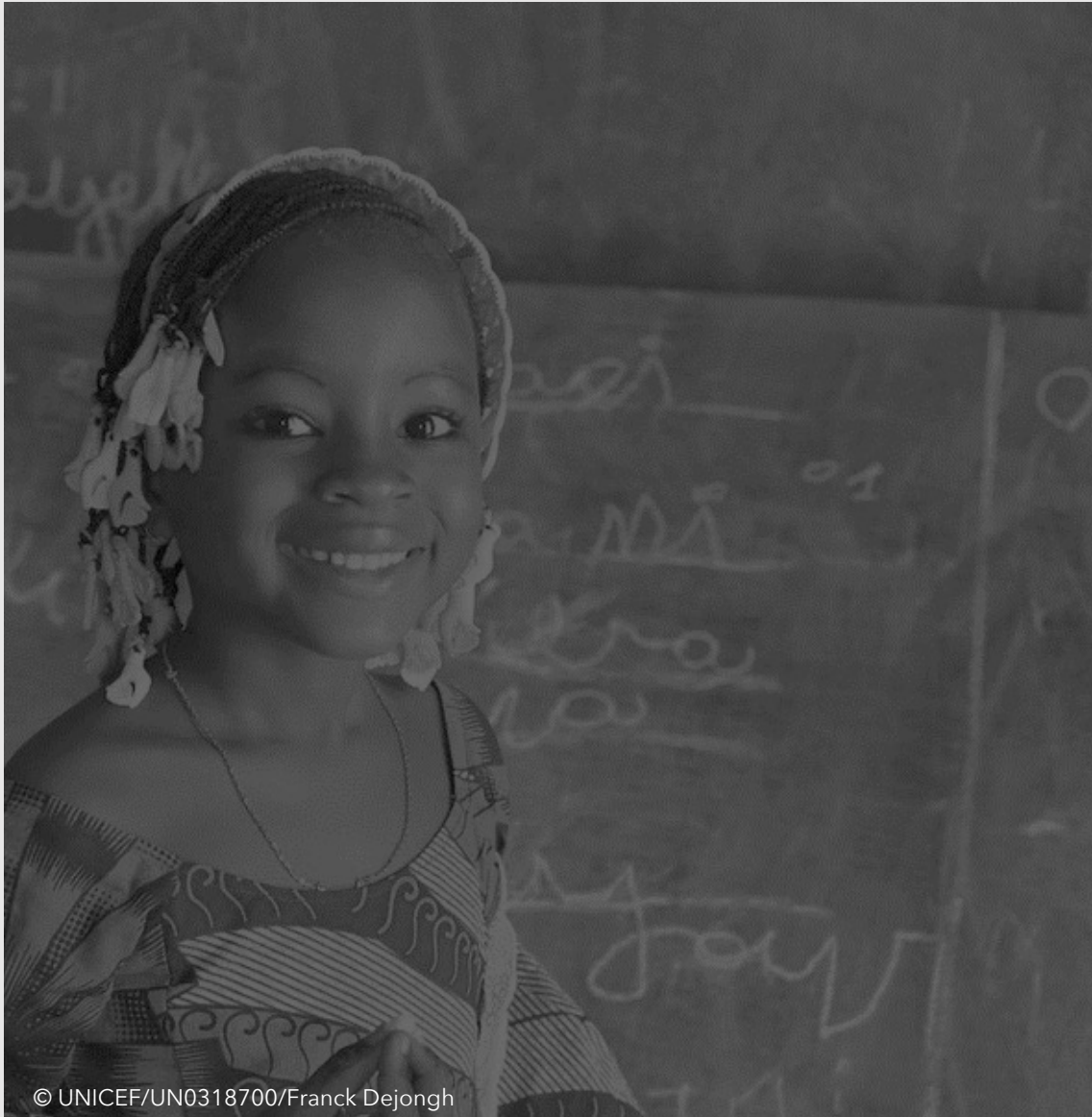
Scaling up to connect the remaining unconnected schools affordably and sustainably requires concerted and innovative efforts to ensure that children are connected and stay online.

Towards this, Giga has explored different strategies and models to prove a business case for school connectivity and can serve as resources for public and private partners.

Percentage of population not using the internet (%)



Source: ITU data, Giga school mapping, BCG analysis
www.gigaconnect.org | info@gigaconnect.org



© UNICEF/UN0318700/Franck Dejongh

Meaningful school connectivity

- In partnership with the Boston Consulting Group (BCG), Giga published the report – **“Meaningful school connectivity: An assessment of sustainable business models.”**
- Using 7 countries (Brazil, Honduras, Indonesia, Kenya, Nigeria, Rwanda and Sierra Leone) as case studies, the report provides **school connectivity operating models**, based on different country typologies, forming a basis **for helping countries achieve universal connectivity**.
- This report serves as a valuable resource for any national or municipal government looking to provide sustainable solutions to connecting schools to the internet. Read the publication [here](#)

Connecting Learners

- A research piece carried out by the Economist Intelligence Unit with the support of Ericsson – a Giga partner - **to assess the potential gains of increased connectivity and access to digital learning in schools.**
- The research found that **for each 1% increase in levels of school connectivity in addition** to policies and programs that link technology with education a **0.11% increase in GDP could be observed.**
- The EIU economic model suggests that some **countries could see increase in GDP of 6-19% if school connectivity increased** to the levels of Finland. Read the publication [here](#).

The
Economist

INTELLIGENCE
UNIT



Connecting learners: Narrowing the educational divide

The benefits from, and barriers to, improved
school connectivity and access to digital learning

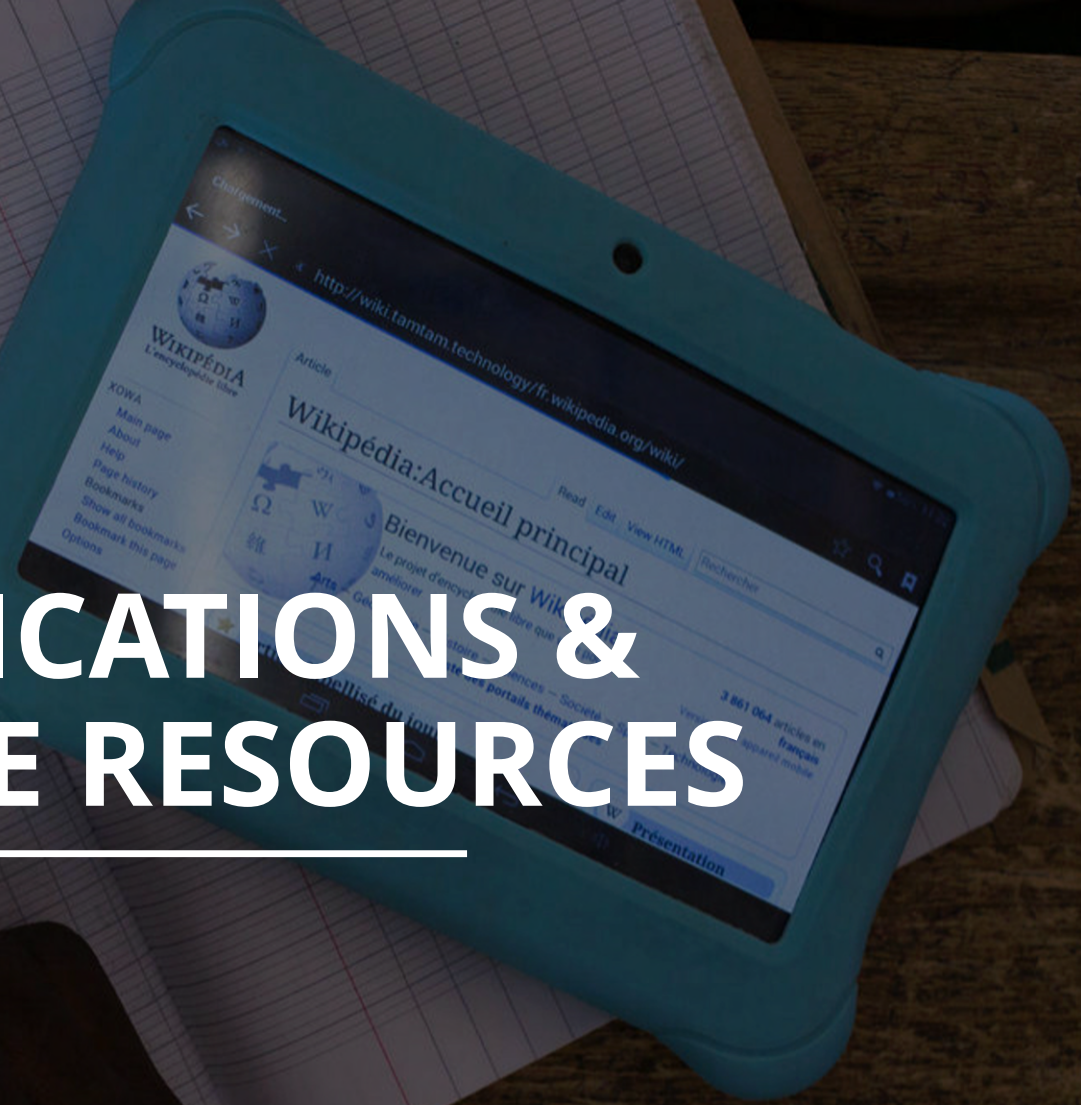
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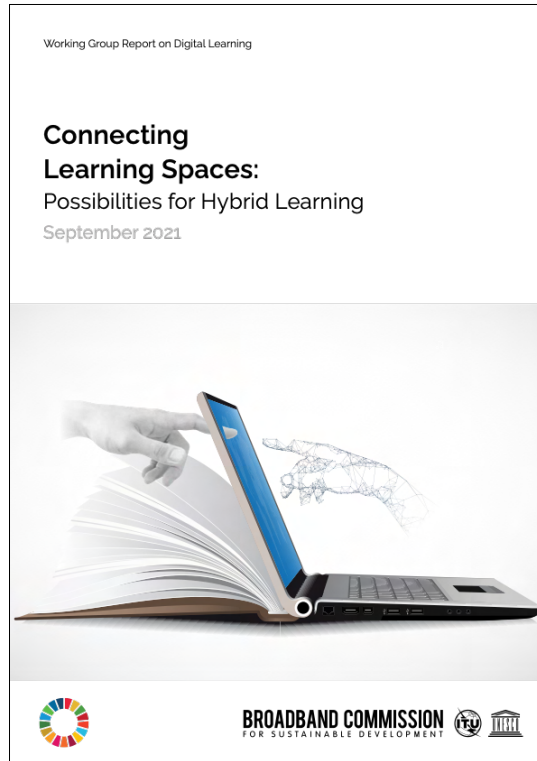
COMMUNICATIONS & KNOWLEDGE RESOURCES



doit bien s'alimenter pour bien maintenir
son corps en bonne santé
3-quest-ce que l'avitaminose?
l'avitaminose est une maladie provoquée
par le manque de vitamines dans l'organisme
4-quelques-uns des maladies liées au
manque de vitamines?
le Kwashiorkor, le marasme, le rachitisme,
le beriberi, etc.

Sciences d'observation
Retenons
la digestion C'est une

Publications



1. Connecting Learning Spaces: Possibilities for Hybrid Learning

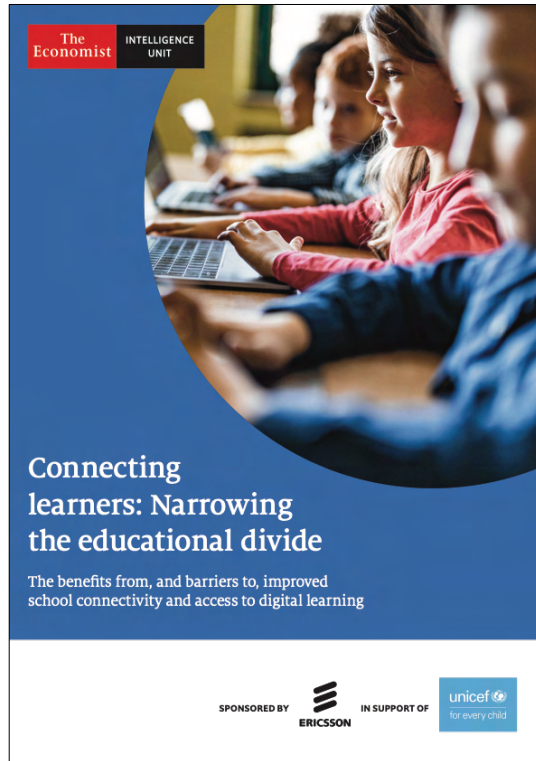
This report by the Broadband Commission examines the range of factors that need to be in place for hybrid learning to be considered by focusing on Infrastructure, Hybrid Learning, Digital Skills and the impact of Frontier Technologies. Read more [here](#).

2. Giga: Empowering communities in Asia and the Pacific through school connectivity

This reports presents the opportunities for implementation of Giga in Asia and the Pacific region. It also highlights the importance of digital skills and the ideal conditions for long-term connectivity in disadvantaged communities and rural and remote regions. Read more [here](#).



Publications



3. Connecting learners: Narrowing the educational divide

This report by the Economist Intelligence Unit focuses on key actions required to bridge the digital divide and ensure an environment that fosters innovation leading to economic development and job creation. Read the publication [here](#).

4. Meaningful school connectivity: An assessment of sustainable business models

This report by the Boston Consulting Group focuses on sustainable business models for infrastructure to reach school connectivity in emerging markets. Read more [here](#).



Publications



5. OECD Case Study: Connecting every school in the world to the internet

This case study by OECD draws on the evidence generated through Giga and shows that sustainable connectivity for schools requires government commitment to enabling strategies, and innovative approaches to mobilise funding among governments and development co-operation actors. Read the case study [here](#)

Events Highlights



RewirEd Summit 2021

At the summit, Giga was featured at the launch of the RewirEd Declaration on Connectivity for Education (read more [here](#)). Giga's Deputy Lead Marija Novkovic participated in the Investors' Round Table where Giga's vision and business model were presented to potential investors/donors.



First Ministerial Roundtable in Africa

Hosted in collaboration by Rwanda and attended by Ministers from Giga countries from the continent including Sierra Leone, Zimbabwe and Kenya. The Ministerial Meeting provided an opportunity to highlight the status of Giga activities, challenges and solutions in Africa. Key commitments include mapping, documenting lessons learned and a roadmap for implementing Giga in Africa.



Web Summit

The [Web Summit](#) included a panel focusing on Giga. Cameroonian footballer and philanthropist, Samuel Eto'o, discussed how school connectivity can have a transformative impact on young people's lives. Giga's Strategy Lead, Sophia Farrar, explained how Giga uses open-source data to identify and secure financial and technical solutions. Watch clips of the discussion [here](#) and [here](#).



Ethereum Community Conference (EthCC)

Giga presented at the EthCC, the largest annual European Ethereum event focused on technology and community. Giga showcased how Ethereum is bringing Internet connectivity to tens of thousands of schools and millions of children and communities around the world.

Events Highlights



UN General Assembly Week

Giga featured in seven separate events during the UN General Assembly week in late September, including the ITU Partner to Connect meeting and the World Economic Forum's Sustainable Development Impact Summit. The UN Secretary General's Annual SDG Moment included a panel on narrowing the digital divide: ITU's Doreen Bogdan-Martin, Rwanda's ICT Minister Paula Ingabire and ACTAI Global CEO Bill Tai spoke about Giga's work. Watch the recording [here](#).



Second Ministerial Roundtable in Africa

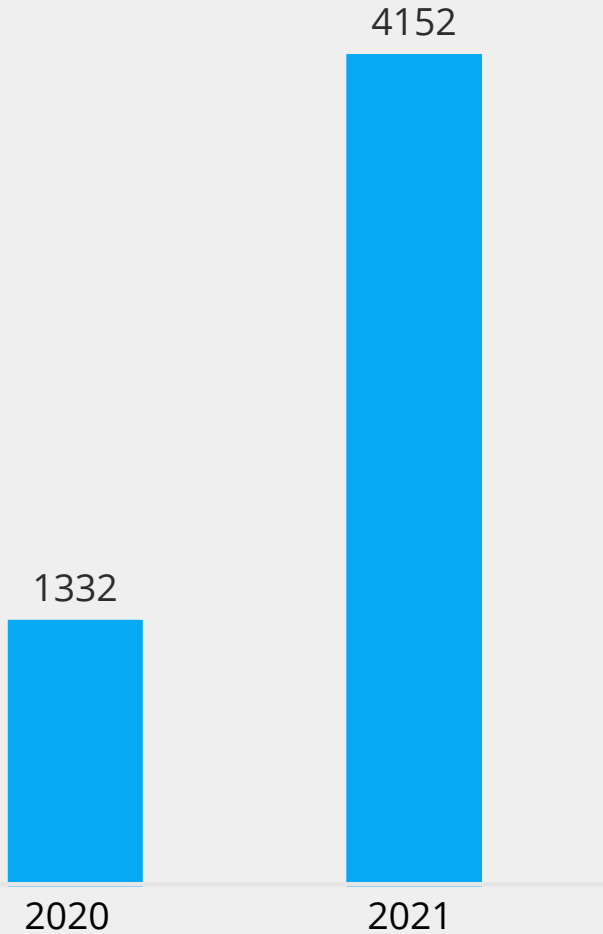
Hosted in collaboration with Rwanda, this ministerial roundtable brought together partner countries and countries interested in implementing Giga. The session focussed mainly on mapping as an integral step in ensuring connectivity in all schools. The session also strengthened cooperation and capacities around school connectivity, as highlighted in the UN Secretary General's Roadmap for Digital Cooperation Action Plan and Common Agenda as a way forward to achieve universal connectivity.

Social Media Growth



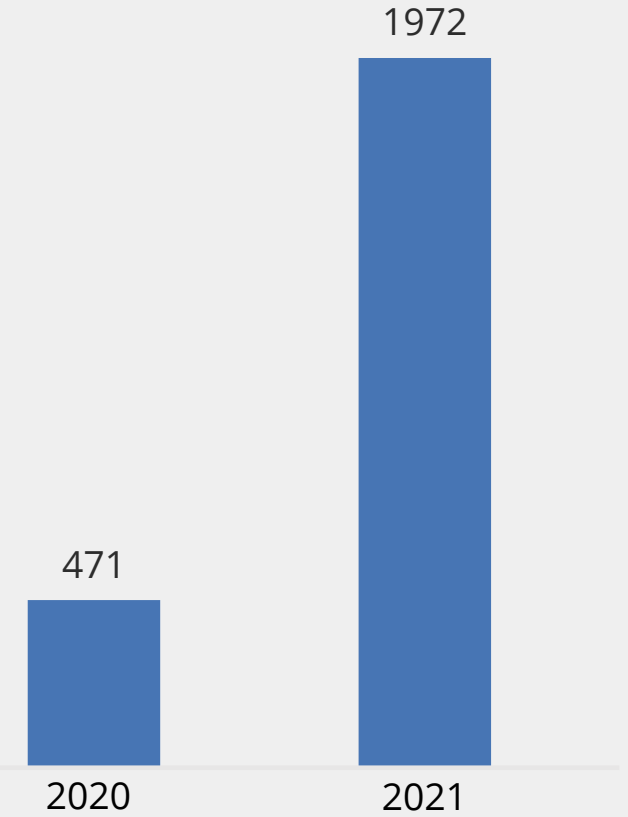
+212%

of followers



+319%

of followers



A photograph of three individuals standing outdoors in a dry, wooded area. On the left is a young boy wearing a blue surgical mask and a grey patterned short-sleeved shirt. In the center is a man wearing glasses, a blue surgical mask with the UNICEF logo, a teal UNICEF vest over a light blue shirt, and a lanyard with a UNICEF ID badge. On the right is a woman with blonde hair wearing a white N95-style mask and a blue and white striped long-sleeved shirt. The background shows sparse trees and a building in the distance.

PARTNERS



MUSK
FOUNDATION



arm

DELLTechnologies



LIQUID
INTELLIGENT TECHNOLOGIES



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