### **Giga | Dec 2023**

# Giga Q&A

[**Giga**](https://giga.global/) **is a UNICEF-ITU global initiative to connect every school to the Internet and every young person to information, opportunity, and choice.**

This document answers questions that we often receive. The questions are grouped under the headings below. Please click on the links to jump to the relevant section.

If you would like to chat with us, please get in touch using the [contact information](#Contacts) at the end of the document. You can also keep up with Giga’s developments by signing up for our [newsletter](https://gigaconnect.us1.list-manage.com/subscribe?u=ad5a5d41f9573f4114f531faa&id=64ba229224) or following us on [Twitter](https://twitter.com/Gigaglobal) and [LinkedIn](https://www.linkedin.com/showcase/gigaglobal). UNICEF colleagues can also join our Giga community on [Yammer](https://web.yammer.com/main/groups/eyJfdHlwZSI6Ikdyb3VwIiwiaWQiOiI3MjUyMjg5MTI2NCJ9/all).

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## What is Giga?

## **[Giga](https://gigaconnect.org/) is a UNICEF-ITU global initiative to connect every school to the Internet and every young person to information, opportunity, and choice.**

1.3 billion children have no access to the Internet at home and only around half of the world’s schools are online. This digital exclusion particularly affects the poorest, girls and those with disabilities; causing learners to miss out on the resources online, the option to learn remotely (e.g. during pandemics or instability), and the opportunity to develop digital skills. UNICEF and ITU have therefore joined forces to create Giga, an initiative to connect every school in the world to the Internet and address this new form of inequality.

What Giga Does

* It **maps** schools’ Internet access. No one knows how many there are in total in the world (estimate: 6-7 million) and Giga’s [Project Connect](https://unicef.sharepoint.com/teams/OOI/DocumentLibrary1/Giga/Comms%20&%20Design/Core%20Documents/projectconnect.world) map provides a real-time display of access and need for funders, governments, and accountability. Giga has mapped over 2 million schools in 140 countries.
* It creates models for innovative **financing.** It could cost $428 billion or more to connect every school. Giga aims to mobilise $5 billion to catalyse investment in connectivity infrastructure. Giga has secured the support of over 14 partners to develop solutions for affordable, sustainable connectivity.
* It supports governments **contracting** for connectivity. Giga helps governments design the regulatory frameworks and competitive procurement processes needed to get schools online. Since 2019, Giga and its partners have connected over 2.4 million students in close to 6,000 schools.

지도이(가) 표시된 사진

자동 생성된 설명

Giga is already connecting schools in 21 countries and is prototyping several test solutions, including in refugee camps and remote, mountainous regions. Many of these solutions use advanced open-source technology: satellite data to find schools; machine learning to understand how connected they are; and blockchain to track their connectivity over time, and in some cases facilitate payments. The lessons from these prototypes will help lower risks for investors and support national rollouts.

Giga’s achievements since its launch in 2019

|  |  |  |
| --- | --- | --- |
| **—**  **2,100,000+**  **Schools mapped**  Across 49 countries and all viewable on the Project Connect Platform | **—**  **5,800+**  **Schools connected**  in Kenya, Sierra Leone, Rwanda,  Botswana, Kazakhstan, Kyrgyzstan,  Honduras and the OECS | **—**  **2,400,000+**  **Students connected**  Through Giga and partners’ connectivity initiatives |
| **—**  **$1.7B+**  **Funding mobilized**  To countries and UNICEF Country Offices to accelerate connectivity | **—**  **30**  **Countries joined**  In Sub-Saharan Africa, Central Asia and Latin America & the Caribbean | **—**  **14+**  **Partners joined**  Ericsson, Dubai Cares, Musk Foundation, IHS Towers, Dell, SoftBank, BCG, NIC.br, Actual, Jumia, Liquid, GSMA, FCDO, Mapbox |

Giga also uses schools as anchor points for their surrounding communities: if you connect the school, you can also connect local businesses and services. This creates opportunities for service providers to generate revenue from paying users, making connectivity more sustainable. A recent [report](https://connectinglearners.economist.com/connecting-learners/) by the Economist Intelligence Unit found some countries could see a boost of up to 19% to GDP if they increased schools connectivity to Finland levels.

Giga’s work in laying the tracks for connectivity is only one part of a wider effort to bridge the digital divide. Giga therefore works with a range of initiatives in UNICEF, ITU and beyond to ensure that students and teachers can access the skills, devices and content they need to make full use of connectivity.

To help deliver on its ambition, Giga needs:

* both governments and companies to **share data sets** to help with open-source mapping;
* governments to join the 30 countries already connecting schools as part of the Giga project and to work with Giga to implement the **regulatory changes** needed to allow universal connectivity and infrastructure innovations to thrive; and
* donor governments and foundations to help raise **catalytic investment** to help accelerate the process of bringing schools online.

## Where is Giga active today?

Giga is being implemented in varying degrees in the countries and territories below. Discussions are also underway with several other countries interested in joining the initiative.

**List of 30 Giga Countries**

|  |  |
| --- | --- |
| 1. Anguilla 2. Antigua & Barbuda 3. Barbados 4. Belize 5. Benin 6. Botswana 7. Brazil 8. British Virgin Islands 9. Dominica 10. Dominican Republic 11. El Salvador 12. Grenada 13. Guinea 14. Honduras 15. Kazakhstan | 1. Kenya 2. Kyrgyzstan 3. Mongolia 4. Montserrat 5. Namibia 6. Niger 7. Rwanda 8. Saint Vincent and the Grenadines 9. Sierra Leone 10. South Africa 11. St. Kitts And Nevis 12. St. Lucia 13. Trinidad & Tobago 14. Uzbekistan 15. Zimbabwe |

## How can countries join Giga?

Any country can join Giga. We would be happy to support the roll out of school connectivity but the national government needs to be willing to meet the following obligations and commitments:

* 1. **Political support** at the highest level and intersectoral coordination between relevant agencies and ministries.
  2. Supportive **national broadband and digital education policies** that encourage the development of broadband infrastructure, school connectivity and a policy or strategy in digital education promoting digital capacities for all.
  3. Creating a **conducive regulatory environment** for the development of reliable, quality, technologically-neutral networks, which promotes healthy competition in ICT markets, easier market access for national and foreign players and tax incentives.
  4. **Access to school location data** and classes (number of students, etc.), as well as in infrastructure, projects and network coverage. Agreement to make this data open source and publicly available.
  5. **Openness to different types of investments and financing models** to establish public and private partnerships that contribute financially, in particular through the Universal Service Financing mechanisms or other dedicated funds.
  6. Support **equitable access to connectivity for all**, with special attention to ensure access for those potentially excluded including those in rural or underserved areas, women and girls, individuals with disabilities and other marginalised groups.

## What makes Giga different from other connectivity initiatives?

## **Laser Focus on Schools**: Giga uses schools as an entry point for planning infrastructure. Connecting schools provides the last mile for adjacent communities and the rest of the world to be connected.

## **Daily Mapping**: Comprehensive, daily mapping of school locations and connectivity levels ensures no schools are left behind: “you can’t fix what you can’t see”.

## **Capital Mobilization**: Extensive daily mapping capability enables the construction of investment packages aligned with different risk appetite profiles and investor pockets. UNICEF’s brand and successful track-record of executing large projects and ITU’s technical expertise in connectivity solution development and implementation inspires confidence amongst investors.

## **Connect-Payment Link**: Daily data enables the articulation of a procurement strategy, accountability and transparency. Generates ability to link government budgets to ISP performance - “dynamic pricing”.

## **UN Agency Expertise**: UNICEF’s expertise in procurement and education; ITU’s experience with local national regulators and ICT policy. Fully backed by the UN Secretary General and unique as the only “named initiative” for connectivity in his Roadmap for Digital Cooperation.

## How has Giga helped specific countries so far?

Giga has helped the Government of **Kyrgyzstan** to generate $200k savings per year (40% of its education connectivity budget). By seeing all the schools on a map and their corresponding connectivity, the Government was able to renegotiate contracts and subsequently reduce prices by almost half (from $50/month to $28.5/month) and to almost double speeds (from 2Mbps to 4Mbps).

In **Niger**, Giga developed an algorithm to approximate the location of unmapped schools based on other available data. The algorithm estimated the location of 4,758 previously unmapped schools and overlaid this with electricity data to show where schools had access. In Niamey, we successfully used very high-resolution stereo imagery to calculate building heights, providing important information for infrastructure installation planning.

In **Sierra Leone** we worked with the government to map distance from communities to schools and to connectivity and use this to map out-of-school children as well as to identify factors (availability of basic infrastructure at schools, learning materials, teacher training) that impact learning outcomes the most.

In **Colombia** we applied artificial intelligence techniques to automatically map schools from satellite imagery and provide the government the location of 7,000 schools that were not part of their official datasets.

## In **Rwanda**, Giga investment in schools-level infrastructure and internet services attracted a private internet service provider to further invest in innovative core broadband infrastructure (Fixed wireless) to reach remote schools with high-speed internet, by procuring connectivity through a common bid. Led to up to 55% reduction in the average price per Mbps for schools (from average of 20USD to between 9 and 14USD per Mbps).

## Why mapping?

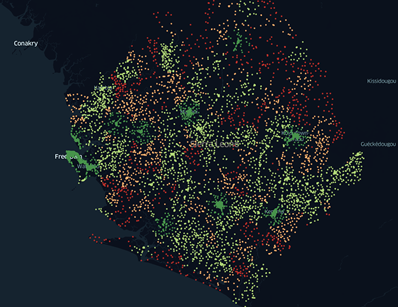
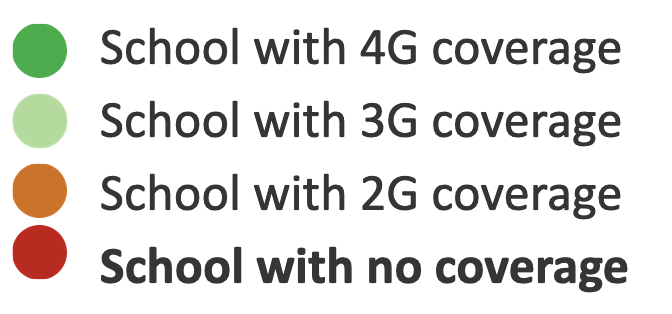
**Mapping shows where resources are needed**. Many governments do not know where all of the schools in their countries are. Without that information, they – and other nongovernmental organizations – cannot effectively provide services or deliver resources to children and their communities. During emergencies, this information can also guide response efforts by informing how to deliver critical information and other supplies.

**It shows where there is internet and if it is reliable**. Many governments and organizations are committed to connecting schools to the internet, but do not yet have the ability to monitor whether schools are actually connected and whether connections are of good quality.

**It improves access to data for good**. It has been proven that availability and quality of data is considerably higher for wealthier regions. This data inequity leads to disparities in resource allocation, where vulnerable populations are left behind.

**It highlights gaps in infrastructure**. Without knowing where connectivity needs to be extended, governments and investors don’t know how much it will cost, making it more difficult and riskier to finance.

**It establishes market demand**. Because internet service providers cannot measure the size of potential new customers, they struggle to make a case for bringing infrastructure to remote areas. This results in limited investment and increased prices.



*Map of schools in Sierra Leone colored based on their connectivity level*

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## What is the daily connectivity browser extension?

## Giga uses a browser extension, developed by [M-Lab](https://www.measurementlab.net/), to monitor connectivity quality in schools. The daily updates improve accountability, validate data, helps identify gaps between supply and demand and allows governments to negotiate price reductions when agreed standards of service are not met.

For advice on installing and using the extension, please contact the [Giga team](#Contacts).

## What about data sharing and data privacy?

Our school mapping work is guided by the core belief that data is a public good. In line with UNICEF’s [Strategic Framework for Data for Children](https://data.unicef.org/resources/data-children-strategic-framework/), we believe that smart demand, supply and use of data drives better results for children. Data has the potential to improve the delivery of critical services and resources for children and their communities. In many cases, these services are found in and provided by schools.

Giga has developed a data sharing framework centered around three core principles:

* **Public data gathered with public money creates public goods.** Digital cooperation is a key enabler of Giga’s mission and is reflected in the priorities of many organizations, including the recommendations of the [Secretary General’s High-Level Panel on Digital Cooperation](https://www.un.org/en/digital-cooperation-panel/).
* **School location data is a public good**. The ability to know where education and other foundational resources can be found is a public good, similar to any health center or government building. In most places where data exists, school locations are already shared publicly on sites like Google Maps, 2GIS, and OpenStreetMaps.
* **Child protection should always be prioritized.** Giga adheres to UNICEF’s Child Data Protection Policies and follows the [Principles of Responsible Data for Children](https://rd4c.org/). Our maps aim to provide information that can have a positive impact without putting children at risk.

We have developed a data sharing framework to make sure that the broader connectivity community can benefit from the data, giving priority to child protection and data privacy. We will also continuously explore synergies across programmes, such as Social Policy for example, on a case-by-case basis.

## How will public investment impact private sector investment in connectivity?

Private sector investment in connectivity is often discouraged due to the high upfront cost of infrastructure and the risk that revenue streams from newly connected regions will not justify the investment. Giga directs public funding in ways that reduce those inhibitors, thereby creating more interesting opportunities for private sector investment. By removing barriers to entry, Giga aims to increase competition and drive down prices so that connectivity access is more affordable and equitable. Examples of this includes subsidizing capex, making advance market commitments or subsidizing service fees for consumers.

Will schools that are connected to the internet through the Giga Initiative be required to pay for their internet?

Payments are negotiated in each country, according to the local context. This is often, but not exclusively, through the Ministry of Education and existing channels. Giga is also exploring business models to enable schools to generate revenue / offset operation costs to pay for connectivity sustainably.

## Is this school-based only, or can it be envisioned as community-based? Can the focus be on “school community connectivity”?

We identified, and have been using, the school as a “point” for counting aggregate demand. This helps us pool and aggregate financing for public connectivity. The school becomes an anchor to connect its entire surrounding community, including other facilities (health centers, youth centers, etc.). In a sense, we are using the school as a concrete target, a single, countable unit, into which many efforts can direct laser focus.

Giga uses schools to identify demand for connectivity (the number of students in a school tells us about the number of people in a community and that tells us about how much demand there might be). Schools are also hubs for learning and connecting, where the community can come together and support its next generation.

## Does Giga provide support for hardware, electricity, and service fees?

Giga evaluates the primary barriers to connectivity in each unique context and works with the country government, private sector and other stakeholders to bridge the gap. This includes ensuring that connected schools have the required electricity, as well as putting in place sustainable operating models that can manage service fees into the future.

Giga can support country governments and schools to evaluate hardware options (e.g. devices) and incorporate the cost of that technology when budgeting projects. However, Giga does not pay for devices itself.

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## What is Accelerate?

Accelerate is Giga’s exploratory arm to test solutions and provide insights to fast-track governments’ universal connectivity programs. Through Accelerate, Giga is exploring diverse technologies, business models and regulatory arrangements to provide broadband connectivity to schools and communities.

Areas of exploration include:

* Using real-time monitoring of connectivity for transparency and accountability
* Connecting schools in rural, remote, and challenging environments
* Improving quality of service, where connectivity currently exists
* Ensuring schools can pay for connectivity services over time
* Using the school as a hub to extend connectivity and service to the entire community

Accelerate is currently running projects in Kenya, Rwanda, Sierra Leone, Kazakhstan, Kyrgyzstan, Uzbekistan, Brazil, El Salvador, Honduras, the Organisation of Eastern Caribbean States and Indonesia.

## Will Giga deploy the digital solutions and develop skills once there’s connectivity?

We can provide connections to partners, resources, capacity building and financing to scale learning solutions. This includes Reimagine Education and ITU programmes such as “Boosting decent jobs and enhancing skills for youth in Africa's digital economy”. Generation Unlimited develops and deploys digital skilling opportunities for young people for employment, entrepreneurship and social impact. It recently established a Passport to Earning (P2E), intended to be the world’s largest open-source skilling platform, and a Youth Agency Market (YOMA).

In partnership with the [Digital Public Goods Alliance](https://digitalpublicgoods.net/), we can help identify and scale digital and open-source solutions.

## How does Giga collaborate with other initiatives?

Giga collaborates closely with global actors that are also working to ensure meaningful connectivity:

* Giga contributes to UNICEF’s [**Reimagine Education**](https://www.unicef.org/reimagine/education)initiative aiming to radically scale up digital learning solutions for the most marginalized children and young people.
* Giga works closely with [**Generation Unlimited**](https://www.generationunlimited.org/), a global multi-sector youth partnership which collaborates with Reimagine Education, to ensure that the largest generation of young people in history is prepared for the transition to work and for engaged citizenship. One way in which this is accomplished is by radically scaling up digital learning solutions for the most marginalized children and young people. Generation Unlimited has played a pivotal role in bringing partners such as Dubai Cares and Ericsson onboard with Giga.
* It also links to [**Generation Connect**](https://www.itu.int/generationconnect/), an ITU-led initiative to engage global youth as equal partners of today's digital change.
* The [**Digital Public Goods Alliance**](https://digitalpublicgoods.net/) is a critical partner in developing and scaling the Open Source digital solutions that can be used once connectivity is established.
* Giga is not only noted as a way to implement the [**UN Secretary-General's Roadmap for Digital Cooperation**](https://www.un.org/en/content/digital-cooperation-roadmap/), we also work with all the stakeholders involved in advancing the eight action areas identified and a safer, more equitable digital world.
* The [**Broadband Commission for Sustainable Development**](https://broadbandcommission.org/Pages/default.aspx) offers another platform for Giga through the working groups on School Connectivity and Digital Learning.

## Where can I find more in-depth studies and resources?

Below is a list of significant reports relating to Giga’s work:

* [The Digital Transformation of Education: Connecting Schools, Empowering Learners](https://broadbandcommission.org/Documents/working-groups/SchoolConnectivity_report.pdf). Broadband Commission
* [How many children and young people have internet access at home?](https://data.unicef.org/resources/children-and-young-people-internet-access-at-home-during-covid19/) UNICEF, ITU, Generation Unlimited.
* [Connecting Learners: Narrowing the educational divide](https://gigaconnect.us1.list-manage.com/track/click?u=ad5a5d41f9573f4114f531faa&id=c2beb20b12&e=1ef0047d98). Economist Intelligence Unit, sponsored by Ericsson in support of UNICEF.
* [Giga: Empowering communities in Asia and the Pacific through school connectivity](https://gigaconnect.us1.list-manage.com/track/click?u=ad5a5d41f9573f4114f531faa&id=a59eeda265&e=a13c76bca5). ITU in partnership with UNICEF and Giga.

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# Annex: for UNICEF Country Offices and ITU Regional Offices

## What can Giga add, if we already have some existing efforts across education, youth skills and/or connectivity?

Through strategic partnerships with government(s) and private sector, Giga can provide:

* Country plans with and for every government
* Support for COVID-19 response, with connectivity and links to partners offering remote learning solutions
* Research to develop financial models that fund connectivity
* Collaboration with the Broadband Commission Working Group on School Connectivity

Giga can layer public and private money (similar to Gavi) by convening partners and:

* Designing ways of using national budgets (Education, Health)
* Creating or expanding USFs
* Assembling pools of donors and investors

Giga can offer regulatory and network/digital infrastructure expertise, including:

* Advice on regulatory frameworks fostering an enabling ICT environment
* Products, services and expertise on telecommunication/ICT networks and digital infrastructure
* Holistic and scalable strategies and services to empower digital societies

We can also offer support on the following, ensuring we focus on the child (digital skills & education):

* Government programs to connect schools
* Infrastructure programs
* Connecting to partners that provide education solutions (remote learning, teaching training etc.)

## How do we initiate the process at country level?

Giga always starts with country engagement and data collection. Therefore, it is helpful if COs or regional offices can gather information to help initiate discussions with the government and lay the groundwork for a formal agreement on the Giga work plan. Similarly, it is helpful if you can assess the availability of school location and connectivity data and initiate the process to share that with our Mapping team. These initial pieces of work are needed to proceed with conversations about financing connectivity.

We have developed an 11-step approach to implementation (the steps can be completed concurrently). To get started with us on these steps, you can reach out to anyone on the [Giga team](#Contacts).

1. Structure a Giga-specific partnership with **country leadership**
2. Form a **multi-stakeholder partnership coalition** around country workplan
3. Develop a foundation of **data** to identify need and **size of the investment opportunity**
4. Build on existing country plans and policies by gathering data on **economic, political, and regulatory landscape**
5. Evaluate regulatory barriers and identify potential **levers**
6. Survey the **market conditions for implementation** (ISPs, MNOs, NRENs)
7. Secure public and catalytic financing to **de-risk private investment**
8. Form a bloc of **private funders** and **implementation companies**
9. Advise government on **procurement structure**
10. Support government(s) to roll out **procurement procedures**
11. Create **sustainable business model** - including **monitoring**

In contexts where purchasing power is weak and investment is limited, there may be a need for a lot more public money/grant money than the institutional/investment financing. The Giga team will collaborate with individual countries to fully incorporate contextual needs and collaborate on customized steps toward connectivity.

## What are the mapping data points that we are looking for?

We are mostly interested in the indicators below - however, any information related to schools is useful.

1. School name
2. Geolocation of school (latitude, longitude)
3. Availability of Internet connectivity (Yes/No)
4. Availability of electricity (Yes/No)
5. Speed of Internet connectivity (Mbps)
6. Type of Internet connectivity (i.e. wireless, fiber, satellite)
7. Periodical updates of que QoS of Internet connectivity (upload/download speed, latency)
8. Any additional indicators (number of students, number of teachers)

A School Data Schema sheet with sample data and a data dictionary can be found [here](https://unicef.sharepoint.com/:x:/t/OOI/Ea4mcxrZRSlMlrf8JT_hPGoBxy5m6kimaC4_WFJmvjzgZw).

## Will Giga help COs and regional offices fund and staff the project?

Giga has some limited funds available for specific innovative explorations. But we mainly act as a convener between diverse funding opportunities and connectivity projects for schools in disconnected areas.

The global Giga team can provide guidance and some technical support to COs and regional offices but we recommend that the most active offices consider hiring a Giga focal point to coordinate work in your country/region. We can offer advice on preparing ToRs and on the recruitment process.

We also:

* help to increase transparency through clear target-setting and timeline management;
* provide grants and technical advisory services to help governments in project preparation;
* enable relevant regulation, and establish and share best practices in mapping connectivity demand, identification of funding, project preparation, project delivery, and post-delivery service adoption and empowerment.

## Is the UNICEF CO the project lead in each country?

In each country, the initiative is led by the UNICEF Representative along with an ITU Representative. Within the UNICEF Country Office, we work closely with technical and programme teams, such as colleagues across ICTD and Education programmes.

Are we expecting the role of the government to focus on endorsement only or financial commitments as well?

The role of the government is crucial. We expect both endorsement and financial commitments. For example, most governments have Universal Service Financing mechanisms, which we could explore how to use more efficiently and target to connect schools. The government must be willing to commit their budgetary resources to connectivity for us to bring additional players like development banks and private investors.