



## Outcome report: Learning in a post-covid world: How can emerging technologies help achieve universal access to quality education?

**Session 4, Friday, 9 July 2021** (14:00 – 15:00 Geneva time). 60 minutes.

**Moderator:** Ms. Gisa Lematua Gisa Fuatai Purcell,

**Speakers:**

- Mr. Sameer Sharma. Senior Advisor, ITU
- Ms. Shilpa Arora, Data Scientist, Office of Global Innovation, UNICEF
- Mr. Shivnesh Prasad. Digital Development Specialist, World Bank
- Mr. Albie Bester, Market Development Manager – Networks, Intelsat
- Mr. Maikel Wilms. Partner & Director, Telecommunications, BCG

**Total number of participants:** 111 participants

### 1. Session summary :

This session aimed to:

- Raise awareness about [Connect2Recover](#) and [Giga](#), as powerful initiatives in developing resilient digital infrastructure post-Covid for education, health and job creation;
- Provide the platform to share insights and concrete examples where emerging technologies such as Artificial Intelligence (AI), Machine Learning (ML), Big Data and Satellite Imagery are being used to help governments map and connect schools to the Internet with the objective to not leave any student behind in the post-Covid era; and
- Share challenges, opportunities and lessons learned from selected LDCs, LLDCs and SIDs as well as their experiences in using emerging technologies to address educational challenges in a post-Covid world.

### 2. Main outcomes highlighting the following:

#### a. Main topics discussed

- Building back better with broadband (Connect2Recover);
- Technologies to map schools and their connectivity (Giga);
- Emerging mobile technologies to facilitate transformation in Pacific Islands;
- Connecting the Unconnected: Satellite Enabled Rural Connectivity; and
- Country operating models for school connectivity.

#### b. Key points highlighted by the panellists

##### **Introduction:**

COVID-19 has caused an unprecedented disruption in countries around the world and this has highlighted the urgency for universal digital connectivity, especially in the area of quality

education. Countries were impacted in three main areas, namely in the area of education (2.2 billion children remain unconnected), jobs (114 million of unemployment) and healthcare (165 million COVID-19 cases and over 3.4 million of deaths).

Econometric studies have recognised that fixed broadband had a higher economic impact for developed countries. However, in countries with low fixed broadband penetration, mobile broadband has taken over in becoming the pre-eminent technology driving the economic growth in those countries.

Despite the potential provided by broadband technology, two issues remain. Firstly, broadband data is generally **incomplete** and the quality of broadband data is worse in places where it is needed the most. Secondly, countries cannot be considered as resilient when significant portions of its population cannot access Internet at home.

### **ITU's Connect2Recover and Giga initiatives:**

The ITU is in a unique position to reinforce and strengthen the digital infrastructure and digital ecosystems of beneficiary countries as they adjust in the wake of COVID-19 through the Connect2Recover initiative. Through a 5-phase approach, the ITU can convene various stakeholders to develop new data collection methodologies and visualizations (ie. Coverage maps), conduct digital and Internet resilience assessment, help countries to implement ICT strategies to ensure that the digital infrastructure and ecosystem are resilient to support recovery efforts, carry out pilot projects or undertake detailed studies in specific areas. Some country-level implementations include, Project "TECH in the Community" which provided ICT Connectivity to disadvantaged communities in Haiti with the aim of introducing them to digital literacy, access and skills in ICTs; broadband transmission map in Arab region and the assessment of OECS countries in Americas. Armenia and Kazakhstan have joined Connect2Recover as beneficiary countries. Connect2Recover also promotes the deployment of innovative technologies for building networks as well as in enhancing digital skills.

Connect2Recover also supports the Giga initiative in providing funds to connect 10 schools in Rwanda. Project Connect (under Giga) aims to map real time connectivity of every school in the world. Currently, 915.1K schools were mapped out of 6 Million and 38 countries have also joined Project Connect.

### **Use of emerging technologies:**

Under Project Connect, artificial intelligence (deep learning) was combined with satellite imagery to create the school map in Colombia with 89% accuracy. In Brazil, Giga has developed a browser extension for connected schools to measure speed in real time, which holds providers accountable to deliver Internet speeds. Another example is the Project Connect mapping game which validates schools through the use of crowdsourcing.

In the Pacific islands, affordable and reliable connectivity is shared as key prerequisite to digital transformation. High internet costs lead to low penetration. Despite improvements in internet connectivity, internet is not affordable in the region. Mobile broadband remains the more affordable option. LTE coverage is available in Fiji and is starting to make inroads

in Vanuatu, Samoa and Tonga. Digital innovations are increasingly being adopted in the Pacific, such as financial services, e-government applications and e-commerce applications. During the pandemic, digital technologies were used such as for vaccination registration, to provide online dashboard of hotspots, to facilitate government-assistance payments and for business continuity purposes.

Intelsat shared the use of satellite to connect community project to provide Internet such as to schools in Rwanda, UNHCR centre in Ghana, Coca-Cola Ekocentre and Internet for all centre in South Africa.

### **Lessons learnt and challenges:**

As a starting point, by having high or a growing ICT penetration for connectivity is an excellent foundation for countries to build from. They can leverage of the lessons already learnt from different deployments from around the world.

Specifically for the Pacific islands, a number of steps would be recommended. Firstly, to reduce the International connectivity gap through the use of submarine cables and/or satellite technologies would be critical. Secondly, there is also a need to increase universal access and to connect the unconnected in order to increase market size and demand. Thirdly, there should be an increased use of cloud technologies, e-government applications and the digital economy. Fourthly, there should be an increase in the use of shared services to increase efficiency and reduce costs.

There is a clear relationship between school internet connectivity and education, which leads to an increase in a developing country's GDP. Hence, increasing education allows the closing of gap between developed and developing countries. Education for students must be uninterrupted for this to happen, and a sustainable business model to connect schools is required. There needs to be consideration of technology, financials, funding structure and operational set-up. Where there is a minimum target required for meaningful connectivity, this will have implications on the technology that can be used. Based on BCG's experience, it costs about USD15 per student per year for the connection, and those established by private sectors are more efficient as compared those that are government run.

Other challenges and comments were raised include the following. Firstly, the ability to sustain investment for infrastructure, especially for non-commercial areas is challenging. Secondly, there is growing concerns around cyber-security risks. Thirdly, there exists user appetite to innovate , especially amongst the youthful population.

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c. Main conclusions reached during the discussion

- A large part of the world is still not connected to Internet which provides opportunity to map and connect schools using resilient digital infrastructure and mapping;
- Significant investments are required for connecting the unconnected especially vulnerable population and innovative emerging technologies, innovations and solutions need to be designed for country specific context;
- Data is one of the key drivers for informed policy decision making process including mapping transmission maps with schools, hospitals etc;
- Partnership models including government, private sector and communities to bring the cost of access and improve affordability is key for sustainable resilient digital infrastructure;
- Governments will be key drivers of the digitization process;
- There is a need for significant investment in local talent and expertise to mitigate against borders being closed; and
- To be better prepared for the new normal and for future disasters, governments and regulators should consider **renewing their national broadband plans**.

**3. Final words from the panellists**

- **Innovation** – For our people to thrive in a post pandemic world, they need to innovate and adopt ! (Shivnesh Prasad)
- The value of **being connected** where you live is an added value (Albie Bester)
- Together we can make the world a better place **through partnerships** (Sameer Sharma)