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Session 3: Use of ICTs in Public Institutions: A Focus on Connecting  
Schools.

Good afternoon.

Can you hear me?

>> We'll be starting in two minutes' time. Please be prepared.

>> Dear ladies and gentlemen, welcome back after a lunch break.

Welcome to the third session on the meaningful connectivity we'll be  
focusing in particular on this session own the use of ICTs in the

public institutions.

We'll take a look at public education system but also the different approaches and different contributions done by the public sector and private sector and to making the connectivity properly used.

Before we're starting with the contributions of the panelists and welcome to all panelists of this session, I have the great pleasure to invite my colleague Julian to present a special paper which we developed in order to set the context on connectivity in particular for the educational institutions in the selected number of the countries of the Europe region.

So I'm handing over to Julian for a short presentation.

>> MR. JULIAN MCNEILL: Thank you very much, Jaroslaw and good afternoon to everyone.

I would ask the moderators to move the slides.

We can see part of the screen Luiza.

>> All right, can you see better now? It's still split in half.

>> Okay, let me check. Maybe I could already start.

>> MR. JULIAN MCNEILL: So today I'm going to present the background paper that has been developed for this forum on connectivity in education.

Status and recent developments in nine EU countries.

This paper -- next slide.

Thank you very much. This paper has been developed in the context of the ITU regional initiatives for Europe.

And next slide.

Which drive the work of the ITU in the 46 countries of Europe region.

In particular as you can see regional initiative one on broadband infrastructure broadcasting in spectrum management.

Objective of which is to facilitate high speed connectivity with resilient and synergistic development.

Deployment and sharing.

Whilst ensuring a user experience.

Quality user experience.

Next slide.

But let's come to the report. So back in September we realized that

there was great potential for investigating the status of connectivity in education.

Especially considering that education had as any other sector had to move to the virtual world and has become more dependent on connectivity. So this is why we wanted to take a systematic approach and look at the role of connectivity starting with focusing on nine E.U. countries of Europe region which are top priority for us also in the context of U.N. coordination processes and these are Albania, Bosnia and Herzegovina, Georgia.

Moldova, Montenegro, North Macedonia, Serbia, Turkey and Ukraine.

So based on research and we looked at four main areas for each country and these are first the overview of the education system and status of broadband.

Then we looked at government strategies and their overall role of the ICTs in education. Thirdly we looked at the multi stakeholder partnerships and financing mechanisms fostering investment in school connectivity.

And finally, of course, we looked at the national responses to COVID-19 and pedagogic initiative for distance education. Now, in this presentation, we will not go into the countries individually. You but I will give you aggregate information with the aim of providing food for thought on the trends present in the nine countries.

Next slide.

So with regards to the overview of the educational systems.

To contextualize, sorry, next slide. In the nine countries we're talking about of around 25 million populous, between ages 6 and 17, and around 130,000 schools which are covered by this analysis. All these countries require 8 or more years of compulsory education and with nine countries averaging more than 10 years of compulsory schooling compared to only seven 20 years ago. According to UNESCO data, around 1 million children and adolescents between 6 and 17 however, still remain out of school in these countries, what is important to stress -- to report here is that education systems in all these countries have seen a significant progress over the past 10 to 15 years. And there's a concrete risk that the achievements are compromised by lockdowns prompted by COVID-19 situation.

Next slide. I believe -- lock downs.

I believe Luiza we still see half the screen as previously.

But I will nevertheless continue.

You can also find the -- we posted the slides on the Web site later today. So regarding the connectivity side of the first section, in the first part of each country profile we looked at data on connectivity that ITU gathers each year. Exactly, this is the -- it's the correct slide, thank you very much. So -- and here as you can see from the chart we found that additional 27 million people -- next slide -- additional 27 million people have been brought online since 2015.

This corresponds to significant 35% increase overall and testifies positive transformation in this country.

However, 44 million individuals still do not make use of the Internet in 2019 in these countries. And this represents 30% of the total population of these nine countries and around eight percent of the population of Europe region the 46 countries considered as a whole.

Next slide. Looking a little bit more in detail at the market data when it comes to fixed broadband, all countries have made significant improvements over the past five years. Fixed broadband subscriptions now average around 20 per hundred inhabitants in 2019 and this in absolute terms translates in 7.7 million fixed broadband subscriptions that have been activated since 2015.

Growth is still modest related to mobile, but it cannot be neglected.

Next slide.

As mentioned, there's been a boom in terms of mobile subscriptions per hundred inhabitants.

2015 more 55 million mobile broadband subscriptions have been reported.

And population covered by 4G technology has seen an 800% increase in five years with total coverage of 91% of population for 2019.

But looking more closely.

Looking closely to data that might have concrete effect on children, which is why we're discussing today looking at estimated number of households with PC at home more than 18 million households across these 19 countries are not -- these nine countries are not in possession of a PC in 2019.

In fact, the 2015 to 2019 growth in the number of computers at home only grew by 7.9%. And has been relatively stagnant. Even though many resources and projects have been activate as elaborated in the report.

To cope with the COVID-19, the persistent lack of PCs in household is exacerbating existing inequalities. Next slide.

Looking then at the household connectivity, we can see that more than 11 million households do not have access to the Internet in 2019 in these countries.

You can imagine how teleworking or distance education cannot be possible without a fixed satellite or mobile enables connection at home. The 2015-2019 growth however, is promising and almost reaches 30%.

In line with the growth in overall Internet usage.

We looked at government strategies and role of ICTs and found that education policy is strategic priority in all nine countries and almost all countries have undertaken significant reforms aimed at innovating and modernizing education in the last 80 years, postally supported by UNICEF and UNESCO.

Then we also looked at the OECD program for international student assessment, the PISA program, which revealed two significant factors that characterize underperformance in school.

And these are the urban versus rural divide and the high income versus low income divide. And this pattern is similar to the patterns we see in our sector when it comes to digital divide. And this pattern is found more consistently in these nine countries compared to the OECD average.

We also see that there are best practices in education management.

The role of ICTs in the governing the education system. Implementing education management and education systems so-called EMIS systems can support monitor EMIS systems.

And systems however, directly depends and is related to having the necessary infrastructure in place. Next slide.

Then we've looked at more closely to the existing ICT gaps in education. The divide exists both in number of available devices per student in the schools and also computers connected to the Internet.

You can see from the table on the right that on average there are 0.15

PCs per student compared to 0.77 for the OECD countries.

Average. And that of these around 80% are estimated to have Internet access. So what estimate based on this data is that approximately 15 million PCs are needed in schools to close the gap and reach the OECD average. However, the data in this realm is a bit scattered and sometimes goes back to earlier than 2018 so there is a need for better data and indicators to understand the gap.

Especially as existing devices and infrastructure become obsolete.

Next slide. Minimum requirements for quick in public schools excluding distribution of PCs and allocation of public budget to provide minimum equipment.

But this often represents only a fraction of the funding needed to achieve the level of computers per students similar to those of the OECD average or Europe region average.

Connectivity remains a challenge from a financial, technical and logistical perspective and schools often located in remote geographic areas where adequate provisional schools are not available or viable for operators risk not benefiting from the digital transformation.

What we've seen is that ministries in charge of ICTs tend to prioritize the financing of ICT infrastructure to reach all households understandably.

And cover the largest possible share of the population with the highest quality of service. But in our view we also see that connecting rural and remote areas by focusing primarily on schools can actually be the solution for bringing connectivity through rural households.

Next slide. So some solutions have come from international financing mechanisms for broader broadband infrastructure investment.

And these are present in, to some degree, in all the nine countries and these are for example the western banking investment framework and also the operations from the European Investment Bank, the EBRD and the World Bank. Apart from some notable exceptions, while ministries in charge of ICTs have been building a constructive dialogue with these institutions, education systems have not captured these opportunities for school connectivity. So ITU and UNICEF are at the forefront of closing this gap with the Giga project which seems to connect all the world's schools to the Internet.

And you'll hear more about this later in the session. Overall, initiatives names at meaningfully connecting schools are gaining pace all across the region and this is thanks to the support of the U.N. Secretary General and his roadmap for digital cooperation launched in 2018 aimed at leveraging the potential of ICTs to achieve SDGs in this case for education.

Next slide. So finally, in part 4 of each country profile, in this report we looked at the national response to COVID-19.

In March 2020 we've seen that all nine countries in scope of this study faced school shutdowns due to COVID-19 outbreak. And this impacted 23 million primary and secondary school students and at least an equal number of households.

The most popular solutions we've found have been in order broadcasting less ups on national TV which occurred in almost all countries, creating and strengthening the online digital learning at the national level, and thirdly, replicating classes online. So these developments have brought long term innovation to the education system but also consolidated school connectivity and connectivity in education as an enabling factor. And so ICTs have begun a fundamental game changer to ensure smarter administration of the education system to strengthen the presence of the digital in-school curricula and to ensure that hybrid solutions can be sustained in times of crisis. Next slide. So here is just a short overview of the solutions in each of the nine countries covered by the study.

Invite to read more in depth about the findings at the level of each country. Next slide. So to conclude, over the past decade, the intersection of the policy areas of education and telecommunications has become more evident with the wider trend of digitalization of everything and national stakeholders have realized.

This integration between education and digital has evolved in three main directions which are highlighted by this paper. And these are that ICTs are a tool for public administration and are a medium to ensure continuity of digital services in education in times of emergency and finally they're an integral part of education curricula to create a workforce fit for the job market. So have this progress in three main domains it is fundamental to ensure that there are strategic policies in place which foster connectivity infrastructure

and fruition of devices in schools primarily and all households.

Next slide.

I will leave you to discover more in the report which is available on the event Web site and I will post in a moment in the chat.

And which will be finalized in the coming weeks.

So thank you very much for your attention and back to you.

>> Thank you, Julian for setting the context for this session and but also I have a great pleasure to welcome with us the assistant minister of the ministry of trade tourism and telecommunication from Republic of Serbia, Mr. His excellency Milan Dobrijevic we hand over to you to have a comprehensive approach to connecting educational system and also reacting very timely during the COVID pandemics.

So excellency, the floor is yours.

>> H.E. MILAN DOBRIJEVIC: Thank you very much, Jaroslaw.

You this for the opportunity to present what Serbia did we did a lot in the field of connectivity and education and I will take 5-7 minutes to quickly present.

Before I start presenting I have to reflect to what Jan presented and to simply confirm and agree with the runted results of surveys and also conclusions.

I would ask to put my presentation op screen so we can start with -- because you will see it pretty much reflects the numbers and key things that Jan spoke of and I will also try to provide compliments of information that are not maybe on those slides but they are related to the development in rural areas which Serbia did connect.

So this is -- but maybe I'm waiting for the slide.

Okay.

Okay

>> We're asking for the full slides.

>> Is it better now?

>> No, we see half.

>> Half of it, all right. I'm going to close it again and see.

I'm not sure why this is happening so I'm sorry about this. Voila.

This is introductory, go to the next slide.

okay, I'll try to in the shortest possible words explain how we came to the connected schools project.

It was like maybe even five or sixes years ago when we -- from the



ministry of telecommunication and information society spoke to ministry of education about the importance of connected providing of fast and security connectivity for all schools and for all students. And the first challenge was is government ready to finance the connectivity? If we have more important priorities like construction of schools and classrooms and et cetera, et cetera. So our first struggle was to somehow prioritize connectivity for schools to be done at least in parallel with all other things that ministry of education is dealing with like construction of schools, providing enough premises, providing enough salaries for teachers. Providing computers for computer classrooms, et cetera et cetera, et cetera, et cetera.

Obviously investments are huge.

But like five years ago what we said for ministry of telecoms we said is there any scenario or development of education within Serbia which does not require connectivity for each teacher and each student. And on the answer we could be receiving from ministry of education was there is none.

We need connectivity in all cases. And then five years ago decision was made to start with investment in for start connecting all schools. We can go maybe -- we can go to another slide. I don't see it yet. Here it is. Then first connected school project was born with few components on the connectivity side.

One was to connect all schools for starts to academic and research network of Republic of Serbia and does provide reliable and probably most important secure connectivity, secure and safe connectivity for all schools.

Second component was to bring this connectivity to each student to each teacher.

So we needed to construct wireless networks in schools, WLAN like 50, 60, 70 classrooms and it is a considerable investment for them to bring fiber from one office to all class rooms in the school.

Third was obviously to upgrade academic network central location systems and to have backbone network to provide super fast connectivity op backbone to support connecting thousands of schools which came in the later stage.

Next slide, please. This is just on diagram number of schools per

connectivity type.

We have currently connected to academic network, next slide, please. Because here this is the same but in numbers.

And what we did in the past few years we connected all main school objects, those are school objects in towns, cities. Larger school objects.

We connected all of them to academic network and you can see the split here based on technology of connectivity.

Currently we have something like 450 on fiber.

And the rest of them is mainly DSL connectivity or LTE.

What is planned for next year or mid year we have plan to connect all remote school objects and by remote we mean smaller village schools in many cases they have 5 or 10 or 50 students.

by end of this year we'll connect them and have secure LTE network.

I think is the largest LTE network in the region and by end of year close to 4,000 locations.

Next slide, please.

Second component of the project was providing Wi-Fi connectivity for all schools.

This is something we work on already for a few years now and we are half way done and I'll explain what we did and for start I will explain selection criteria so point is that all schools in Serbia are covered.

And only smallest schools like with two or three, or four active classrooms are left not to be covered with a Wi-Fi connectivity because we can achieve connectivity for each student and each teacher with more easier -- more simple means like one or two wireless routers that would cover a few classrooms.

But each school five active classrooms is covered with Wi-Fi construction project.

And another condition was to have at least 30 megabit plus connectivity which is practically fulfilled in all schools in Serbia. Please, next slide. So we split the project in three phases one was pilot in 2018 and phase two was practically completed.

it is being completed right now. Phase 2 in 2019/2020.

It was close to 40 million Euro investment done from the directly from the budgets of republic Serbia with huge understanding of Prime

Minister Office of Importance of this project.

You can imagine this was scale of project that was pretty hard to be financed from national budget but it was done.

It created simply, simply the wave to continue with different projects and complete the work fully.

So currently we are on the start of the phase 3 which we're going to finance from the European investment bank.

28 million loan has been negotiated and practically phase 3 of the project is starting right now in March.

We are going to deal with the next batch of schools.

Next slide, please. This is total scope.

So Wi-Fi construction is going to be done in estimated 1884 schools. And this because we are dealing with larger schools, this is covering 95% of the students in Republic of Serbia and vast majority of active classrooms in scope.

Next slide, please. Here is a little bit about number of phases.

So phase 2, we covered close to half of the schools that are in scope of the project. But since we have chosen bigger schools, we already covered 63% of the students in Serbia with Wi-Fi connectivity.

Next slide, please.

Obviously for phase 3 we have 950 schools remaining which is close to 50% but only 37% of students is yet pending for Wi-Fi connectivity.

Next slide. One important thing to mention is that probably most of the attending colleagues know about ed roam concept in Europe and here we did something similar.

So we have one SSID in all school locations in Serbia.

And the teacher when he gets the credentials to get connected in one school, he can actually connect, he or she can connect in any school with the same credentials.

One SSID on close to 2,000 locations in this moment in Serbia and you can connect in any school.

Also for the purpose of the allowing the guests or students to connect, teachers have applications through which they can create one-time Wi-Fi password and they can allow one or more students or guests in school to connect and thus to do the trainings, et cetera, and similar. Next slide, please.

This is the end, but I would like to say a few more things.

Because you mentioned in introduction broadband is an important part of connectivity and what we're doing in Serbia we are at the start of the rural development phase one.

We negotiated the loan.

We're taking million Euro and we also received very important funds 1.7 million from the WBIF and we're starting the first phase of the rural broadband incentive project which is going to cover approximately 600 settlements in Serbia with close to 990 -- 90,000 neighboring household.

But what is important because we're speaking about school connectivity those 600 settlements in first phase are going to be the ones with schools. And what we're doing actually through this program we are also going to provide optic connectivity in the first phase of the rural broadband development project which is we think very important because we think here we are speaking about 600 schools which at this moment have only potential of 4g connectivity which is quite limited especially in situations where you need to provide great number of students.

So complement of this what we did so far with connected schools project it is going to be connected with rural broadband project and in future it is going to go in parallel with those two projects.

Thank you very much for attention.

And I would just like to ask one thing Jaroslaw because I have to be on another meeting quarter to 3:00 so, if there's questions or comments I'm here in the next 30 minutes to be able to reply and then I will have to go.

Thank you.

>> MR. JAROSLAW PONDER: Thank you very much, excellency for being with us and also staying with us during the whole day. Of course, we understand your busy agenda and we have to encourage all participants to put the questions into the chat using this form of communication with our distinguished guests.

And ladies and gentlemen, this brings us to the next speaker, so thank you very much, one more time, Excellency, for being with us. This brings us to the second speaker of this panel as we're running late, Aminata Amadou Garba requested us to go directly to the presentation on the Giga project.

So we would invite Ihar Shchetko to take the floor.

It's our great pleasure to welcome you with us.

And to provide some insight and in fact the practical part of the Giga project which is the ITU partnership for connecting schools at a global level.

So Ihar, the floor is yours.

>> MR. IHAR SHCHETKO: Thank you.

Dear ladies and gentlemen, today in my presentation I'd like to tell you about data collection computations and broadband connection monitoring within Giga project.

Activities we're conducting on the regional level.

And we are actively using the ITU tools during this process. I can ask to put the slides on the screen.

Yeah. So first of all, I would like to tell you a few words about Giga.

It's an initiative that aims to connect every school to the Internet and every young person to choice.

Giga targets unconnected and underconnected schools.

And unconnected communities can also get access to the Internet along with schools.

As long as the absence of connection in schools goes quite often along with insufficient connection in the community.

Next slide, please.

Data consists of four pillars, first is back in schools and connectivity.

Provide infrastructure to connect schools.

Building sustainable business models to support connectivity and provide digital use to improve the quality of education. Next slide.

Today I'll be mostly talking about activities in Central Asia region engaged.

We're expecting to have the following results of our activities.

So school data set and infrastructure data set, school topology maps, economic estimations of links construction and mains Nance and realtime monitoring system.

Next slide, please. School data set.

Why do we need it? We need to identify unconnected and underconnected schools and estimate demands.

We school population and connectivity data whether they're connected to the broadband links or to the electricity grids and several others. What kind of connection speeds do they have? Next slide, please, complementary we collect data about infrastructure to identify options to connect schools.

We need infrastructure data such as support brand network cover rather, satellite coverage, note capacity which is especially important for community access. This data can be provided by telecommunication operators, the telecommunication administration, we can take it from open sources and use broadband ITU broadband maps as a tool for these.

Next slide, please.

>> So next slide, you can see samples connected to data set.

So this is data for set of schools that in Kazakhstan that we're collecting.

This is data for parts of the data for interconnected schools.

You can see the satellite imagery of schools beneath the coverage of mobile broadband networks or satellite coverage, closest fiber notes and the map of countries, country's map of unconnected schools.

Next slide, please. It is also important to map local prices, they're needed to make economic estimates.

Those prices include labor costs.

Telecommunication and imaging infrastructure instatements and channel rent fees, cost of equipment and construction materials. We can get values through market research and proxy-based estimates taking as reference what is known and based on GDP.

Next slide, please. Based on collective prices and school and infrastructure data we can make economic estimates. Of broader links construction and among these estimates are the operational expenses, catalog expense.

Cost of ownership and present value.

We used this to connect schools and estimate expenses it's broadband tool you can find it following link, provided link you can try it.

It's being tested right now but like you can make the calculations and compare with the expert estimates to -- you can look at this data.

Okay, next slide.

On the basis of these -- of these estimates there is certain network

models.

I hear -- I provide network model example which is used for fiber on cable line estimates and it includes the on cable line estimates. And it consists of the main parts of fiberoptic cable lined and fixed balance in terms of amount of initial data to collect and calculation. So it contains most price and covers most of the fiber optical cable line network cases.

Next slide. Also it's very important to identify clusters of schools. To connect and calculate interconnections between these schools within these clusters.

it allows us to achieve economies of scale to distribute resources efficiently and we apply algorithms to school connectivity and price data to calculate the topology maps.

On next slide, you can see topology map provided by the broadband diagnostic tool for six schools in Kazakhstan that are relatively located relatively close to each other, they're connected by microwave links and criteria of optimization is cost of ownership.

Next slide, please. For sure not all cases are covered with applied models so they should be treated separately.

We have -- we are going to have a number of edge and nonstandard cases such as for low populated schools and very high costs of technologies that are used within the modeling tools.

So these cases we need expert advice.

We need to apply the last mile connectivity guide and seek for solutions in the best practices databases for instance for service solutions that are updated with low speed timely based connections. Here we can see the realtime monitoring system which has been used. Which is going to be used in connected schools to monitor connected use.

And we're going to combine these measurements, the quality of services measurements and traffic measurements with the educational measure management information system data to improve value to break down the usage of online connection by the classes, lessons provided by the age groups and so on to add value and extract additional data to improve learning processes. So finally, these are -- activities we conduct within Giga framework and ITU tools we use and we also are planning to use ICT business structure and in our practice to make the selected

technical solutions sustainable. Thank you for your attention.  
ICT.

>> MR. JAROSLAW PONDER: Thank you very much for this presentation. We dived a little bit into the other region into Kazakhstan into the principles of notability or always the same. The way forward for some countries which would like to get into this for this contribution and I encourage all of you to use the chatroom to interact with Ihar who is staying with us during this session and also after.

And system as well as information on the let me turn to our next speaker representing the chancellery of the Republic of Poland, Senior Specialist in the Telecommunication.

Milan Dobrijevic who will tell us more about what is happening in Poland in this respect.

Mr. Dobrijevic, the floor is yours.

>> H.E. MILAN DOBRIJEVIC: Hello, everyone.

I will have the pleasure of sharing with you the Polish approach to providing connectivity of all schools which in this adds up to assumptions and recent outcomes of the implementation of nationwide education network program or (saying name) as I will refer to it from now on and I'd like to request my presentation to be displayed.

Next slide, please.

Okay

The story of us started in 2016 when the former ministry of digital first sat down to comprehensively analyze what was the condition of Polish schools regarding digital equipment. Including access to fast Internet.

Figures showed the dispersion of fast Internet access between regions and vast inequalities in that manner among schools.

What was shocking was that almost 10% of schools did not subscribe to any Internet service because there were -- there were no services to subscribe to in technical terms.

Surprisingly, the problem was not only belonging to rural and remote areas as one would have imagined.

But it was also real to cities including Warsaw, the capital of Poland.

Next slide, please. The solution was to introduce state-backed



program which would exhaustively deal with Internet access in schools. But still there were crucial aspects of such program to be considered and questions to be answered. For example, was such a program going to be all about Internet access itself or was it going to be a program of strength and digital skills of society. And another question was what should be done about all the Internet access -- all the telecom infrastructure that had been already in place or to be deployed by operators in coming years.

The question was should it be used for the purchase of such a program? Or should it be doubled by infrastructure deployed solely for the purposes of the program. Yet another question was what should be the core guarantee that the program would serve all schools on equal basis? That's comprehensively dealing with schools inequalities which was the sole purpose of such a program in the first place. Having answered all the questions raised within the ministry and by potential stakeholders, we had come up with the idea of OSE as a network first, connecting all schools virtually based on transit lines least by telecom operators to ask physically access schools.

Secondly, the OSE should provide not only access services but also cybersecurity measures of which I will tell more in coming minutes and internally, also should assist students and teachers in developing their digital skills especially concerning a healthy approach to neurotechnologies.

And the core guarantees that OSE should be accessible by any school where that OSE should provide its services free of charge and that schools should subscribe and unsubscribe to OSE at any time. Making OSE completely voluntary.

And by the end of 2017, we were ready with all the assumptions of OSE and necessary legal basis and by then we have kick started process of organizing the network. Become then we said each should take approximately three years to enable all schools with access to OSE services and implementation and functioning of OSE were imposed on the national academic and research network institute which long before OSE was an entity in specializing providing digital assistance to schools. Next slide, please. Stepping further into explaining the logistics behind OSE, network first words about the core network of OSE.

Because as much as OSE is a virtual network, it must as any other

network operate on a dedicated core. And OSE case apart from managing services in operational and business dimensions, the core network is also a security system which guarantees the safety of OSE itself.

And data that reaches each end user of OSE, next slide, please.

The OSE core consists of 16 regional nodes.

Those are marked in green. And three central nodes.

Blue ones.

Each connected to at least two other nodes.

Via one main and one redundant link. This is to ensure OSE services will always find their path regardless of any potential break dunes on their way. All in all, the core network of OSE took almost

130 million Euros and about 100 tasks to deploy. Next slide, please.

And now moving on to the virtual side of OSE.

The nodes themselves and schools are connected via lines that are leased by OSE operators from a third party operators. While those operators provide OSE operator with bit stream access services of at least 100 megabits per second symmetrical or more on schools level and at least 10 gigabits per second on transit level.

They also provide with local interconnection nodes which run as intermediary nodes between OSE core network and schools on a given area.

Lease the lines and interconnection nodes OSE operator has already conducted 56 nationwide tenders.

On one hand tenders ensure all operators ensure equal chances of offering services to OSE.

And that there is now competition on the other hand tenders ensure that OSE operator does not overpay for those services. While still the annual budget for maintaining the leased lines amounts to 25 million Euros.

Next slide, please. Before I take a minute to comment on the state of play on OSE, let me share with you the most important ethic of the program.

As you may remember from a couple minutes back in 2017, 10% of Polish schools did not have any physical access to Internet service. Now there is no school Poland with such a problem.

All schools in Poland are subscribing.

Next slide, please.

As regarding the OSE services themselves, more than 20,000 schools have subscribed to OSE and more than 18,000 are already accessing OSE services. Another thousand are already equipped with end user devices necessary to receive OSE services which is a CPE a switch and access point.

And these schools are awaiting the last mile connection to be made available to OSE operator via third party operators. Given 18,000 out of 2 2 1/2 thousand schools access OSE services it may appear like OSE is delayed.

As I said, estimated that we would need three years to reach every school. Back in 2017.

But essentially it is nothing but.

First the 2,000 schools which have already subscribed to OSE are awaiting activation within the terms of subscription which foresee a period of up to six months between the subscription and activation of the service. Secondly, the remaining schools which have not yet subscribes have not subscribes as a consequence of the voluntary dimension of OSE services. So in that case, OSE will always await new subscriptions.

Next slide, please. Regarding the monitoring of OSE services we monitor on level of each individual school.

The chart on the slide shows the total throughput demand within the OSE network between September of 2020 start of new school year and February 2021.

The green color represents the demand on download throughput and blue represents the upload demand.

As you can see, the upload demand rises somewhere at the end of October which was a moment schools were back again closed due to the second wave of the pandemic, some teachers and students because of personal reasons still go to schools in order to do home schooling very internet common proof and connectivity for schools safeguards not only standard needs of education but can also play an important role in beating extreme circumstances such as hybrid education.

Next slide, please. Now couple words about the security measures provided by OSE operator.

Security of OSE is provided on four different levels and concerns not only the standard concept of protection against threats such as

viruses, and web pages not necessarily welcome in schools.

But goes deeper into the contents of each data being transmitted in OSE network in order to block the contents which might potentially pose a threat to the well-being of the students.

Next slide, please. Dynamic of analysis to understand whether the contents downloaded or uploaded within the network are neutral in terms of students physiodevelopment. Or whether they may pose a potential threat. And for an extreme example if a student tries to broadcast a bullying video between his friends via an accessible communicator logged into OSE network, the network should intercept such transition and provide the headmaster of the school with a notification allowing him or her to act before the damage on the bullied student had already been done. And naturally, the security measures in OSE are compliant with all data protection regulations and any other relevant regulations regarding the gathering and processing of personal digital data. Next slide, please.

Having discussed essentially all the main assumptions and outcomes of OSE network and services it provides, I would like to side comment on additional activities undertaken under OSE to help the educational system of Poland maintain its function during the pandemic.

Schools in Poland were closed once at the beginning of March 2020 and again at the end of October, that circumstance required schools to keep on running on line and OSE network naturally provided possibility to access Internet services by teachers and students who had personal connectivity issues while unfortunately being told still 25% of households do not have fixed access to at least 30 megabits per second networks.

But moreover, OSE established an Internet portal.

So-called remote classes.

Online classes.

Which allows teachers of any subject and students of any grade to access electronic materials and tools to help them continue to fulfilling's each subject's curriculum and OSE also managed to purchase almost 73,000 end user devices which were then delivered via schools to the students most in need. Next slide, please. That should be all for me for now. And in the end one last comment I would like only to mention that back in 22018, during the World Summit of

Information Society in Geneva also was awarded a prize in one category and I hope four years later we have lived up to the prize.

Thank you.

>> MR. JAROSLAW PONDER: Thank you very much for this presentation, very impressive piece of work and inspiration for many countries working in this subject.

I think this process shows together with the contribution from Serbia and it approaches there can be a little bit different customized to the parameters of the country but it's important to move forward in connectivity of the educational institutions so congratulations to this success and also congratulations to the award received in the past and for sure we see the progress going on.

So thank you very much for this.

I invite all colleagues who would like to have some questions asked to Mr. Marcin Lukasiewicz to do this during the chatroom who is still with us during this session and as time is running, we would move to our next distinguished speaker from Slovenia.

And I have the great pleasure to welcome with us Mr. Tomi Dolenc, Head of User Communication and Academic and Reception Network of Slovenia. So Mr. Dolenc, the floor is yours.

>> MR. TOMI DOLENC: Thank you.

Hello and thank you for inviting me.

Are we going to start my slides, please? Okay, so I've been involved with bringing Internet and service to schools for over 25 years now and I'd like to share with you my view on what happened to schools in Slovenia during the last year.

Next slide, please.

>> I'm working for international research edges education network which is a public institution which is basically infrastructure, for research and a member of the jam family and we're Geant family so we're connecting schools since '93.

Insure since we believe in digital information society, educating digital citizens is vital, we've been advocating good connectivity for schools which means we wouldn't really settle for anything below dark fiber. We're able in 2015 to use some European funding so we helped our minister of education to start the project.

So we basically laid required fiber from operators which 25 years of

maintenance.

And the network is managed by us.

And we've covered less than half schools but actually encompasses more than 70% of students.

So, of course, in this arrangement, the rest of schools are slightly deprived in more rural areas and we sincerely hope that within this year the next project will be granted continuation to deal with the rest of the schools. Much the same development as Serbia and Poland.

In addition we've just concluded a project in end of 2020 with established safe and powerful Wi-Fi networks in all schools in primary and secondary schools with capacity managed by ARNES.

Next slide, please. So what is services and connectivity are free of charge for schools, yeah?

But last year during pandemic schools were closed for a good part of the year.

So what we experienced was on average 100 fold increase on services usage.

For example, bear in mind these are numbers for small Slovenia with 300,000 students at K-12 level. For example from 150 concurrent users in virtual classrooms we've now reached 20,000 concurrent users every day.

And with video conferencing it's even more dramatic.

From 100 users per day to more than 50,000 concurrent users.

This is just one service.

So just our service.

You have to add to that figure at least Microsoft and other providers.

Next, please.

Yeah. And so overnight it became irrelevant for the moment at least that schools are reasonably well connected because the connectivity at home was the issue not only connectivity but working or studying conditions at home.

So as my colleagues from ministry previously stated, the digital divide was really amplified because all kinds of social aspects so it's not just whether you're connected to the Internet or not but whether you have enough computers in the family or cameras or what not. So we were -- during the pandemic we were able to help again

with additional funding again from Minister of Education with computers and cameras and equipment.

And the Minister of Education also with talked to the operators and some of them donated some equipment and one mobile Internet subscription. But this is, of course -- this is emergency solution. Another critical thing I would say since digital skills weren't really -- while we do admire lots of innovative use of ICT in the schools, the graphs from previous slides show that actually ICT in the schools was let's say optional.

But now going 100% digital or distance education, we've seen there is a long time of no users at schools so it was really lots of need for health and training.

-- help and trainings.

It's important to understand it's not just mastering the tools and ICT.

Going online with education means new methods.

Workflow, the work process changed.

And this definitely will not happen overnight.

It will take some time. Next slide, please. Next thing we've encountered is increased online presence of course increases exposure to all -- let's say all the bad that can happen online.

All kinds of abuse have been mentioned for example, next, please, teachers have just -- just click next.

Yeah. Teachers have learned how moody the students can get in the classroom.

And next please. Next. Yeah.

And they experienced not so few troubles with parents.

You have to bear in mind with distance education on one hand, the schools entering our homes so it's invaded, let's say, the privacy of our homes but also all of a sudden you have parents present in the virtual classrooms which you would not have in the real classroom. So there's lots of different rules of conduct how to carry on this work process which needs to be translated to online learning environment but it's not always very simple to do it. And there's all sorts of legal issues data processes has been mentioned and other stuff like can a parent record a session or lecture. And intellectual property rights also they work differently online than in real life.

So why I'm tell you all this, we as a service provider, we basically have to tackle all this.

Next slide, please.

Of course, first thing we had to do was to scale up the infrastructure and services to cope with the demand and to be -- to pay attention which services will be better in, let's say poor connectivity.

But immediately, together with that, there was need for support for training.

In all kinds of workshops and online courses, and we see it as part of service.

You have to do it together because we're the ones to teach them how to use the tools, how to use them safely.

And honestly, lots of questions.

Different issues that I've mentioned some. So many times journalists would ask me how much investment, how much more investment in technology would it take for distance education to run smoothly? My answer is well technology is -- of course, you need funding, you need money and you need to means to implement it, but the real question in my opinion is how much human effort does it take? Because there's support on all levels.

It's not there yet.

It's critical and we were talking changes in management and plainly getting used to the whole new type of work.

Next, please. So, if you ask me how much connectivity will we need in the future, we're talking about hybrid education and working from home.

But to what extent will it happen? It depends on so many things.

Because what else does it take apart from this connectivity for this picture of the right to be so idyllic.

Do they have enough computers in the family or physical -- healthy social environment enough to support this kind of work? It becomes apparent that this digital divide is really crucial point because in -- well, in physical school, learning opportunities are -- well, let's say almost equal but with distance education, it's much more difficult to achieve it.

Sitting standards for connectivity in schools it is the same.

Optical network is the way to go, right? But at home sometimes they



can how many data conferencing streams we need to support, two or three or five to work and I'm not sure -- I mean, the general bandwidth in my opinion will be more guided by the need towards -- issue is to do with sustainability of dealing with digital divide. I have to say that smartphones in schools are often seen as disturbance and only now we're seeing some kind of complementary use. Next, please. This is my final message.

Digitalization of society as a whole and education in particular is a very complex process.

And we need to be looking at all building blocks at once.

I mean, it's not just connectivity or just services or just clients.

Or -- we have to take off regulation and everything and again, sustainability would be my final word because now we're seeing lots of very good emergency measures being taken but I'm not sure do we have a good plan for sustainable future? One comment is that project funding -- I mean, merely solutions but yet is not really sustainable. Thank you.

>> MR. JAROSLAW PONDER: Thank you for your contribution, very impressive and comprehensive.

We're looking forward also to some discussion regarding also these financial models for connectivity which indeed is something where a lot of countries in particular the countries in transition are very much struggling with in order to provide the sustainability.

We have the the vice president of Jan Guis.

>> The floor is yours.

>> Thank you for so, if my slide deck is coming slowly forward.

I will walk it quickly through in a matter of time. Most important how do we look at presentation, what do we expect from digitalized education? And industry at the end of it.

But also what have we learned through time and we are deeply involved with projects through Europe which makes a learning exercise even when I learned already a lot from other countries today.

Next slide.

What do we see as an industry? Doesn't matter where you are.

If you take it from pure educational point of view you have to learn skills in training your school routine through time.

Competition we have as industry is not only in international and

Germany quite a large country it is international taking an I self for example Dutch working for a German country.

It becomes key and digitalisation is an important part of bringing us there where we should be.

If you take the next slide. So what are the challenges today? What we see as an industry is that particular part of being the digitalization learning curve into the younger people is not at the school.

It's mainly taking outside the organization and if then in the end we ask them to take everything related as well it is not a working place where you bring these things.

This is part of the education in a normal education.

You should learn that and learn language is also how to learn with digitalization.

And we like to bring that forward in the next couple slides.

How we look into it.

So we look to it in the next slide. It already starts from our perspective in the primary school. So even when you have children yourself or nephews and nieces you know pretty well at a young age they know how to work with tablets and how to play with it and find the right apps and everything else.

But how do you find the other things? How can you start learning from the Internet? How can you find your information like to use? So particularly what you want to achieve in the primary education, if we go to next slide, secondary education, you take it away forward.

That was too much.

So go one back.

Yes.

We want to take it forward and particularly in working collaborative and home schooling has shown us that capability to work in these kinds of environments is important. You have to get together in a platform and you need to know how you work in these kinds of platforms.

You go towards structural and we learned in the past you have to do presentation of class.

Mainly just speaking out of your -- today you need to be PowerPoint savvy to work forward. And then you need to know how to find your information.

And be critical on that.

And that brings me already to the third layer in education.

Which is much more in preparation so next slide, sorry which brings you already in preparation for career.

Actually a little bit expectation we already have an industry or yourself where you get somebody from the school into your organization.

You have basics on these kind of digital capabilities.

If you look into the last layer which is much more university layer, they go -- next slide, which is much in depth on how do we do educational research with these tools.

And how to bring that together over the period of time but also over here in the networking part starts. So, if you bring that to the next slide, how did we as an industry look to digitalize schools.

What is a measurement.

We've spoken a lot about access and when access is primary.

You have not digitalizing your education.

However, if you want to use all the tools and give the capability of each of the purposes to work on this independently, you have to provide Wi-Fi. And Wi-Fi is an independent source where everybody can be online and do their own thing or as a class do their own thing at the same time.

It would be high density structure depending on the cities.

Also on the amount of classrooms.

So there's a lot of pressure also on this digital part.

However, it is the basis and this research is from 2018.

It was preCOVID.

You already see the huge differences for example in Europe where we are today with Denmark leading and Germany almost lagging in the end. This had an impact on COVID.

A couple months it was released how well was home schooling being dealt with through Europe and there's kind of relationships already.

If you were able to do your digitalisation in school, you have all the capabilities of Wi-Fi and, et cetera but also the cloud structure and the teachers were well trained on it, you were prepared.

And you noticed that in certain countries, particularly the dark green countries but, if you didn't have that in your structure or system as

a country to digitalize your education, then you were lagging and Germany was one of those lagging countries, you saw it already on the Wi-Fi side.

It clearly proved itself on the home schooling part. If you go to the next slide.

So digital -- and our perspective, digital education, education to digital life, maybe that's the best way to say it -- was neglected particularly in Germany and why I give the example and that should be in the DNA of policy makers so we see policy makers within certain countries that are aware that you have to bring information but the way how to bring information is still sometimes very old-fashioned. the way also the exams are deemed.

Very old-fashioned.

It all comes together. Of course, you need to train teachers, bring it pupils and then you get your IT equipment related with it.

So, if you go to the next slide.

Germany understood that a couple years ago and decided and process and funding process with digital Pakt Schule.

They had to change their laws to do so.

Germany has 16 states and each of these states are independently on their education part.

So each state makes their own educational rules. To make it happen that the federal part is able to do the sponsoring, you have to change the laws.

So investment was 5 billion or 5 million depending how you say it from a federal point of view, which also includes cloud solution for having central data. Over the period of time they learn you have to run these networks which is another 500 million and over the period of time particularly with home schooling and COVID time you need to provide mobile devices particularly for those households who are not able to do so. If you calculated back and you want to digitalize the whole education it's 525 Euros per pupil.

Not that much.

However, if you have a lot of pupils in your country, you have that price point.

So, if you go to the next slide. So we have seen already a couple other initiatives as we Lancom we were involved in the honest

initiative.

Luxembourg is an example.

Yes, they're a small country but they have a country wide network in place.

And like Slovenia also based on Eduroam.

It's not only educational locations but also in the libraries where we see in Luxembourg that the same network is not only in the libraries but also in the town halls and other public locations so you have to extend the place where you are with your pupils.

And at this moment we know that all in Italy are working on program. Last, but not least, one slide to go, I also want to highlight Eduroam.

It has been mentioned it started over here in Europe.

It is originally from a high end point of view university at higher education point of view university point of view.

Established.

But you see already with examples of Slovenia and examples of Luxembourg that you can bring it down to the pupils so you enter the school.

You at the moment you leave your university you still have in the place, not only between institute but for example in the Scandinavia, you will find your own network in airport or bus station so it keeps you constantly online where you may not get the buy-in for 4G or in the future 5G.

I want to stress this as an important part of coping online and digital.

And then last slide is just a closing slide and thank you for giving me the opportunity from an industrial point of view to see what's happening over here and I look forward to digitalize ourselves and particularly the digital sector.

>> MR. JAROSLAW PONDER: Thank you very much, Jan for this presentation.

It's really excellent overview and very much engaging and showing also how the private sector can support this process.

But it's extremely important I think for the dimension which we are talking about of the investments but also complexity which doesn't require the hard infrastructure but the whole ecosystem working

together aligned with the objective.

So ladies and gentlemen, this brings us to the end of the series of presentations of this session. We encourage you to still discuss with our presenters using the chatroom we're running unfortunately a little bit late.

Therefore, we'll be sliding into the next session now which is not going very far away from education because we'll be talking about digital skills.

This is something in particular of the COVID time was underlined as one of the top priorities of many countries with urgent need of acting upon.

And therefore, we have small highlight of this topic because the fully fledged discussion on this topic will have on the 16th of March during the special forum for Europe on digital skills. So I have the great pleasure -- so before we are switching to the next session, I would like to thank very much to all speakers of the session 3 for their contributions and also conversations you had in the chatroom during the session. And now we are concluding this session.

And moving to the next topic as mentioned. So it's been a great pleasure to welcome my colleague AnaMaria Meshkurti.

floor is yours.

>> Thank you.

We just heard an excellent section 3 on connecting schools through the usage of ICTs and it is my great pleasure to be moderating section 4 which is on fostering digital skills development in supporting demand creation for connectivity.

This session will focus on empowering individuals in leveraging connectivity and digital technologies to support social and economic development. One aspect of meaningful connectivity is indeed to have the right digital skills to leverage connectivity to benefit everyone as individuals.

To discuss how we can support demand I'm delighted to be joined by an excellent line up of panelists.

I would like to welcome to the session Ms. Lidia Stepinska-Ustasiak, Deputy Director Department of Foreign Affairs Office of Electronic Communications at Republic of Poland.

And Mr. Marcin Krasuski. And I'd like to extend apologies of

Ms. Gulsanna Maediieva as she could not make it to this session today. Thank you to my panelists for joining us today.

And I would like to already request the audience to start typing in the questions in the chat as our panelists deliver their interventions and should we have any time for Q&A today we'll be peeking at your questions first, before I give the floor to our distinguished panelists, it is my pleasure to give you some information on some of the activities and tools that the ITU has on digital skills in order to briefly set the context for this session. If I may ask the IS moderator to kindly pull up my presentation.

Thank you very.

Digital skills there is not much that we don't know.

Cue to transformative role of digital technologies that are now mainstreamed in all sectors we're seeing a new type of workforce required that needs to have these digital capacities and skills. Even for this session we had to use a -- the current pandemic has played a key role in accelerating the need to prioritize digital policy and as we mentioned earlier, digital skills are key at the heart of achieving meaningful connectivity for all. ITU has been working on a set of products and tools in order to equip everyone with creation of national policies as well as assessments for digital skills and if you may turn to the next slide, please, we will be looking at the first such product which is a digital skills assessment guidebook.

I will just be touching briefly upon this and not go into details. This has been designed to serve as comprehensive step-by-step tool for national digital skills assessment.

The guidebook can be used to determine the existing supply of digitally skilled cohort to assess skill demands from industry and other sectors to identify the skills gaps and to develop policies to address future digital skills requirements. As you can see the guidebook is for use by policy makers, private sector, nongovernmental organizations, and academia and I'm sure many from our audience are representatives of these entities and I would like to invite them all to look at this guidebook. The guidebook draws on and complements the other tool I'll be showcasing to you the digital skills toolkit.

I'd like to show quickly the difference between assessment guidebook

and toolkit.

Assessment guidebook is really to assess and identify gaps whereas, toolkit is going to help you with your national strategies.

So, if we go to the next slide and look at digital skills toolkit, the toolkit is for policy makers and all the other stakeholders that I mentioned in the previous slide. This provides practical information examples as well as step-by-step guide.

So, if you're thinking of developing a national skills strategy, this is the toolkit right for you.

This toolkit also includes topics such as how do you engage the right stakeholders, how do you do inventory and assess existing policies like stock taking of course of such policies, how do you develop strategies for varied proficiency levels as well as how do you organize campaigns and join regional and international initiatives.

This is really converting everything into manageable tasks and includes a lot of examples from already existing programs that can of course inspire you for your own national digital skills strategy.

The next slide will bring you to digital skills insights.

This is an ITU publication which is released annually, it puts together various articles with a focus on capacity building and skills development in the digital area.

And it has a wide audience of specialists in this field and it also had a call for papers already closed this year for 2021. However, if you look at 2020, there were some very interesting articles addressing topics such as AI on employment, such as data centric frameworks.

And tracking information gaps in technology using online data.

and I invite all of you to really look at this publication and we will be looking forward to the 2021 insights in this area.

In the next slide, this relates directly to what my colleague Jaroslav just mentioned to you, this session is let's say a preparation session for the ITU regional forum for Europe on digital skills development.

This will be a one-day event on the 16th of March held from 10:00 to 4:00 CET where we will be looking at sessions on digital skills development in Europe.

Country approaches on how to foster digital skills development as well as the toolkit and assessment framework that will be presented to you in more detail.



So, if you're interested in these tools, it is great to join the session and understand better these tools in depth and also how you can use them. Also, the session in the afternoon will be taking the format of implementation laboratory and this is very important and I invite all the audience here to really join this session because the implementation laboratory is going to have an audience moderated discussion where you can really bring all your insights, your examples, and share with us various approaches that have worked on when it comes to digital skills in Europe.

And outcomes of this event is really based on such sessions and based on the audience inputs.

Therefore, I would like to invite everyone to register for this event which is just coming next week and join us. And if you go to the next slide, I would like to also briefly touch upon the digital skills in southern eastern Europe outcomes documentation which will be the basis that we'll be using for our discussions in the event that I just mentioned as well as breakout session.

This document will be shown during the Digital Skills Development Forum event. And again, I would like to invite everyone to join us in this event and register as it is just coming next week. So I hope that this was a useful information from ITU and what some of the activities that we're doing and toolkits that we use.

And I hope that you will be joining at our event. And now without further ado, I would like to invite our first speaker, Ms. Lidia Stepinska-Ustasiak, who will be presenting. And I would also like to invite the moderator of the IS moderator to kindly pull up her presentation, please.

Lidia, you have the floor, thank you.

>> Ms. Lidia Stepinska-Ustasiak: I hope my presentation will appear soon on the screen and I'd like to thank you for having me here and like to share with you our experience on digital skills and capacity development in Poland.

Let's move to the next slide.

COVID-19 definitely changed our habits and revealed some weaknesses of digital technologies.

But with no doubt digital technologies are crucial as never before in our lives. Therefore, important part of our strategy as national

regulatory authority for telecommunication market is not only to develop infrastructure and not only to provide regulatory frameworks for innovation but also and probably foremost to keep people online safe and active. As we see on this slide we conducted a survey in the second half of the year and numbers from this survey show that our habits changed probably even more drastically than it is illustrated here. Definitely instant messaging and video conferencing joined our every day habits at work and school. And the time online spent before the pandemic was definitely shorter than now. It is important context for digital skills and for our responsibility as the regulator on this area. Next slide, please.

UKE, Office of Electronic Communication, is a regulator responsible for telecommunication market. But our responsibility goes far beyond infrastructure services, quality of Internet because social part of our activity is equipping people with digital skills necessary to benefit fully from digital services. Next slide, please. Today I would like to share with you some much our experience related -- of our experience related to educational campaign.

I clicked the August one launched in 2017.

Initially it was aimed at the youngest scholars from primary schools. But after that we designed the second edition for slightly older pupils and the last one is aimed at young teenagers.

It is called control and it covers -- keep control and it covers different skills necessary for younger people to be safe online and to avoid unwanted phenomenas that appear online.

Next slide, please. And these numbers illustrate the scale of our activity.

Our training teams in 16 worksheets delivered over 6,000 lessons for 158,000 children. Within last years.

next slide, please.

During this session we're talking about safe passwords, SMS and cost and consequence.

We talk about trust online.

We tried to increase the level of knowledge on hate speech and how to avoid it.

We talk about addictions to the phone and other addictions related to activities online.

We talk about games and it's advantages and dangers. And many other online related problems. Next slide, please.

Here on this slide you can have a look at our promotional materials because during our sessions, when they were physical, we distributed educational leaflets containing basic information.

And what is even more important, containing context to helplines to our consumer centers, to leave attendees with necessary information for future.

Our new campaign to teenagers was launched at end of 2019 and since that, we organized the classes for teenagers, the mechanism and educational is slightly different.

Based on films that are grounds for discussion with teenagers, next slide I'll talk in more detail.

Main topics are hate and hate speech online, sexting and sextortion, which is a problem among teenagers, we tried to make sure teenagers are aware of Patostreaming and what it is and how to deal with it and such phenomenas.

We mentioned other online challenges.

And Fomo, MOMO, Foji, and JOMO.

Probably for other generations these terms are not familiar.

But well, among teenagers, some syndromes like fear of missing out are really popular and might be really problematic.

This campaign is based on videos presenting topics in a friendly and understandable way.

Third is FOMO and hate teenagers online and final is sexting and sextortion.

Next slide, please.

You can look at promotional materials.

We have basic information and Web site and phone number to our hotline.

During the pandemic children spent so much time on line.

We don't want to address direct courses to talk to children we prefer to talk to teachers and with knowledge they can transform and foster during classes at school.

Next slide, please. In our -- next chapter of this campaign we discuss with teachers Internet addiction, disorder, FOMO, MOMO, sexting and patostreaming and hate speech and many other things.

As we know from feedback from teachers, teachers are not aware of them and they are really grateful for knowledge how to talk about it with children.

Next slide, please.

And this year, we plan to continue activities.

Address problems I mentioned. We will organize additional sessions for children and students but additionally the -- we would like to organize and establish some additional courses and materials online in line with the national cybersecurity strategy for Republic of Poland for 2019-24 because we are aware that general audience also needs to be equipped with some basic and more advanced knowledge related to cybersecurity and safe and responsible behaviors online.

Next slide, please. This is the last slide of my presentation and here you will find our Web site.

related to consumer protection policies.

Some are described in English so I would like to encourage you to visit our Web site.

You will find there are examples, some materials that might be useful for you.

And just after my presentation I will put on the chart that links to our films, our educational videos, that have subtitles in English and you can also have a look and use it in your activities or inspire and adapted to your strategies and your local circumstances.

Thank you very much for your attention.

I will answer for you questions with pleasure on the chat.

>> Thank you very much, Lidia. And thank you for this great presentation.

Definitely very interesting the I click sensibly project as well as one of speakers from the previous session mentioned digital skills for teachers.

So I can see that in Poland you have already taken steps towards this. Now, I have the pleasure to invite the private sector perspective from Mr. Marcin.

You have the floor.

>> Mr. Marcin: Thank you, Ana Maria.

I'm happy to be back to ITU after a couple years of break.

Happy to see you all again in good form and good shape.

First of all, apologies for not having the presentation but I hope that nevertheless my speech will be interesting.

So let me begin. As you know at Google I work as a public affairs manager.

I'm based in Warsaw.

And I will offer you the Polish perspective and try to offer a bit more wider regional perspective how we see things happening and evolving over the last year. Digitization is at this point almost a cliché, everyone agrees this is something to be cherished as a way to economic recovery.

Before pandemic there was a report that prepared that said that in central-and eastern Europe, digitization could add over 200 billion Euros of additional GDP by 2025 only due to digitization.

So everyone understood that rapid move to digital tools would be an opportunity for all CE countries in order to capture this growth. But then pandemic hit, lockdown and economic disruption happened. A lot of jobs were put at risk and just to give you a side note, tomorrow will be my first anniversary of lockdown.

You can see I'm at home and it seems I will stay at home for couple next weeks. So everything seemed to stop last year, in general online tools have been I lifeline in lockdown and been a lifeline for all of us.

So we all switched to digital in search for accurate news on health information, shopping, schooling, staying connected with our loved once, et cetera, et cetera.

Then the businesses have to switch to online in order to keep selling when their premises were shuttered, then she have to enable homeworking, finding new customers, launching new products and services and everything was made online. Then we saw use of techy interest in online shopping or how to buy on line grew by twice worldwide. At peak of pandemics there were almost 12 million new users of online services in CE.

That is more than 15% since the start of pandemic. In Poland alone number of persons who used at least one Internet service jumped from 66 to 78%.

That means that 3.6 million new users of digital technology in Poland alone.

All in all we're happy to report recovery.

We understand that a lot of businesses were put on big strains. We pledge to help 10 million more people at least and businesses across Europe to find jobs, dirge ties and grow in the next 18 months. How we are doing this? We decided to strive to reach partnerships in cooperation in order to create conditions for communities and economies to restart.

And we are focusing on three things: First skills. Helping people to learn new skills and find jobs. Second, these are tools, helping businesses to grow online and third rules. We're working with governments, communities to boost recovery and to get right rules in place.

Just to give you a couple examples of details how we're doing this. We have partnered with Polish development fund and running a program called designers of innovation. And this is a series of trainings on how to use creative skills and collaboration to solve real world problems. We are supporting businesses of all sizes however, we focus on SMEs, so small and medium businesses.

And why? The reason is simple.

They create 85% of new jobs and we are helping them to digitize faster.

We're using our tools and services that are free of charge so that businesses can grow online.

This is all very important because as I said before we perceive digital skills and digital services as a new restart for the economy. In order to have this we're paying for over 100,000 people to complete training and to get professional Google certifications that will translate into digital jobs and 50% of those are reserved from underserved communities.

This is important because estimate that 65% of pop pupils in ground schools will work in positions that today do not exist. We need it get our education right so it ask prepared for the job market of future.

Last is infrastructure.

So we're helping businesses and individuals with our services and with our products.

In Poland we'll soon open a cloud region in partnership with domestic

cloud provider and this will help Polish businesses to take advantage of our technologies to digitally transform businesses and will -- that will be future proof with Google Cloud.

Previous speakers has mentioned sustainability and this is more and more important for our businesses so we have set the most ambitious climate goals so by 2030 we would like to operate 24/7 on carbon free energy on all data centers and services worldwide.

We have less than 10 years to achieve this so every email you send through email or every question you ask or video you watch on YouTube it is already carbon neutral but we would like to be carbon free energy at all.

In order to close at Google we remain optimistic about the future. We understand COVID has put a lot of disruption in our daily lives and we understand that getting the economy recovery is not easy in Poland there is a third wave of COVID happening right now as I speak.

But as I said, in order to recap we're committing to help people gain skills and find jobs to help businesses recovery faster, smarter and cleaner, we help governments and communities to accelerate recovery and we use that -- we use online tools and digital skills for everyone that will be catalysts for the economic compact.

And let me assure you this Google is here to help. Thank you very much.

>> AnaMaria Meshkurti: Thank you it is good to see you back at the ITU indeed and happen eye anniversary in advance and I'm sure many of us in the audience do have their anniversary as well of working from home for a long long time. Very, very interesting statistics you share and interesting programs that you're doing at Google in partnership with different stakeholders.

Perhaps I might -- he see in the chat we do not have questions yet and I asked my colleagues if I have missed any of them to please retype them in the chat and I invite the audience to feel free to type questions.

I know that we don't have much time but I would like to perhaps one question to Lidia, I see she's still here with us and sharing very interesting videos that I ask everyone to have a look at later on. As Marcin mentioned a huge number of people are now online in Poland. And, of course, this also means that with greater numbers I guess

comes greater responsibility and more people online means more need for digital skills and such programs.

for Lidia from a government perspective when key features do you think should be incorporated in government policies and we're talking for youth as well as professionals as the continued life learning.

In order to raise the overall digital skills level in a given country? We heard a lot about in the past coding skills that should be now everywhere, checking on perspective on this?

>> Thank you for this question. It's not easy to answer.

It's really broad problem.

I think the pandemic forced us to have a look at strategies again. And because our pandemic situation revealed some additional gaps, right, for example, skills teachers and doctors and national strategies.

Groups of skills that are included and addressed for now are not aimed at groups and pandemic based on -- related to age and other demographic criterias, not necessarily to the specific needs of professions.

So I think that it's time to supplement national strategies and to think about particular groups of professions like for example, teachers.

Who need to be equipped in additional skills like using video conferencing system like working on shared documents, like creating new teaching programs based on interactivity, based on modern approach to teaching.

It's really a broad problem.

>> Thank you very much, Lidia.

It is a broad problem and we'll not be solving it here today but it is good to raise awareness on this matter and also to continue the discussion in such fora together.

Maybe going back to Marcin, you mentioned a lot of interesting programs that you are having and a lot of programs are also gathered toward reskilling and up skilling the population to find the new jobs and new opportunities in this digital world.

This all leads to building a digital first culture.

I guess in the private sector as well which you are probably -- this is something you're doing at Google I think for many, many years.



Could you tell us a little bit more because we're talking today about meaningful connectivity, right? And what digital skills mean in this context. What is the role of a private sector in companies fostering skills toward inclusive and meaningful activity for all.

>> Marcin: For your question.

At Google we're a geeky company so we're very -- we're putting a lot of resources into getting details right. So we have last year we have commissioned studies done by McKenzie that sketched for us landscape for the future. And they basically reported that the most -- and this is not really surprising but the most demanding competencies will be technical and digital and all of them the demand for competencies meaning how to code, how to use digital services, demand for that kind of competencies will rise by 90% in the coming 10 years.

However, what is a bit maybe more surprising is that social competencies will rise with demand for those kind of competencies will rise about 25%.

And why this is happenings? Because people will need -- in order to be successful in the job market.

People will need to be a bit more -- will have this -- will need to have these sales personality in order to communicate freely and communicate adequately. The last skill in demand is a cognitive competencies meaning to get the information really fast to spot important stuff very quickly, to cede out fake news and in order to prioritize different tasks for example.

So that kind of three competencies seem to be key for the future job market.

At Google what we are doing is obviously we are focused on technical and digital competencies.

So as I mentioned before, we are you will skilling people in for example in Corsera studies.

So we're offering them different courses on for example AI, on for example, machine learning, and we are doing this free of charge because we understand that number of people come from unfavorable economic conditions or social conditions.

For them Internet or digital skills are maybe not the only way forward but one of the few ways opportunities that is available for them.

We are focusing on underserved and underplanned communities in order

to foster competencies and skills.

So we're focusing on these technical and coding aspects of the future job market.

E-thank you very much.

I'd like to close it with one last question as I know that we do not have much time left. I know that in the audience there is a lot of representatives of different stakeholders and they hear various initiatives that you've launched from private sector perspective, government perspective.

What would be your message let's say to such stakeholders about how can they start and implement initiatives such as yours? It's very important as we know to share those success stories and allow everyone to learn from everyone's experiences and this is why we have such forums as well.

Maybe we can start together if you have a quick message for your private sector but everyone really stakeholders that would like to go into direction of what you are doing?

>> MARCIN KRASUSKI: For me if it has to be a short and crisp sentence is not to focus on strategy and big thinking even though big thinking is always welcome. But try to focus on execution and implementation. Because we have seen a number of very good meaningful strategies. However, most of the time they are covered in dust and lying on bookshelves of various ministries.

So what is crucial is implementation.

So for example, as Lidia said, up skilling teachers, focusing on students that would have adequate teaching -- teachers and with adequate skills.

And focusing on for example lifelong learning.

So not to develop this huge vague strategies but basically focusing on execution, implementation, and this is the only way forward, actually, let's start acting and not only talking.

>> AnaMaria Meshkurti: Thank you very much.  
that is a good message for everything.

Lidia, what would be your crisp message.

>> I agree that implementation is crucial but what I'd like to highlight is collaboration which is key word. Because without cross sectoral collaboration, without the collaboration between governments,

regulators, and also private sector and academia, we will be not able to achieve our goals particularly on area of up skilling and reskilling adult people because we'll be able to understand what is necessary only in the situation when where we share experience, share data.

Results of surveys.

Diagnosis between governments, between academia, between private sector which is aware what is necessary and how our current trends or needs and gaps that must be filled.

So collaboration is key.

>> AnaMaria Meshkurti: Thank you very much.

Definitely collaboration and in the next event we will see collaboration between our two panelists perhaps on a new project to be launched.

Without further ado, I would like to again welcome our panelists again today for joining us and sharing great insights and really good messages that we will keep in mind.

And I would like to now pass it to Mr. Jaroslaw Ponder for the closing.

Thank you.

>> MR. JAROSLAW PONDER: Thank you very much, Ana and thank you very much to all panelists for their contributions.

It was really exciting end of the long day.

Had vibrant discussion so thank you for your moderation, Ana, of this session.

So today we had a series of different debates on meaningful connectivity starting from the more focus on the connectivity where we underlined it cannot happen without making it meaningful and inclusive. And we switched then to more technical issues with particular focus on rural connectivity and where we've heard perspective from daily basis working with unconnected.

And those who need the connectivity not only to include this part of society but also to digitize the agriculture sector.

Let's not forget this is also an important sector for many countries and which are undergoing also digital transformation.

We switched finally to the two last sessions where we look at meaningful connectivity from the perspective of the digital skills

systems and taking a look at what could be done and should be done with we heard exciting stories from Serbia and Poland, really comprehensive approaches underlining the strategic approaches for these Serbia having national strategy as one of the few in southeastern Europe countries undergoing significant process of strengthening their digital skills of the nations. So ladies and gentlemen, this brings us to the end of today but today is a special day. This is the day of the international women's day.

We've had many interventions from women but also a lot of women joining us and being part of undertaking but tomorrow is a special day dedicated to the gender equality and we hope to see you all at this important meeting which is done not only within framework of this initiative but also as a strategic contribution to the United Nations Regional Forum on Sustainable Development for the Europe and Central Asia ensuring that the results of these discussions would be further challenged to the level of the HIPF and the General Assembly in New York. So before I close let me draw your attention at the ITU office for Europe patiently working on the meaningful connectivity in different angles so let me remind you on the 16th of March we'll be having the opportunity to discuss more the digital skills development during the European Forum dedicated to this topic. And on the 14th of April we will also hold Europe, Africa, global symposium for regulators.

For the first time we're doing the interregional global symposium for regulators bringing from both region and looking at digital transformation in particular accelerating inclusive connectivity access and use very close topic to this which we have discussed today and we encourage you to block the time on your calendars as we'll be taking a look at this interregional dialogue in this.

So before I close, I would like to -- as I mentioned tomorrow's session is held within the framework of the special forum on sustainable development so we will have the opportunity to do so, therefore, I would like to take this opportunity to thank sincerely the Minister of Public Administration in Slovenia for great collaboration on this project and also for strategic shaping of agenda and discussions of this meeting.

Let me also thank to my colleagues from the ITU, highest moderators of

today's forum.

It was great discussion.

I encourage all of stakeholders to still visit our Web site to take a look at the background documents and all reference materials which were mentioned today which are available on the Web site. With this, I would like to thank you very much.

We see you tomorrow at 10:00 sharp. And let's not forget to celebrate a special happy International Women's Day today and to have additional discussion on the digital equal opportunities tomorrow and together with launch of a special report focusing on nine countries of the Europe region and convening a way forward for bankable project providing proper impact in those countries.

So thank you very much one more time for this.

And we're looking forward to welcome you tomorrow in the morning.

Thank you, and we wish you safe trip home unless you are at home.

So have a nice time at home. Thank you.