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ITU REGIONAL FORUM FOR EUROPE ON MEANINGFUL CONNECTIVITY

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>> JAROSLAW PONDER: Dear colleagues, this is just a short announcement that we'll be starting shortly. Let's be a little bit patient and give a chance for other colleagues to login and to be ready for the opening. We expect we'll be starting around 3 minutes.

Thank you very much.

Dear ladies and gentlemen, good morning. This is the ITU Regional Forum for Europe on Meaningful Connectivity. Before starting with the proceeding of the agenda I would like to request our IT support and facilitator to provide us and the technical details related to the platform which we'll be using today.

>> Thank you for joining. I'll be the remote participation moderator for the event. Before starting the meet, I would like to give some instructions on the Zoom platform and the meeting.

This meeting is entirely remote. The audience is kindly asked to keep their camera and microphone switched off. The moderator will assign the speaker and give you the floor. When the time comes, you may use the chat for comments or questions. Please include your name and affiliation for making it easier for the organization

moderators will be monitoring and any comment may be read out.

When the floor is open to the audience, please raise your hand to request the floor. The raise hand function is located at the bottom of the participant window. To access the participant window, click the participant button in the button bar of the Zoom interface.

You can view and activate the closed captioning by clicking on the closed captioning in the bottom bar of the Zoom interface.

We kindly ask you to display your full name and affiliation if possible. Incomplete information could cause you to be removed from the meeting room.

The room is being recorded and the recording will be used for report writing and communication purposes. Every effort is being made to facilitate this smooth flow of the meeting. The meeting will now start. I remain available in the chat if need you need assistance.

>> JAROSLAW PONDER: Thank you for this introduction.

One more time, welcome to the special event, regional event, ITU Regional Forum for Europe on Meaningful Connectivity. On this special day, International Day of Women, and let me give this opportunity to wish all women being today with us a happy day and congratulating them to advance the agenda of the gender equality in the digital Aspects.

Having said that, today in front of us we have a very busy agenda, but we have a great pleasure and honor to be joined by high-level representatives of institutions making the space in the digital space. Having said that, I have the great pleasure and honor to invite to take the floor and to provide the opening address my colleague Stephen Bereaux, Deputy Director the Telecommunication Development Bureau.

The floor is yours.

>> STEPHEN BEREAUX: Thank you, good morning to Your Excellencies,

Your Excellency, Minister of Public Administration of the Republic of Slovenia, Secretary General of the Regional Cooperation Council, Colleagues from Europe Region, Distinguished delegates, Ladies and gentlemen:

I am pleased to welcome you all at the ITU Regional Forum for Europe on Meaningful Connectivity, which is organized by the International Telecommunication Union, with the support of the Ministry of Public Administration of the Republic of Slovenia.

It would have been a pleasure to meet in Ljubljana,

Slovenia, as originally planned, but I am glad that we can gather virtually today to discuss such critical matters for our present and future.

The global pandemic has elevated connectivity to becoming the fundamental cornerstone of our lives, extending the availability of products and services and empowering citizens, workers and students in their daily engagements and needs in times of lockdown.

This development, however, has unveiled significant connectivity gaps within and across countries and regions, which have exacerbated pre-existing inequalities.

Being or not being connected, more and more determines having or not having the possibility of active participation in society. Hence the importance of delivering connectivity to all, which is why we are here today.

Today I'm happy to mark International Women's Day. I would start first on focusing on the fact for it to be meaningful, connectivity must also be inclusive. There is a significant gap globally, perhaps less so in the Europe region in connectivity and involvement of women in ICTs. We must close that divide to achieve meaningful connectivity. Through the EQUALS compact, our activities such as Girls in ICT Day and other gender activities ITU works every day to achieve the empowerment of women in leveraging ICTs. Tomorrow as part of this forum we'll host a dedicated special session to discuss more in depth and find new ways to accelerate the closure of the persistent gender gaps. Meaningful connectivity must embrace inclusive connectivity for youth and Persons with Disabilities and all vulnerable groups. Our Generation Connect Initiative kicked off in Europe last year has created a meaningful outcome in the Europe Youth Groups declaration on regional priorities for Europe toward 2025 which will help ITU to ensure that youth voices are fully included in our decisions and future work toward connecting humanity.

Through Accessible Europe, another initiative, we seek to ensure that the vulnerable among or populations are fully able to participate in the future being created through ICTs.

During the outbreak of the pandemic, the ITU has played an active role in supporting resiliency of telecommunication services across the globe. The REG4COVID Platform, provided a productive online space for an active dialogue between regulators and other stakeholders across the world, fostering the sharing of best practices and main

challenges at the global level.

In those countries where collaborative approaches to the issue have been carried out, responses to COVID-19 based on ICTs have been successful. This only confirms the validity of the Fifth Generation (G5) gold standard benchmark on collaborative regulation identified by the ITU which foresees a multi-stakeholder approach to ICT regulation.

Despite the prompt responses, the pre-existing level of digitalization at the country level has been a fundamental factor to contrast the pandemic, as highlighted during last year's Global Symposium for Regulators 2020. This has created the urgency for supporting investment in broadband networks, including rural areas and underserved communities.

Even Europe region, from its leadership position globally, counts 89 million individuals who remain unconnected to the Internet. According to the recent ITU study "Connecting Humanity - Assessing investment needs of connecting humanity to the Internet by 2030", it is estimated that only in Europe and Central Asia, around 33 billion USD are needed over the next 10 years to connect everyone. With the network upgrades and demand for greater bandwidth, these numbers will be even higher, thereby requiring efficient public intervention where needed.

ITU is addressing the infrastructure gap in a number of ways. For example, the ITU Interactive Transmission Maps provides the global community with an unique picture of backbone infrastructure and transmission links, whereas the Last Mile Connectivity Toolkit, is allowing Member States to build capacity at the national level with regards to the design and implementation of last mile connectivity projects aimed at connecting the unconnected.

These resources are being implemented for example through the Giga project, jointly run by the ITU and UNICEF, which aims at connecting all schools in the world. You will hear more about these initiatives later today.

Ladies and Gentlemen,

Let us not forget that supply side policies aimed at making connectivity available to all are not enough in 2021. It is in fact becoming increasingly evident that making infrastructure available often is not complemented by uptake and meaningful engagement, and this creates the necessity for demand side policies.

Affordability remains the greatest challenge in this regard, but looking at the global trends of reduced basic telecommunications services costs, which are valid for

Europe region too, we are confident that most countries are going in the right direction in this regard but more needs to be done for rural areas.

Another important obstacle to demand creation for connectivity is that of digital skills, not only in the context of education, but also with regards to lifelong learning and upskilling, which determines meaningful use of ICTs in all daily engagements. Through the ITU Academy and the ITU Centres of Excellence (CoEs) ITU is impacting thousands of stakeholders in Europe and globally with high quality trainings that will ultimately support digital transformation within countries. In addition, direct country assistance focusing on digital skills gap assessment and in follow up establishment of national strategies for digital skills development, helps countries to ensure sustainability.

Finally, how not to mention the fundamental importance of bringing women

This Forum will advance the discussion on all the items mentioned above and thus bring us a step closer to ensuring universal meaningful connectivity to all by 2030.

Before I conclude, I would like to stress that the outcomes of this Forum will also be of paramount importance as we get closer to the ITU World Telecommunication Development Conference 2021, which will be held in Addis Ababa, Ethiopia, in November this year. The success of this conference rests on the active participation of all ITU Member States, Sector Members and other interested stakeholders. We are looking forward to the establishment of a new global agenda for meaningful connectivity for all that will accelerate achievement of the UN Sustainable Development Goals.

In this context, please let me remind the successful participatory engagement of European stakeholders at the European Regional Preparatory Meeting for WTDC-21 held in 18 to 19 January 2021, which identified connectivity among the principal priorities for Europe for the next work cycle, including connectivity digitalization, inclusion, innovation and cybersecurity. I encourage you to engage in the numerous activities that will be carried out in the first half of 2021 in preparation to the Development Conference and building the partnerships helping to transpose political objectives into tangible impact of ICTs on human development.

Ladies and gentlemen, congratulating the Ministry of Public Administration of the Republic of Slovenia for great progress achieved in the field of connectivity and many

other domains so far, and for collaborating with the ITU in organizing this virtual conference.

This will be an important year for the country as the Slovenian Presidency of the Council of the European Union is approaching and we are glad that the digitalization and connectivity elements are in the programming as cross cutting areas for action. Let me wish you a successful Presidency.

Finally, please let me also express sincere thanks to the European Commission, BEREC, the Eastern Partnership, RCC of Western Balkans and CEPT for continuous collaboration on the Europe, and in particular the one on broadband development.

We are looking forward to continue this joint journey towards connecting the unconnected.

I wish you all a very fruitful forum.

Thank you.

Back to you.

>> JAROSLAW PONDER: Thank you very much for this opening address. It is my great pleasure to invite His Excellency Minister of Public Administration of the Republic of Slovenia.

Excellency, the floor is yours.

>> Allow me to wish you all a happen Women's Day. The role of women has many faces which are rightfully being recognized more and more.

Now to the event: It is my pleasure to welcome you to today's Regional Forum for Europe on Meaningful Connectivity. The Ministry of Public Administration of Slovenia is happy to support this event and foster open discussion on such an important topic.

Connectivity has already changed many aspects of our professional and daily lives. It plays an essential role for a successful digital transformation and brings many economic and social benefits. Moreover, the unexpected circumstances the COVID-19 crisis have given connectivity a completely new dimension. In the past year we have learned being connected is not a matter of choice or reference, but rather a necessity that enables us to go to school, work, communicate with the outside world.

I'm glad to have the opportunity to share some thoughts on the subject with you today.

Firstly, allow me to address the connectivity gaps and need to connect those that have remained disconnected. As I mentioned earlier, the COVID-19 pandemic has accelerated digitalization and the need for a better and wider connectivity. This acceleration has brought us many

benefits, but it has also exposed many shortcomings and risks that need to be addressed. In this aspect it is essential to improve the broadband coverage and ensure the security of the 5G network. Moreover, connectivity should also be about inclusion and making sure no one is left behind. Only by doing that we can enable equal connectivity for all.

Secondly, I would like to mention the relevance of cooperation in the area of connectivity. In order to maximize the benefits of digital technology, we have to provide equal access to ICT, foster the development of necessary skills and ensure the inclusion of vulnerable groups such as disabled and the elderly. I believe cooperation is key to expanding our digital of infrastructure and increase the use of digital technologies. Global cooperation under the global ITU programmes plays an important role in addressing this and helping systems advance in digital innovation.

To sum up, digital transformation can only be successful if accompanied by the trust of citizens and benefits, raising awareness and emphasizing the benefits that digitalization brings should be of most importance. As the slow are convenient I can't administer for public administration, I'm happy to say we have several examples of good practices in this area, we have developed our Smart specialization strategy and the digital Slovenia digital strategy encouraging the integration of digital technologies in the business products, processes and services. The National Programme on Artificial Intelligence has been prepared and we're striving for digitalization of the public accommodation, tourism and more.

Knowing the importance of the topic, digitalization is a main focus during our presidency of the Council of the E.U. which will take place in the second half of this year. I believe connectivity is the heart of a successful digital transformation, it needs to be inclusive and significantly contribute to social and cultural development. We have a very interesting today event ahead of us, and I'm certain that the outcomes will highlight a new perspective on the topic for all of us and provide an important input for future ITU work in this area. Thank you for your attention.

I wish you all a fruitful discussion.

>> JAROSLAW PONDER: Thank you very much, His Excellency, for this statement and sincere congratulations to the progress made in the digital area and Slovenia is

playing double role in our region, it’s a leader in the European Union but also the country which is very often referenced for non-E.U. countries as reference point from the southeastern Europe and thank you very much for the longstanding cooperation in supporting the countries in their journey to connect all.

This brings me to our next special guest of this forum, the leader of the Western Balkan region, Madam Secretary-General of the RCC for the Western Balkans is today with us, and also sincere congratulations on the great progress done in the digitalization and the issues related to roaming.

Let's hear from you directly, what are the next steps and what are the success stories from the region, Secretary-General. The floor is yours.

>> SECRETARY-GENERAL: Thank you very much.

Good morning, and hello to everybody. Appreciative to have this opportunity to participate and to share the Western Balkans perspective on connectivity. While I have to say that I'm sure nobody is quite happy to keep this connection among ourselves only virtually, especially as it is happening during the pandemic. Although the world is becoming more and more digital place, we cannot forget about human connection, that's the business of life. Human connection.

In the region, there are different types of connections. I hope this human connection, although with all of these difficulties will survive and be there, while we do have hurdles and programmes in the Western Balkans on the physical connection, despite many investments in the region, yet we suffer from poor quality of transport infrastructure. It is fast tore go from Belgrade to Vienna than from Belgrade to Podgorica, and if you have another location to go to, you have to go through with a plane. It is a complicated life in terms of the physical connection.

On digital connective which is the focus of your work mostly, I have to say that if worldwide connectivity, the amount of people to use the internet was from age 16 to 64 shows that people are spending 6 hours and 4 minutes in using the internet or two hours and 30 minutes for the use of social media, more than 300 million people are meeting as participants through Zoom, Western Balkans is part of this global picture but still lagging behind.

One step ahead to improve our citizens connectivity has been achieved as rightly mentioned through the regional roaming agreement that brought significant reduction of costs between the region between 83% up to 96%. On

July 2020, some months ahead of us now, the people will enjoy all of the benefits of the roaming free region, bringing the region a step closer to the E.U., Western Balkan roaming charges. We're working very closely with our partners at EC commission, definitely they're trying to work and make a breakthrough in opening the new chapter of preparing a roadmap, an action plan in reducing roaming charges between Western Balkans and the E.U., we're working closely with regulators, through regulators with operators and as you may know, this is never an easy call, it was not easy even for the E.U. itself when they put this in place. I don't expect it to be easier for us, but it is a commitment that we together have to keep.

Considering the more than 80% of the traffic data spent is between Western Balkans and the E.U., companies, that makes the story even more important. But the COVID-19 tested our lives, but it tested a lot, even the vulnerabilities of the system and perhaps certain policies provided some strength of the digital platforms but as well as introduced the citizens of the region to try to build up more resilience on how to respond to the challenges that all this technology boom in their lives.

As mentioned, it has been a digital leap for all of the Western Balkans since the beginning of the pandemic while the digital life was embraced in their daily life.

An increase between 37.2% and 42.6% across the Western Balkan economies of digital use in schooling, education, social networks and information, but modest increase between 40.3 to 19.4 in contacting public administration and shopping online. I had to share with you that we just received the latest data of the latest Balkan from the region, there is interesting data in there, on the use that the citizens from the region have gone through during the pandemic on the eGovernance services. Just to say, we're -- I can't share much details for you, it is -- we're in the process of reading the data. I have to say to you, it was astonishing, during the pandemic, people felt a part of the first ones comfortable, in try, using the eGovernment services, and this trend as well, it is everywhere in the region with some discrepancy, differences. The use of digital tools for education has increased dramatically and 44.5%. Citizens are satisfied with the digital delivery and prefer to continue digital education as much or even more. Saying that -- this data spans mostly for the young people and those who are quite young. My age, it becomes more difficult with those from 50 and above.

Anyhow, the digital shift that happened involuntarily during the pandemic will not subside with the end of the pandemic and restrictions, this calls for a high intensified work from governments to accommodate more services, better quality, access, so equal opportunities for all.

Western Balkans economies have been working, as I said, in that regard but data is still a bit concerning. Nearly half of households in the regions still lack computer access at home. A third of fixed broadband internet connection, lacking, highly, mow reliable connections is needed. Only a fifth of individuals use the internet to connect with public authorities or eGovernment as I mentioned.

Western Balkans' economies are placing great emphasis to investments in broadband, hence from the WBIF, the instrument of financing the infrastructure in the Western Balkans by the end of 2020 there are 11 active digital investment projects, 10 national and one regional, with a total investment amount to 566 million euros. Now is that enough? Surely, it isn't. Now, it happened by occasion in today's 8th of March, and just one data, it is quite -- that I share with you with much concern, those women employed, working at ICT in the region stands at 1%. In the E.U., the level of employment of women in ICT, it stands at 19%. You can imagine what a big gap is still present among us in the region and here, and the European Union.

Now, how do we see the way forward? You know, for regional cooperation Council, the digital agenda, it is one of the top priorities. The region embarked with the vision and vision in further let's say increasing and enhancing the regional integration, intrigue increasing the convergence with the single market and last November the summit happened and the common regional market was endorsed. It is not only a document or a title or a policy paper for the leaders, governments, think tankers or the businesses in the region there, but concrete measure, deliverables that we think are achievable. So not only nice words and nice vision in that. T.

That’s why developing the common regional market was not a comfortable journey at all, it was worth taking it. It has the regional ownership in there, the political accountability involved the -- RCC is proudly have carried this on and sharing and partnering as well with the C sector and regional organizations and business community or others.

The regional digital area, within the context of common regional market furthers the work with the digital agenda of the Western Balkans, advancing to integrating the Western Balkans to a Pan-European digital area. There are some challenges definitely, those were mentioned, some were mentioned previously, providing broadband internet access for the majority of the households, enabling the Western Balkans region, engaging in digital upskilling and under skilling, embarking on new challenging practices such as artificial intelligence, Smart Cities, high performance computing, raising awareness on the digital security, and risks related to COVID-19, support the vulnerable groups, particularly the elderly and the small and medium enterprises against those digital security risks as they take much more time being online and as well are less familiar with -- with the digital age and technology, reducing barriers to make it easy to stay connected with jobs and markets.

We hope that the summit taking place in July, the one taking place in autumn under the Slovenia presidency, the Western Balkans needs to seize the opportunity, to keep the momentum and to gain much more political leverage, demonstrating the ability that these regions can deliver again, including this digital transformation, greener environment, enhanced innovation ecosystem, improved integration and achieve the results not only to send a joint message to the E.U. or to the international community that things are changing, but to make breakthrough in the lives of citizens and especially those of the younger people.

For us, the next months will be extremely intense, dynamic, as we step up our efforts towards the realization of this agreed deliverable.

We all know that future like it or not will depend on digitalization and technologies, I think that the sooner we embrace this new reality, the better it will be for all of us and the benefits will be greater for everybody as well. Thank you very much for having me today and I hope that we can have this story together.

>> JAROSLAW PONDER: Thank you very much, Madam. One more time, thank you very much for the continuous collaboration in the field of digital and count on us in any way necessary and to drive further this process. Thank you very much for this.

We're taking a lot from your intervention, and also for today's discussions which we'll be touching upon many of the issues relevant to the digital integration process

in the Western Balkans which is the top priority for many countries. Thank you very much.

This brings us to the end of the opening segment. I would like to thank all of the distinguished speakers for their contributions. Thank you very much. In normal circumstances, we would call for a round of applause, but thank you very much for being with us.

Dear ladies and gentlemen, now we are moving to the agenda which is quite busy, but before we start through session 1 we wanted to set a bit of context of why we're doing this forum and what we're expecting from the forum. Some of these highlights already we heard from the message of the Director and we wanted to dive a little bit -- a little bit into the aspect of the connectivity and in particular, meaningful connectivity, which is getting so many different faces in our discussions on the issue, why to connect the people. I would like to invite my colleagues to share a few slides which we wanted to highlight during this part of the meeting.

Thank you very much.

So as it was already stated, this forum is held within the framework of the regional initiatives.

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In Europe, the Member States together with all stakeholders have agreed on focusing on the five specific targets with one which is focusing especially on the connectivity. With this focus -- next slide -- with this focus we are trying to provide to the Member States and to all stakeholders a lot of different tools which can be used in order to advance their connectivity agenda.

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Connectivity remains the key, in particular in Europe, we investigated, 10% of the increase of the fixed and mobile band penetration increases the GDP by the impact of 0.46% and mobile even more, 2.1%. Digitalization, 10% increase in the digitalization in the CAF digital ecosystem development index results in 1.4 growth in GDP, not only the core infrastructure means but the whole process of digitalization is very important for advancing the socioeconomic development.

Under the regional initiative, we're taking a look at the connectivity from the very diverse anchor, providing the directed technical assistance to the countries, but also providing the platform to discuss and creating -- for the accreditations of the partnership.

What we're take -- we're taking a look at that today. And for discussing and taking a look, how we can join

forces to advance the think tank part of the work.

Next slide.

This is the reason joy at the beginning of this year we launched the Digital Trends in Europe report providing the full overview of the status of the connectivity in our region. Our region consisting of the 46 countries and covering over 600 million of the citizens taking a look at different aspects, not only focusing on the mobile fix, satellite connectivity, but also the youth, skills, gender, regulation and others.

Most probably many of you had the chance to go through this report, but for those who still didn't have the chance, let's take a look at the few numbers.

Next slide.

So the European mobile market is very advanced. It is 38 of the 45 countries acceded, mobile server subscription. In 2020 Europe region average was estimated at 122% of the inhabitants, well above the average which is 105 only. Active mobile broadband subscribers and for 100 inhabitants reached almost 100% in 1919 -- in 2019, outreaching the world numbers. A third has mobile subscription rates in access of 100 inhabitants, but there are nine that lay below that world average and we need to take a look at that, how to provide assistance to that. ITU estimate as fixed broadband penetration in our region at the level of 32.9%, 33% in 2020. More than double the global average of 15%. 11 countries reached fixed broadband subscription rates more than 40 per 100 inhabitants. In total international bandwidth has more than doubled over the last four years in the region.

Satellite broadband is available in all E.U. Member States and some non-E.U. countries. With the biggest market including the UK, Germany, Turkey and most markets show a small declining trend for period 17, 18 but several others, including U.K., Ukraine, Turkey, Switzerland, Sweden, others increased in satellite subscriptions which is promising for this technology.

Let's take a look at the affordability. Europe has most affordable prices closely followed by the Commonwealth of independent states region, Europe has most of mobile data relative to income. 32 countries have the cost at less than 1% of gross national income and 2.1%. Europe has also the lowest fixed prices as percentage of the gross national income per capita at 1.45%. Only 6 countries have fixed broadband basket costing less than Broadband Commission targets 2%.

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Let's take a look at the other items related to the meaning connectivity. Youth, skills, gender divide. Let's take a look at the youth. Europe is the global leader in internet access, 85% of households having the internet access at home in 2019 compared to 57% globally. The proportion of individuals using the internet in 2019 is 82.5% in Europe in comparing to 51% globally.

Also in the gender gap, remains at 5 percentage points in Europe, and decreasing and less pronounced than compared to the world average.

There is still some work to be done in this domain.

ICT skill levels over the last three years vary significantly across the region. What explained also so much of the work to be done in the field of the digital skills. Basic digital skills are well above 50% across the region and 13 countries have obtained level of basic skills above 60. 5 countries have standard skills levels below 20% what is alarming.

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Let's take a look at the enabling environment. Our 5G -- so generation benchmark for regulatory excellence. The gold standard for collaborative regulation which has been developed by the ITU which takes a look how to compare the countries and their readiness for the digital transformation process. Europe leads in the benchmark with 10 countries classified as the generation 5th and 39 countries class if I had as the G4 or the G5.

What is very promising for advancement, advancing in the digital transformation in the future.

So let's take a look at the main takeaways. Europe region has seen continued growth in the areas of ICT, infrastructure access and the youth. Global leader access at the ICT indicators, there is no doubt on this. Mobile network coverage is just shy of the 100%, internet use by individuals is above 80%, internet access is nearing 90% and almost 100% of the 15 to 24 years old are using the internet.

Digital divide persists. The rural internet access by households has increased to 78% and gender gap has decreased. Most European countries have achieved level of basics of the ICT skills above 40%, but there is great variation remaining in relation to standard and advanced skills.

The countries, this is evidence between E.U. and non-E.U. countries of Europe with some notable exceptions. Mostly southeastern European countries present significant opportunities for acting on all of the areas mentioned

above, spanning from infrastructure development towards more relevant indicators, including women empowerment, digital skills and affordability. This is the reason why also the ITU is taking a look -- next slide, please -- and the next.

This the reason why the ITU is taking a closer look at how and to provide even more impactful assistance to the countries and engaging with the U.N. and taking a look not only at the narrow mandate of the ITU but also at a different aspect of the meaningful connectivity which can drive the demand for the connectivity and make sure that the sustained development is accelerated.

This is the reason why we're working with so many countries where the U.N. is present and making sure that the digital is part of the country assistance, country frameworks and the flagship initiatives of the U.N.

Next slide.

This is the reason why also for the purposes of this workshop, forum, we have prepared the two papers, focusing on the nine countries of the Europe region, not the regionalization, but just objectively taking a look at how can we do the work together and from the perspective of the meaningful connectivity.

Next slide, please.

We encourage you to read the report. Let's take a look at the key takeaways of this important document.

Taking a look at the very good connectivity, affordability, connectivity uptake, in those particular 9 countries.

Next slide.

In 2019, 7 out of 9 Member States achieved 95% of great population covered by 4G coverage with a total population of over 109 million in the 9 countries, this is a remarkable realization of available connectivity. 15.7 million people remain without 4G access in the countries. This is a little bit concerning because in fact, this part of Europe, it is always referred as the mobile driven generation and group of the countries. In 4G, it is providing the basics of the meaningful connectivity.

With regards to household internet access, Turkey has surpassed you were region and E.U. average in 2019 with 88.2% of households having access to the internet at home.

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A recent ITU discussion paper on economic impact of COVID-19, digital infrastructure says accessible network, fiber to the home appear to be better prepared to respond

and to spikes in the broadband traffic. Close match between fiber availability and its uptick in investment would not be available in the first place, otherwise minimal means this indicator can be used to frame availability of broadband, fixed broadband networks of the highest quality across countries.

Georgia is a leader among these 9 countries reporting almost 20 subscriptions per 100 inhabitants, close to the E.U. country leaders. Moldova, Montenegro, Ukraine, they're slightly move and the E.U., 27 average in 2019. It is relative to a fiber subscription in relation and to total subscriptions have been stable in the E.U. for the past five years, despite from '18 to '19 year in the nine countries.

The total number of the fiber subscriptions, it is equal 37% of total subscriptions compared to 18% in total subscriptions in E.U. countries.

Potential for the 9 countries to leapfrog and to continue to have fiber led expansion of the penetration of fixed broadband exist, it is critical to ensure a resiliency at the national level dependent on the broadband mapping enabling infrastructure sharing and co-investment and efficient use of public resources.

Next slide, please.

Let's take a look at the affordability. 6 out of 9 countries have experienced price increases between 18 and 19. In line with the global trend of price reduction in mobile broadband services. 9 countries are staying employ 2% target of the Broadband Commission indicating mobile broadband is generally affordable in the countries.

Rate of price reduction between 18 and 19 for E.U. average is 5.9%, while average of 9 countries, it is 17.1%. 8 of 9 countries experience a price decrease for the fixed broadband between 18 and 19 in line with the global trend. Many countries are at 2% target of the Broadband Commission that requires a special attention.

All 9 countries saw an increase in the broadband account for 100 inhabitants from 15 to 19. All fell short of the E.U. average and the average of the Europe region. This far out paces above E.U. and Europe region. Fixed broadband subscriptions drew at an annual average by 8.7% from 15 to 19 and infrastructure gaps exist, but they are closing quickly, fueled by growth rates of over 2.7 times greater in the nine countries than those in 27 countries over the same period, and with those instruments offered by the regional organizations and financial instruments which had been mentioned, this expansion could be accelerated

even.

Next slide.

Growth in active mobile broadband subscriptions per 100 inhabitants between '15 and '19 is to advance the nature of the market and the mobile market in Europe, a study group showed considerable increase of connectivity of 490% from '15 to '18 year and about -- and room for further improvement is still existing and all countries fall under E.U. and Europe region averages.

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In terms of computer use in previous years, four out of the six countries have experienced growth in the computer usage in the years presented, but all are below the 2015 region of 80% of the individuals having used computers in the latest year.

Also accessing the internet is not only a choice to subscribe, it is inherently required the use of the device. Proportions of households with a computer is a metric of growth, where it has been negligeable in some cases even negative since 2015.

What are the main takeaways? Mobile has been cornerstone of agreement in the nine countries. There has been a spike in the adoption between 2018 and 2019. Despite fixed deployment, it is still lagging in terms of households and prices higher in the E.U. and Europe region average. Disparities in with device availability across increases access and usage may include advances in connectivity, it drove rates -- growth rates are improving for the penetration of the subscriptions as well as the device usage on almost all from 2019.

A substantial gaps, they remain in terms of final outcomes. This is the reason why that at ITU, it is continuing supporting -- next slide -- supporting the countries in diverse areas of their expertise, providing the national broadband strategies and broadband mapping, connectivity advice, the connotation of the IPv6, spectrum planning, are frequency coordination and capacity building. This is the reason also for the proposal of this forum, we're inviting all of you to refer to so many different analysis which are paving the way with the condition create work with the countries for the countries.

I'll mention a few last mile internet connectivity solution guide, the connectivity in education, digital skills assessment guidebook and recent report to be launched tomorrow on the digital gender gap and the way forward.

With, this I would like to thank you very much for

your attention and apologies for taking so much time for presenting this, but this introduces us into the variety of items to be discussed today.

Thank you very much for your attention.

Ladies and gentlemen, now It is my great pleasure and honor to move to the session 1, which is welcoming several distinguished panelists who will be -- who are representing different organizations, leading organizations of the region.

Starting with the Vice-Chair of 2021 and outgoing BERAC Chair of 2020 Dan Sjoblom providing us the insight into the discussion of session 1 which is dedicated more to the connectivity and ensuring meaningful and inclusive connectivity. We'll focus on connecting the unconnected which should not only be the issue of the infrastructure development, but also a challenge for the socioeconomic development.

The floor is yours. I'm handing over to you.

>> DAN SJOBLOM: Thank you. I hope you can all hear me.

I wanted to start by acknowledging the importance of International Women's Day, that everyone involved in the field of ICT, the whole community is aware of the topic and investing in the future and closing that particular divide.

I also wanted to say that somebody else mentioned earlier in the programme that in November, let's keep our fingers crossed that we get the vaccine to work well for all of us, that we can finally could meet in person. That's something that we have all been looking forward to I think.

Today I'm representing the Eastern Partnership region. It is an honor to have been asked by the Chair of the Eastern Partnership and also the Chairman of the Ukraine regulator to be his Vice-Chair this year. This is a tradition that we have had for a while to have European Vice-Chairs or E.U. Vice-Chairs to this organization.

Of course, my other hat is the BERAC hat you mentioned. With that one, I'm very pleased to see everything coming together here because of course both the Eastern Partnership and the ITU are very close strategic partners to BERAC.

It is an interesting possibility for me to sort of have the three coming together here in this particular occasion.

I don't know if everyone is aware, the Eastern Partnership includes the regulators from six countries, those are partly overlapping with the information provided

there by Jaroslaw Ponder, Armenia, Azerbaijan, Belarus, Moldova, Ukraine, and I can tell you that the current digital agenda for the Eastern Partnership until 2025 is focused on a number of objectives, and I mentioned some of them here. And the relevant topic of today, empowerment of national regulatory authorities for effective competition on electronic communication markets, it is the coordination of spectrum allocation for mobile 5G services, it is the reduction of roaming charges between the countries and also hoping to stretch over into the European Union. I think an interesting and important one, the expansion of gigabit broadband infrastructures for the Eastern Partnership Research and Education which is not to be forgotten I think.

I'm very happy to discuss the topic of the digital divide. Several speakers have said that the pandemic has only served to underline the need for robust and reliable electronic communication and digitalization continues to involve even more of our daily lives, be that on a personal, a professional level, it really shows the connecting of the unconnected is not only an infrastructure issue, but is also a very important socioeconomic challenge we need to keep very high on the agenda.

I think we do have the attention of decision makers of government level with the pandemic. I think this is a golden opportunity that should not be missed.

Saying a few things about Sweden, the country I present to know a little bit more about, we have some slides there, the infrastructure challenge here, it is if not solved at least fairly diminishing. We do not yet have total coverage, but we have very good coverage of both mobile and fixed connections and we are happy to have seen that they have mapped the challenge that the pandemic has posed in terms of new, different uses really well. But having said that, I think it is important to underline even here that we cannot forget the socioeconomic aspects and in particular with digitalization as mentioned, there is still too large groups that are not internet users or not happy, confident internet users, they total up to maybe 10% of the population, way more than those with a connectivity issue. So the situation we're facing, it is very important to be aware of, to keep society together, we have a big challenge here as well having come very far with the infrastructure. I'll just give an example, we are hopefully as I mentioned approaching the COVID-19 vaccinations and health authorities there, they have a very urgent need to reach out to all of the population about the 18 that they have

decided to get the vaccinations and to do that, they try to do it in the most efficient way, but of course, given the lack of use of internet, it is impossible to do it only through digital only, that's just one example.

Another example in the pandemic, of course, when talking about the vaccination passes or certificates, whatever they may be, really we have a huge challenge in terms of finding a standardization means that applies not only nationally, regionally, globally, and to have that done in a way that's achievable and usable to everyone that needs to be covered.

There are many issues that stand between us and getting everyone connected. The reason people are not connected, it is very diverse and of course that creates the problem that there is not just one solution where it needs to be many solutions, of course there are financial reasons, affordability issues, both to access and terminal, computers. There is a huge issue of lack of knowledge and this may come from different reasons, elderly people, language barrier, there may be legal issue, you may need access to other infrastructures like bank accounts similar to get their access to internet and finally, of course, not everyone is super interested. They may need to raise awareness of the benefits of being connected. Here I think there is really a huge scope for bodies like the ITU, the Eastern Partnership, BERAC, many other great organizations to act as knowledge resources for governments and for other institutions across our regions, sharing experiences between ourselves like today is really good, very important, how to reach out. We can always learn from each other.

Governments hold the key to many of the measures that can help us bring close a little bit the digital divide from funding to regulation and it is going to take both and many more things.

An example I'm happy to share that we and PTS, my organization in Sweden, have had as a mandate for some time, it is that we have funds and a mandate to particularly improve the situation for disabled, elderly users. We do this by on the market, procuring services to allow them better access to the digital society and this is something I'm very proud of. I think when we talk about connecting everyone, we really should mean everyone.

Coming back, there's work on broadband mapping systems as I mentioned earlier. This will not only foster the development of infrastructure but it will also help with the identification of unconnected areas and the development

of appropriate universal service frameworks as well as the promotion of innovative solution for meaningful connectivity and infrastructure development is going to be key, but it needs to be supplemented with other activities and it needs to be -- it needs to be mobile and fixed together. It is not one or the other.

The final thing I would say, keep up the good work, involve all stakeholders, work together and we can close the digital gap together.

Thank you.

>> JAROSLAW PONDER: Thank you very much for this introductory note.

Let me move to our next speaker coming from Slovenia, Acting Director General of the Director of Rights for Information Society and Informatics Peter Grum from the ministry.

Peter, the floor is yours.

>> PETER GRUM: Thank you.

Could you please share the presentation?

Thank you very much.

Good morning also on my behalf. I will try to be as brief as possible as not to disturb the timeline of the event too much.

My presentation -- as you can see, my presentation title, it is are we a two-speed digital society. Basically we're asking ourselves, have we done enough to provide our population with equal opportunity in the digital world and how we're going to tackle these issues in the future.

Next slide, please.

Looking at the data -- could you go through the slides -- thank you. Thank you.

Looking at the data, Slovenia is currently ranked in the 16th place among all E.U. Member States by the DESI index for the overall ranking in 2020, and we're also ranked 16th in the category of connectivity.

And looking at the situation in Slovenia, there are currently around 867,000 households in Slovenia, out of those, 77% have a next generation of fixed network connection which means about 200,000 households don't have such connections. The main reason for such a gap, it is in the fact that potential private investors recognize the very disperse population as a key obstacle in creating sustainable business models and therefore we're facing digital gap between urban and rural areas of Slovenia as I have mentioned in the opening, the presentation.

Next slide.

Yes. Of course, we are aware that -- aware of the

studies on the socioeconomic impacts of investing in broadband infrastructure which established in the independence in the growth of broadband connections and the rise in economic growth as well as positive impact on the employment and productivity and also the COVID-19 crisis has shown that the connectivity is essential for people and businesses in the E.U.

Could you please go through the slides? Thank you.

As I said, we have seen the connectivity is essential and businesses in the E.U. and broadband infrastructure for internet access is one of the key factors of the economic and social development and therefore its construction definitely is in the public interest and is recognized as such in Slovenia. The Government of The Republic of Slovenia has been cofinancing the construction of open broadband networks through development funds since 2007 with 5 projects up until now.

Next slide, please.

Returning to the current figures, we said earlier that 200,000 households don't have next generation fixed network connections. Out of those 200,000, there is a market interest expressed for 133,000 households in Slovenia and the remaining 68,000 for 13,000 households out of those remaining 68,000 are still to be built from the recent existing government projects that I have mentioned in the previous slide and that leaves us in the end with 55,000 which presents 6.3% of all households in Slovenia without the next generation of fixed network connection in the near future. We call them white spots.

The plan for the development of next generation broadband networks receded 4%, we have a 2.3% gap between the plan and reality, which means we have to continue with further activities in that field in the future and we plan to cofinance the construction of those also under the recovery and resilience fund and the multiannual financial framework.

Next slide, please.

The goals of the 2025 gigabit society strategy that's current under preparation and will implement the European goal aims at gigabit connectivity for all major drivers of socioeconomic development such as schools, transport hubs, major public service providers and digitally intensive services until 2025, secondly, continuous 5G coverage for all urban areas and all major land transport groups until 2025 with the intermediate goal for 2020 which is 5G connectivity available as comprehensive commercial service in at least one major city and thirdly internet access at a

speed of 100 megabits which can be a greater than 2 gigabit speed for all households in rural and urban areas.

There is another public tender for a cofinancing of the construction of the broadband networks in the final stage of preparation and will be published soon and in this call for proposal we will radically increase the economic sustainability of projects focusing on remote, rural -- remote rural households and areas that have not yet been the subject of such cofinancing.

Next slide, please.

Can we just go -- okay. Thank you.

We're aware that building networks alone is not enough. It is necessary to raise people's trust and utilization and the use of internet services. In this category, we're only in 22nd place according to the index so it is our goal to leave no one behind, but so we pay special attention to those who do not know how to take advantage of the digital technology.

In slow van I can't, we tackle a prominent digital illiteracy among people over the age of 55, among the inactive, disabled, the less educated, and the population in rural areas. Also some working generations are still burning issue, especially considering a gender gap among them and we're currently preparing a project with which we wish to stimulate the demand for the use of digital services and the project includes promotion of activities through which we'll try to raise awareness of the importance of digitalization and digital transformation of society. Purpose of the project is to promote and increase the use of digital technology and the internet, promote the digitalization of society, promote the use of electronic services and Information Society services, such as eGovernment, eBanking, eHealth, and in another project we're currently preparing, we're seeking for NGOs that will implement training programmes for people over the age of 55 for the acquisitions of knowledge and the development of competencies in the field of digital technology. The aim of this call, it is to raise eSkills and eCompetencies and to stimulate the demand for broadband internet access services.

Next slide, please.

Last one.

Thank you.

So I believe we all believe the future is digital. Slovenia believes it is essential that we're well prepared for it and we believe the projects that we're currently implementing and those that are in preparation stages,

they'll take us to our next level.

Thank you very much.

That's all from my side.

I give the word back.

Thank you. Thank you.

>> JAROSLAW PONDER: Thank you very much for the introductory remarks and for the great overview of what's happening in the country and in the context.

Now let us go to our representative of the greater authority of Turkey.

I'll hand over to you.

>> MEHMET OZCAN: Thank you so very much.

Can you share the presentation, please? The first slide, please.

I would like to salute you all, thank you to all colleagues for inviting us to contribute to this forum and thank you for all that contributed and before I start my presentation, it is March 8, let's take this opportunity to celebrate the International Women's Day of all women and particularly those participants of this event. Unfortunately we're still among the socioeconomic group with problems with regarding connectivity and I hope it will change soon.

Next slide, please..

Let's focus on the divide, adoption barrier, possible measures to increase demand. Some has been said but given the importance of the issue I would like to spend some time on this important method.

Then I would like to share with you some selected initiatives and regulations in Turkey that are titled to specific groups to increase connectivity and inclusion.

Next slide.

The internet has changed the way we live in almost all aspects and it is no longer a luxury good but a need and this terrible pandemic showed us once more the importance of digital services and the need to find solutions to remove barriers. Unfortunately not everyone is lucky enough to enjoy the internet, and despite the increase in subscriptions and mobile coverage globally, still out of the world population, half is offline and the urban rural group is still wide in some regions and the gender gap still exists. The next slide, please.

The internet adoption barriers are plentiful throughout the world in many regions. Affordability, it is still a problem everywhere.

Next slide.

Digital divide is multidimensional issue, yet it is a

part of two main aspects, a problem of demand or supply, supply-side issues directly relate to physical access and demand side issues are predominantly social commitment of economic. I will not talk about the physical aspects since we're talking about the socioeconomic challenges.

So, affordability of course, high prices for services, user devices, the ability to use the digital services and technologies and of course its developments with various opportunities and benefits of being connected, the relevant content, services and of course concerns regarding privacy and security issues as well.

Unfortunately, the disadvantaged groups here are those who have problems in other aspects of life as well. Female, low-income groups, rural population, elderly people, People with Disabilities and I will literate.

Next slide.

What are possible measures? Due to the limited time, I will not talk about all possible measures, I have a list of some on the slide. However, I should say that the problem is clear that those who suffer are known and that for any solution, it should be targeted to those marginalized groups and with the cooperation of all stakeholders.

Next slide, please.

As for Turkey, as you know, Turkey is one of the largest markets in Europe and the total number of broadband subscribers are more than 80 million. Majority of them are mobile, however, fixed broadband subscriptions are increasing in recent years and I will talk about a reason behind this increase. I would like to utilize my time by sharing initiatives and regulations in Turkey that are related to inclusion and affordable aspects of the digital divide.

Next slide, please.

Making disabled a special focus group in IC regulations dates back to 2011, since then we have taken some decisions regarding disabled people and encouraging operators to provide affordable and specific services to these people. In 2018 a decision compiled measures for People with Disabilities under a new regulation, the measures in this regulation are not only related to accessibility, but also targeted to inclusion and connectivity of disabled people with affordable prices and even discrimination and given the time limit, we will look at these measures. Operators have more than 200,000 subscribers, they're required to give 25% discount to disabled people on every services that they provide. Offer

data only plans for hearing impaired and prioritize software and designs developed or used by the disabled people.

As a result, as of now, more than 2.5 million have benefited from the discounted rates, data plans have been sold and in total, 2.5 million disabled people combine benefiting from the measures foreseen in the regulation.

Next slide, please.

Another example, about digital internet offers. Within every country, socioeconomic conditions may differ by region which will probably result in variation of internet penetration rates and the offers ever some specific regions and Townships within a country has internet adoption and the digital divide as well. As an example, we have approved the wholesale offers of the operator that are targeted to low-income groups living in townships with global penetration rates in 2017 and the next year and this regional internet offer resulted in connecting more than 800,000 households, now households as of 2020 and considering the relatively large average household size in Turkey I believe this number becomes more meaningful.

Next slide, please.

Finally, I would like to talk about the internet design offers, we have a special cultural meeting in the Turkish context, Bizden, if I try to translate it to English, I would say the internet is on us. The internet is a plan that was offered by the Telecom operator within the scope of the ministry's project aimed to increase fixed broadband penetration in Turkey and for the first time it was approved in 2017. The goal of the project was to increase broadband penetration with low prices and the target group was those who never had internet subscription before or who had terminated subscriptions three months ago.

At the outset, there was 4 megabit a second with the data usage alone and this plan, it was offered for free at the wholesale level and very low price, around 5 years at that time, at the retail level.

In other words, this entry level price, it represented only 0.9% of the median household disposable income in 2013 and the data alone shows in the course of time that prices remained very low through wholesale and still affordable with the retail level.

The incumbent operators will support the ISPs and enabled them to offer these plans at relatively low prices compared to the other offerings and available to the

internet, the offers in all areas of the FTTH and FTTC networks enabled anyone in the target group to benefit if there is physical access to the Telecom infrastructure.

Next slide.

The results of internet offers, they're encouraging. The total number of more than 2 million new subscribers has accelerated fixed broadband household penetration growth in Turkey, from API 2017 to July of 2020 internet campaign activation was 22% of the total retail fixed broadband new subscriptions, that's almost 1 out of every 5 new subscriptions, it was by issue of the internet offers, and a third of the internet sub describers opted for outlines in the course of time and they refer to continue to enjoy the internet by upgrading their internet pictures and even more.

To sum up, the internet campaign, it revealed the following results, it accelerated fixed broadband penetration in Turkey, affordable entry level plans enabled new subscriptions, ISPs, gained subscribers at retail level and the existing infrastructure is utilized more.

I believe that the success can be replicated or taken as a model in developing countries.

Last slide, please.

I thank you all. When I finish my presentation, I would say that being connected, unconnected has an effect on every aspect of life. As it was already stated by the Director of the Digital Development at the World Bank, connectivity shouldn't be seen as a problem alone but integrated to all Economic and Social Development Agendas so that we can move forward.

Thank you very much.

>> JAROSLAW PONDER: Thank you for that overview of Turkey, exciting projects with clear impact with great interest taking a look at the special programme and taking a special look at the disadvantaged groups of the society, including the Persons with Disabilities with the clear role of the regulatory authority with your measures have been reconfirmed that you can make a change on the ground.

Let's take a look now at the anchor of the discussion, the views of the private sector and I have great pleasure and will invite to speak the Director of Public Policy and Internet from Telefonica, Christoph Steck.

I'm handing over to you.

>> CHRISTOPH STECK: Thank you. A great pleasure to be with you. A great pleasure to be able to speak on this fascinating topic.

The good thing on speaking after so many distinguished

colleagues is that many of the things have been said already. I have a couple of slides and I would like to show you our view on how to achieve inclusive digitalization and connectivity more specifically.

If you move to the first slide directly, as you know, we have operated across Europe and Latin America, so we actually have a good experience across really developed markets, for example, Germany and markets that are more developing like in Latin America.

We see the whole bandwidth of what you can do basically on the digitalization. In the end, I would agree to what's been said before, that we have to take this really holistic, broad approach to achieve inclusive digitalization and from our side we have in the past published a couple of ideas on that and what we call a digital manifesto and we have basically tried to show how to achieve with right policy measures and on behalf of private investments an inclusive digitalization.

I would focus now in the next slides a little bit more on the connectivity side and I think especially around these three areas because we feel that if you do the right policy and regulatory changes and we see what's happening already on the business side, where the business model is evolving and you factor in technology innovation, you have really kind a very positive mix to bring things forward. I think that we have seen already that Europe specifically is not doing incredibly badly if you compare internationally on digitalization and specifically on connectivity but nevertheless we have to be honest that we see a lot of gaps and divides across Europe as well. That means between different countries, but it also means inside of countries between some other rural areas and more populated areas as mentioned, which is maybe the key divide we see across all countries.

Basically our proposal would be to change policy to attract more private investments in country infrastructure because we have to be honest and the public subsidy can help in many regards, the key investments need to come from the private sector for the missing connectivity and as I said, we see new especially wholesale models arriving on the market and I will show you an example on that as well and last but not least there is also quite the technology change going on the way of how you build networks.

I'll show you a couple of examples around the three angles.

Next slide.

Regarding policy arrangement in innovation, I would

really like to stress innovation here. Honestly, we have done not badly in regulating existing infrastructure in the past in Europe, we have done well in opening up the existing infrastructure but we have not done so excellent in attracting new investments.

Therefore, we at least feel that there is the space for kind of more innovative thinking. I will show you the example here and I show you that, because we're always asked, when we -- whenever we show up, how would Spain achieve this fiber miracle, how did they go in less than ten years of being a lagger to being the leader on fiber connectivity in Europe and actually in the world. I think only Japan, South Korea has more fiber infrastructure than Spain currently.

The reason is very simple. This is con by the regulation, as simple as it is. Basically what the Spanish regulator understood quite well, it was that to attract investments in new high-speed infrastructure you would need to kind of incentivize them as simple as it sounds. Basically the regulation focused on opening up physical infrastructure so ducts, in-house wiring, so on, where you had regulated obligations, but it did not really give any form of wholesale access to services above a certain speed limit and it was at the time 30 megabits and because in 2009, 2008 when it started, that was basically where you get the copper infrastructure, the idea was basically when you go to fiber you will be -- you will have no wholesale access on the regulated basis to the services. That basically kicked off the interesting infrastructure base competition between cable and fiber infrastructures and in the end this leads to a situation today where you have over 600 municipalities around 75 to 80% of the population and they live in areas where there is competition between infrastructure so that you can choose between various next generation infrastructures in Spain and there's a positive impact on the prices before someone has shown the prices for connectivity in Spain, which is actually very competitive.

So the trick behind all of that was that really investors in companies could differentiate on quality from competitors because we could for example Telefonica side offer products of connectivity with more than 100 megabits per second and our competitors in Spain, they had to follow and they had to invest also and this kicked off a positive spiral of investments. That's the trick. It was not more, not less than that so basically creating this kind of really impressive achievement. I would say, you know, we

need more of that.

I would give another example, not on the slide here, we're currently starting to do 5G options across Europe and to be very honest, I think we have created in the past, in 3G, 4G a tradition to kind of go for maximizing profits out of spectrum options in Europe. I think it has been really great for financial Ministers across Europe but it has not been so great tore people because in the end, you know, any euro invested in spectrum, it is a euro misting in investment infrastructure and we have seen delays in Europe in creating the rollouts because on the mobile side because of the massive numbers and sums paid by operators to finance Ministers. In Europe only we're speaking of the sum of more than 150 billion euros paid to finance Ministers and you can imagine where Europe stands today on mobile connectivity if it had invested that instead of networks.

I think we have to think about the really out of box approaches. Otherwise you would not be able to get to this really ambitious target, especially in the European Union and Europe -- European Union has missed any kind of meaningful broadband target over the last year. We need to kind of step out of the comfort zone.

The next slide, please.

So that's a policy side.

Let's talk about business innovation as well.

The world out there, it is not standing still. Of course, you know, operator, they want to connect people, that's our core business. It is not that we don't want to connect, it is just that seems, you know, the economic equation, the business case, they're not working. Especially when we speak about rural countrysides where the rollout costs are usually higher and then you have also usually less income or less people that pay for connectivity so basically the equation is really complicated and you can imagine what that means in Latin America, we'll show an example in a second.

Basically what we have done, this is very recent what you see on the slide there, this is some announcement, the Telefonica has done over the last few months. We have tied up with financial investors like Germany, a financial investor from Canada, Brazil and we have basically found joint ventures that are specialized on giving rural connectivities. It is not for, you know, urban areas, this is just for the rural countries and we tried to create new investment vehicles to be able to invest long-term in fiber infrastructure in the crucial side. You see the numbers

here, I will not go in details, you see that we're talking about significant investments of billions in rural countryside and we also speak about major improvements of millions of households to connect through the new investment vehicles.

This is one example to show that on the business model side we need to think out of the box and create more open wholesale based investment vehicles to be able to attract investments because actually today in the world there is a lot of money out there for investments and we have not really connected with the need of investors with what we can create basically with infrastructure investments.

Next slide, please.

Also technology will help us a lot. A spotlight on that here. Of course we are seeing developments, historically, they're very good, integrated network architecture, that means everything coming out of one hand and basically invested very uniform across the whole footprint and this is kind of changed to a much more of an architecture, more softer of a network. This has amazing effects on what you can do on flexibility forks.

I show you here just a little bit something on 5G and we believe that for example OpenRAN in 5G is a game change, it will allow us to go to go to a more modular architecture and provide an open API to connect technologies and various providers as well as to rollout the networks.

We have actually -- this is just a spotlight here.

We always think that innovation comes from development markets, here, OpenRAN, when the first deployment of OpenRAN globally was in Peru, we started a similar project to open access but with investors from regional development banks and Facebook, it is called internet for all and it is just a specific operator for the rural countries and again we have experimented on the open side of OpenRAN a few years ago. In emerging markets, they're great places to innovate because we have much more complex equations as I said on the business cases.

Another example of how things are developing, we feel that there is a great chance in Europe to create a much more distributed cloud infrastructure and 5G especially, it is not able to begin to get to our customers if we can't deploy the capacities, that's a great chance for Europe using the transformation and to Mr. That edge computing possibilities that would give us a totally different -- a differentiation towards other regions but also towards the use of 5G because it brings agency as lot.

This is an example of how the architecture of networks

is changing and is becoming more flexible, more softwarized.

Next slide.

Then of course, last but not least, digitalization needs to follow, one thing was the connectivity and how to do the connectivity and how to show you this kind of spotlight on what's going on there, then of course I totally agree to what others have said already, we have to digitalize much more and focus really on the post pandemic time on digitalizing and we have a function, the digital building back better, there are lots of ideas, 100 pages of ideas what, do in this regards, I invite you to look at that. I won't go in details.

Basically what we should do, it is to focus on public administration which focuses on especially digitalizing small, medium enterprises, what we have seen, while bigger enterprises, they're quite advanced in digitalization, the smaller business, the medium sized businesses, lacking cloud infrastructure, lacking the usage of artificial intelligence and lacking data-driven economy, services so, basically we should kind of push to digitalize the businesses to create demand and the same is true for administrations. Again, it is a little bit sometimes shameful how we have forwarded -- how we have with the pandemic, with the same tools we used hundreds of years ago, against the last Spanish pandemic, we have not used the services a lot across Europe and do that, we're not able to do so, we're not prepared to do so.

Whale there is positive examples, I think overall we should be honest ourselves to do much more digitalized in public administration and we have a great chance with the recovery funds after the pandemic to do all of that.

We should focus on key technologies, driving innovation, we know that, we're not very good in Europe in innovating and creating leading digital businesses and we're getting better and actually the latest trends we see, it is that there are foreign investors coming in to buy European start-ups because there is great skills and innovation in Europe as well. We're catching up here. We have to focus maybe in a better way on new key technologies like artificial intelligence, quantum computer, blockchain, whatever, and focus on creating public private partnerships around this.

Last but not least, it was mentioned, the skills, the life learning environment already, we will have to upscale and reskill a great part of our population, numbers are coming out of studies show that 60% of our children will

work in jobs that haven't been invented today. I think we have to sit down, have a serious think on what kind of skills we'll need to give to our children and we'll have to include the businesses much better on that. If you're talking about life-long learning, it is not 25 years or 30 years or whenever, it will go on and you will need to kind of learn on the job and during your career working.

I think we have to include basically the private sector and there are many examples on that as well.

Basically, I stop here. I think that's -- that's basically just a small spotlight on the good advantages we have done on connectivity and digitalization and also a couple of ideas how to innovate even more.

Thank you very much.

>> JAROSLAW PONDER: Thank you very much for this input, Christoph. There are lots of good suggestions I think for Europe and also for those who are catching up with the connectivity and looking for the good model to accelerate the investment in the infrastructure, next generation f.

This brings me to the next distinguished speaker of this session, coming from the Worldwide Web Foundation and working for many years on the affordable internet.

So I'm handing over to you.

>> ELEANOR SARPONG: Thank you very much.

The difficulty about being the last speaker is that a lot of things that you want to say has been said already! I will try to reiterate what's very important.

It will be great to have my slides up.

While we're waiting for that, I wanted to say thank you to the ITU for organizing this session, happy to be the only women on this panel flying the flag on International Women's Day, hoping next year we'll have a similar panel on International Women's Day we'll have 50% representation of women. The previous speakers have all been great, but it would be great to be able to have that representation and the voices of women captured.

I'll speak very briefly on the digital divide in Europe and meaningful connectivity.

On the next slide, just going to touch on some of the key statistics mentioned already and also speak to what the key investment gaps are and some of the case studies that we can look at in order to ensure the inequality we're seeing is eradicated.

On the next slide, please.

You.

So I work for A4AI, I'm the co-lead, this is an

initiative of the web foundation and we're the broadest technology alliance working to drive down the cost of broadband. We do this working through coalitions, with private sector, Civil Society and governments as well. We do this underpinned by great research and some of which you have seen today with the work we have done with the ITU and a couple of other organizations as well.

Next slide.

What's the State of connectivity in Europe? Some of which have been mentioned, I think Europe is doing very well generally across the board when it comes to connectivity 4G, we have seen 5G options which already are happening and we have also seen a lot of countries have met the affordability target. It is important to know that there are still significant population of Europe that's unconnected.

For instance, 36% of the population in central and Eastern Europe is unconnected compared to 19% of Western Europe and also and I need to speak also about the gap of women, women make over 60% of the European employees, but only 17% in the ICT workforce. There's a lot of work that needs to be done in the area of STEM and also in sharing that women are equipped with the skills in order to compete. Since we have a COVID-19 era, it is important to talk about the number of children that are unconnected at home, there are 42% of 3 to 17-year-olds in Eastern Europe and Central Asia that's unconnected.

Next slide.

We have heard from earlier speaker was a digital divide in Europe. I want to reiterate this point using this slide. We have about a third of people in rural Europe with no computer access. Also another reminder, a quarter of people in rural Europe do not have internet access as well. The gap is more pervasive in Eastern Europe as of the countries on the right-hand side and so there is a lot of work that needs to be done. It is great to hear the initiatives that some area speakers have spoken about.

It is very important to have a targeted approach to closing the digital rural and urban divide.

Next slide.

In addition to that, the digital gender divide in usage, it is also a real concern. You know, surprisingly, this is a concern across all countries in Europe. Some countries are doing much better than the others. I do not want to name any countries. It is very evidence on the slide that there is a lot of work that needs to be done to

ensure the digital gender divide and usage, it is addressed through a targeted intervention.

Next slide, please.

So for us, the alliance of affordable internet, we have realized that basic access, it is not enough. We need to look at the quality of collection that the person has, the quality of devices they're using to connect to the internet and the kind of experience that they're having.

So we came up with this empirical research, we came up with this definition for meaningful connectivity, you have meaningful connectivity when you use the internet every day, using an appropriate device and an entry level, it is a smartphone and with enough data that's unlimited data, unrestricted data, and then a fast connection. In this case, we use 4G as a proxy for fast connection as an entry level threshold.

In addition to this, it is important to note that the meaningful connectivity target, it is constructed with gender in mind.

This is a very, very important point. .

We bring in the gender angle in meaningful connectivity. You see a huge disparity in countries that were previously doing well.

For example, if you take Colombia, when you look at the digital gender gap in access, it is 1%. So yeah, it is 1%, it means that both men and women are able to access the internet at a very equitable rate.

When you apply the meaningful connectivity target, it becomes 19%, which means that even though women are accessing the internet, they are probably getting poor quality access and also the devices that they're using, it is also not at par and, you know, not good quality. The experience that they're going to have, it is going to be very, very different from the men. That's why for us it is important to look at the meaningful connectivity targets in a very holistic way.

Next slide.

What does it take to make sure that the entire world is able to get the kind of meaningful connectivity speeds and data that we have been speaking about. By 2030 we're supposed to have the investment of 428 billion and every time you members of the juries this amount, some people always exclaim. The point is, if you think about it, the world spends about the same amount, 28 billion on fizzy drinks a year, if we tighten our belt and decide to fast off of fizzy drinks we can connect to the entire world with 2030 in a very short period of time.

Next slide.

A deeper dive on what it would take in Europe specific, it will cost about 34 billion to be able to connect the entire of Europe by ensuring that everybody above the age of 10 years and above is able to connect to the internet and we have done a breakdown there, I do not want to go in details, it is on the slide.

There's a lot of work that needs to be done on a system infrastructure and also on meaningful infrastructure in order to make sure that we can close the gaps.

Next slide.

Infrastructure alone is not sufficient as we have heard from earlier speakers. The issue about affordability of data, of devices, it is very, very crucial. Also digital skills, we have talked about it, in earlier speaker, they have spoken about upskilling and this is very, very important because we need to see that the content that's created is not just being used by -- it is not just relevant to the various groups -- relevant to the various groups but one to participate and contribute to and there has to be a very targeted approach in closing the digital gender gaper gap and looking at the area of skills and ensuring demand as well.

Next slide.

We need to keep reminding ourselves that even though we're privileged to have this session, there are lots of people within Europe, 36% of Europeans who are not connected or covered. As we have seep, the internet is a lifeline, you need to make sure that we have policy, regulation that addresses some of these significant groups and ensure that we're able to bring at least 4G coverage and usage to all of the populations that do not have this and try to stop the digital poverty that a few other people, populations are seeing across Europe.

Next slide.

This is my favorite slide of all. It talks about solutions. There are three areas I feel that we need to look at if we really want to tackle the digital inequality, and the first one, it is about increasing partnerships to fund infrastructure and encouraging new connectivity models. I was very excited to see that Telefonica, the presentation, he talks about internet through partners and we have been monitoring that, it is a new partnership that you see and that's also increasing connectivity especially rural areas.

I also wanted to speak about the fund, for instance, the connecting Europe broadband fund, I feel this is a very

exciting initiative, it is raising about 600 billion euros and by June 2031 and it will be targeted to rural and sub rural areas. That's a great initiative that I think that we should be looking out for.

The second point I wanted to mention, it is about the need to push for targeted interventions on accessing skills. You know, again here, I have listed some really great examples from Italy and from generally what's happening in other places in Europe. One area that I wanted to mention, it is about the area in France, it is an accelerator that has been looking at various programmes for those who come for fund, they fund up to 80% of programmes if you can show that there is a lot of -- that there is Diversity & Inclusion in the way that you gather your -- that you develop your programme. I think it is a unique way to ensure inclusivity and the way that programmes are developed.

Finally, I cannot stress enough the importance of ensuring that there's inclusive data collection for policy planning and making sure that we capture the right groups that are marginalized, that are digital poor, and to make sure that the data we're capturing, it captures migrants, refugees, you know, we talked about senior citizens and also ensuring that we have people, Persons with Disabilities and communities as well.

It is very important to ensure that while we're capturing this data we're monitoring how much progress we're making to ensure that they have not been excluded from the digital space and that there are developments and contributions that are captured in the way that we develop programmes across the board.

In a nutshell, I think that there is a lot that's been done already in Europe. Just taking some of these factors into consideration, we'll be able to close the digital gender gap across Europe.

Next slide.

Thank you very much.

Back to you.

>> JAROSLAW PONDER: Thank you very much, Eleanor, for this great presentation.

It is really exciting overview of what's happening and the amount, the resources required foreclosing the gap.

I think there is a lot of things which we might address and we'll be doing this during the two days of the discussions. I request all of our speakers and the participants to communicate in the chat box. We are running a little bit late. This is the reason why we will

now move to the second session of the forum.

It will be focused on the rural divides.

Let me thank very much all of the speakers and invite in parallel the participants to put any kind of questions in the chat box to have the interaction and we'll move due to time constraints to the second session of this forum.

With this, we thank you and invite the speakers of the second session and moderator of the second session who is ready to take over with a special background which he has, welcome all of the next presenters and the participants.

The floor is yours.

>> ISTVAN BOZSOKI: Thank you, and good afternoon to all of the participants.

I had to switch on not only my camera, but also my microphone. First, I'm sure it has been done already, but in my name, I wish happy Women's Day to all of the female participants and I'm happy because in this session we have the gender equality, we have three speakers, female speakers and three men speakers.

The session title is connecting rural areas in Europe, regional and national approaches. The focus of this session, closing the service divide in rural areas in Europe through last mile connectivity and other projects. Since we don't have too much time, I want to jump into the practical presentations.

The speaker is from the ITU, a technical coordinator for the spectrum management division from the BDT. She is the main person dealing with the last mile connectivity issues and the last mile connectivity toolkit.

I see that you're there. Happy Women's Day to you.

Please start your presentation.

>> AMINATA AMADOU GARBA: Thank you. Happy Women's Day to everyone.

My presentation is on sustainable last mile connectivity solutions. I will be talking in general on the last mile connectivity solutions.

In the next slide, please.

This presentation, it is based on the last-mile internet solutions guide which is a report from the ITU which was published last year and it will be available on this link. You will have the slides and you can take it in more details later.

Next slide, please. I will start by motivating on why this is important. We know that this is according to the last ITU statistics. There are 50% or there is 50% of the world population that's connected which means that the rest of the 50% is unconnected. If we look at the regional

level, Europe actually is doing fine. According to the statistics, Europe is the region where you have the most connectivity, 83% of the people are connected. That means you have 17% of the people that are unconnected. When you compare this to the Africa and Asia-Pacific, that is where you have the less connected people. In Africa, about 30% and in Asia, 45%. Asia-Pacific. In these continents, you have less than half. We consider Europe is doing pretty well, but maybe not good enough. If we look at -- if we try to Zoom in on the 17% unconnected, I don't have the statistic, they're the statistics about ITU and you see that most of the peoples are in the rural areas. What it tells us, it is that actually the gap in other regions is mainly about rural and urban areas. That's uniform. It is perhaps more important to look at the gap between rural and urban than to look at the gap between regions because it is about the same problematics in all of the regions. If we were in the next slide, in this solution guide, it has been presented four different steps if we want to close the connectivity gap and in this closing the connectivity gap, again the rural area has been one of the focus of this guide. The first step will be to identify the people who are not connected. When we do this exercise, we see that they are in rural areas, hard of reach areas. In mostly all the countries, if you go to the capitol, people are connected, most are. At least you have the digital connectivity or the coverage available.

In the next step, it is once we have identified the people that are connected to review what are the options which can be used to connect these peoples. From these option, in step 3, it is to select what is the most suitable option looking at the constraints of the region. If there is one area that will not work, it depends on the concerns of the locality to take the solution that fits that locality.

The last step, it is putting interventions, we do in many cases, we do know the solutions, but now we need to have interventions with mostly regulations and policies so that the solution can stay and can be sustainable.

The next step, in the next slide, please, I have been talking about identifying the population who are unconnected. We have identified 2 different approach, the top-down and the bottom up.

The top-down, you want to identify a large area for example, and in the bottom up, it is -- you'll identify a specific locality and you go to that locality, you do some drive test, you look at what's the income of the locality.

It shows that the bottom-up is a more concise approach and the top-down will allow you to be able to do this in a larger scale.

You won't be able to do in the bottom up.

In most cases, you have to use this tool, they are actually compatible and even complementary, the top-down allows to you look at the bigger picture and the bottom up allows you to focus on the specific locality.

In the next step, in the next slide, we're showing some examples of top-down, in the example here, you see that report, bottom up as well, and this is from the bottom up, you have the different locality, infrastructure in places which are to be connected.

We have many examples here.

I go to the next slide. In the next slide we show here some comparison where -- of different solutions, here these are wireless solutions. How do we compare -- so this is where we're in step 2, we want to give you the options. By reviewing the option, it means that we want know which are the different options available.

What are the characteristics of the options? Here we have shown the comparison based on the quality of service, based on the reach, so depending on how big is the locality, the option will vary as well. Based on the CapEx, OpEx, how much it costs? In rural areas, most likely you want to look at low-cost options. So this is important.

If you look at for example community network, you want to look at OpEx, minimize that as well as the CapEx, depending on the options, indeed, it is important to look at the issues and the infrastructure required to put in place this technology but also is it suitable for the rural deployment? In this comparison, this is one of the most important for this specific presentation, to look at the suitability of the option in rural areas. The spectrum licenses requirement is shown to be important because it has been a bottle neck in some places, especially in rural areas. Some interventions can help to make this more accessible. Finally, the access divide. In the next slide, we have to understand comparison, but for wired access and just skimming through the slides, won't go in detail but these are available to read later.

Finally, if that's the end of what I'm showing here for the second step, it is reviewing the options, it means comparing the option and to ensure which are suitable for this rural deployment.

In the next slide we go to the step 3 and in step 3,

it is once we have compared the different options which ones are most suitable. It is now selecting based on all of this because a lot of options can be actually possible but which one is the most suitable for this region? We have to find, we have identified, not defined, 5 characteristics or criteria and the first one, it is affordability. Affordability, it is very important, it is really asking yourself is the user able to pay for this.

The biggest mistake, which is made for affordability, it is that affordability, it is done at the country level.

Even if the GDP of the country is 1,000, when you go to rural areas, maybe it is 200. Therefore the affordability, which is set for the country level is not really affordable for the rural area. When you look at the granularity of the rural areas, you say is this affordable for people living in rural areas. That's the only way to bridge this, as well as looking at affordability at the country level, these people are missed out.

In the second one, it is the usage. The usage is different. In the city, people are using it for other things, in rural areas they want to use it for other things, they want to use it for specific applications which is important for them. Therefore, we need to see what is the usage, how much will they be using it, perhaps they do not need that much connectivity, they need it for specific applications and it is important to identify this usage in order to provide connectivity which they need.

The third one, the financial viability, this is a completely different thing than affordability, in the financial viability, when looking at the service provider point of view, the service provider comes in for connectivity, is he able to be viable, is the income of the people enough to pay for that connectivity? Otherwise the service provider won't be viable. Even if this -- even if this service provider is the local community, they need to be viable. We need to now look at the intersection of affordability and financial viability because we need both.

In the structure, it is important, it is to say is it a commercial entity, non-commercial entity what, are the policies related to each and how can we help to provide these policies and regulations.

Finally, the sustainability which goes a little bit beyond, I can't go in all four, but going beyond, how can we have universal access, how are these sustainable.

I think I'm out of time. The last slide I want to show here, it is about some of the interventions -- no, the decision making taken in account on this criteria and

quickly I'll go to the last slide which is about extending some interventions.

I think this is one of the key to be able to have connectivity in this rural area, it is do we have interventions, regulations and policies which can yield a lot of connectivity in rural areas to be sustainable. An example would be subsidy. If the service provide senior not viable, are they subsidies to help them be viable? If it is not Ray affordable, is there subsidies? It can't be all the time, it has to be limited on time. Are there special licensing which allow it to be affordable and viable. There are so many -- I think in the report we have many pages of this interventions and we think that this is key if we will achieve connectivity in the rural areas. That's the end of the presentation.

Back to you. Thank you.

>> ISTVAN BOZSOKI: Thank you. You managed to keep the presentation in the time limit.

I just put in the chat the website where you can find this last mile internet connecting solution guide, the internet report or you can download the PDF version and you can find the case studies, the database on which we developed the report.

Let's go to the next speaker. She's from our sister organization, from the FAO, she's the information and knowledge manager and officer, regional office for euro and the region.

The floor is yours.

>> SOPHIE TREINEN: Thank you very much.

I'm going photo focus the presentation on the digital agriculture aspects. If I can have the presentation please.

Let's look in the next slide on what are the opportunities and challenges of digital agriculture. For the opportunities, of course technological innovation is crucial for economic growth. They can improve efficiency, reduce transaction costs, better manage risks, strengthen trust between actors, facilitate inclusion and access to finance.

However, there are still challenges. These challenges, they're even more evident in the agriculture sectors. We can see that the digital divides exists across countries and we are seeing with the previous presentation that E.U. countries and the rest of Europe are not the same and also more than of the rural area and the urban areas, they're not treated the same way.

On the social aspects, the social classes, they're

making a divide and this is what we call the triple divide, the digital divide, rural urban divide and the gender divide.

So cross-sector, there are all of these different divides.

In the next slide, I'm showing you the opportunities that are offered with digital agriculture. These are all of the different sectors in agriculture where we could have innovation, also increase of our take-up if digital technologies are available and affordable.

I will go to the next slide.

Talking more about what are the human challenges. We have mentioned the gender divide, but there is also this divide between generation. The young generation, it is living in rural areas. The farming population is aging. Therefore, there is -- it is important that we are working on this intergenerational gap that can be created.

The majority of farmers are small and this will have a repercussion on whether they are able to afford or not the new digital technologies. In some countries there's a shortage of labor, farm labor, and this is a taboo and it is not mentioned, suicide rate among farmers is high because there is high stress among small farmers.

To explain also the difficulty we could have, there is also the conservative attitude of farmers vis-a-vis new technologies. The new technologies should really show what's the difference that can be made and really improve the life of farmers.

We're still also having some basic skills which are needed.

When you're using digital technology, more expert skills are needed for maintenance and support.

So these are what I have called the human challenges. I would like to now on the next slide show you more what it means for small order farmers.

In Europe, does the size of the farm, it can really be small to supreme extremely big. This big diversity, it is also making the challenges. Therefore, if technologies are being used for large farms. When talking about smaller one, the technology, they don't always take the reality into consideration and very often small farmers are then excluded from policy incentive and rural services.

The next aspects, they're about the data.

When you are using the new technologies there would be a regeneration of data, it is important that the small farmers are then able to generate use and manage the data and information and then they will also have the question

about all the data, the privacy issue, the access, the control of data in the systems. So this is the challenges faced and if we have challenge, we also have response and this is my next slide about the responses.

Sorry. The digital -- let me first go to the rural digital divide, the reality before the responses.

This has been said by other speaker, that of course the rural digital divide is quite -- we can sense it.

I am at the moment in a rural area and I'm here making sure that my connectivity remains so that I can continue this presentation.

In stable, irregular internet connectivity, it is what we face in rural areas. The quality, it is poor compared to the cities where people are paying the same price, of course, Telefonica explained why it is so. However, rural population are facing the reality. With COVID-19, there is an increase demand of connectivity and there are more and more services like eCommerce, the fact that we're teleworking, we have a high demand but the quality of the services, the response, it is low. Therefore, this could also explain why there is a low use of digital technologies in agriculture and rural areas because of the poor connectivity and also of the return over investment for small orders which is still very limited.

What are the responses.

Now let's go to that slide.

I have grouped the responses in four categories.

We are doing assessment at national and regional level. For example, with ITU we have done distinctive of agriculture of 18 countries in the region and also we have developed guidelines to help countries to develop their digital agriculture strategy and this is for the policy framework so that we're integrating, involving everybody, there are specific projects that are taking place. One I would like to mention, it is the implementation of the different regions and it would be of interest to see how this could be implemented in Europe, in the European Union, of course, they're already working with smart villages and it is good to see how we can do that also in other regions.

Of course the knowledge exchange which is quite important that we can exchange good practices.

In the next slide, I'm showing this collaboration that fox AO and ITU has. I mentioned the status report that we did last year. This year, we have done a call looking at the good practices and looking at the digital solution that are being developed in the region. Later this year we'll have the possibility to have an award ceremony with the

best solution that we ever see.

We have received 200 of them and that's why it takes some time.

In the next slide I'm showing the building blocks needed in the policy framework and this is part -- this collaboration that we have, with ITU and I'm just highlighting a few things and this, of course, relates to the previous speakers. It is important to have a framework for specific policy, a good data governance. Of course, the infrastructure able to support all of this, and the capacities, all of the different actors.

My next slide, it will actually -- next slide, please.

In closing this triple died digital divide through rural and urban gender, using investments.

So we're advocating for investments to increase technology adoption rates in rural areas. It requires investment in supply sides and on the demand-side.

On supply side, rural network coverage and availability to keep digital application are needed.

On the demand side, digital skills and literacy, they're specifically important and needed for smallholders.

Addressing such factors necessitates a range of public policy interventions and also regulatory environment that attracts the private sector. I think this is also what we have heard previously.

We would like to have participation of governments and investment through public-private partnerships, but also to access the public-private partnerships to have public-private investment.

I'm continuing now with the next slide --

>> ISTVAN BOZSOKI: Sorry. You have 1 more minute, please.

>> SOPHIE TREINEN: The FAO Digital Geospatial Platform, it enables to have access to different datasets and comparisons and I would also highlight in the next slide the international platform for digital food and agriculture.

We have been working together with ITU and other organization, U.N. organization on trying to have a platform where we put actually increasing awareness, facilitate discussion, showing the good practices and the policy recommendation and the voluntary guidelines.

In conclusion, next slide, a conducive environment for digitalization of agriculture requires expanding and improving infrastructure both from ICT and otherwise, to improve the ability to use internet effectively so that they benefit from digitalization and designing a regulatory

frameworks that both conducive to innovation and takes into account the specificities and the risks that digitalization entails.

With this, I finish my conclusion and the next slide, it is providing you a few links to the different websites of where you can see these things. I'll put this in the chat as well.

Thank you very much.

>> ISTVAN BOZSOKI: Thank you for the interesting presentation and just to let the participants know that we have uploaded the report on the status of digital agriculture which was mentioned also by Sophie in the presentation. You can download it from here.

The next speaker, the spectrum management and international regulations Director General for different industry and space from the European Commission.

The floor is yours.

>> Dominic Hayes: Thank you. Good afternoon.

We're virtually in Slovenia, happy Women's Day to you all. Especially the ladies that joined us. I'm happy to say that my boss is a lady her boss is a lady her boss is a man, but the top boss, the President of the European Commission is a lady. I think that's a very fitting introduction to Women's Day.

I haven't shared my screen yet. Sorry for that.

I'm with the European Commission. I work for the E.U. space programme. I'll talk to you about the secure space-based connectivity system.

Our commissioner last year said that Europe must launch a third major space project, a connectivity project through a constellation in low earth orbit making it possible to put an end to coverage dead zones in Europe. This will aim to ensure European strategic autonomy, resilience and technological sovereignty, as well as strengthening Europe's ability to be a global leader. It will also fuel and innovative, competitive European industrial ecosystem. This will aim to support a secure E.U. and when we talk about security we first of all think of governmental applications so we're thinking about connecting key infrastructures, things like embassies, secure communications, management of infrastructure, there is commander control for critical infrastructure and then the other strand is crisis management and external actions so the E.U. is involved in a number of missions abroad to enable stability and this secure connectivity could contribute to that.

Also surveillance. The E.U. has a border with other

countries, and the border securities, it is an important issue at the moment and so we see this connectivity initiative as one way of supporting that.

Then looking to the other side for the mass market applications we see that security is also becoming very important for consumers and so having secure connectivity and a mass market application, it will be very important.

We can see integration into 5G and 6G potentially, we have heard speakers already talking about edge computing and there is potentially autonomous driving, E. health, smart working and education. There is many applications where this infrastructure could support those applications.

So what will the system look like? 10,000 satellites, 1,000 kilometers in orbit, climbing 90° in, Ku and Q band, 100 spot beams per satellite, but, of course, it is too early, way too early to talk about what the system will look like. It may include elements that I have just talked about but very likely it will include other elements as well. We don't know how many satellites, we don't know the orbits, we don't know what frequencies it will use. This will be worked on in the next few months and years.

What I can tell you, it is that it will be built upon the existing E.U. programmes. So the GOVSATCOM, the secure communication system that's currently being planned, based on the geostationary orbit satellites, that's well in development and with the Member States and that will form the baseline of the global secure connectivity system. It will also work probably in collaboration with a low earth component to reduce the latency which is very important to many applications, but possibly also we haven't ruled out the inclusion of medium earth orbits or even highly lectical orbits because security is so key to the project we will be integrating the elements of the secure euro QCI programme, the European quantum communication system. We have talked about the space element. It will work in collaboration with the terrestrial network that's also being worked on.

So we will add value globally, support and enable disruptive technologies such as 5G and 6G, potentially backhaul edge delivery, edge computing delivery, 5G on the move, quantum encryption, important for the future, AI, synergies for the European initiative such as a project for common data framework structure, GAIA-X, Internet of Things, common computing, smart Mobility, smart agriculture, it is mentioned in one of the previous presentations.

The system will be secure by design, so security won't

be an add-on. We'll have strong encryption, it will be proactive, reactive against cyber, other threats, it will offer operational Cybersecurity for space operations.

Importantly, it will also be reliable. It will be more robust and we'll offer redundancy for existing national capabilities, and importantly it will cover areas that are currently -- have limited connectivity, such as the Arctic region.

Of course, key to this will be boosting the European space industry. One of the effects we are seeing, could potentially see from the growing rise of the non-E.U. mega constellations is a shift of business from the E.U. to the non-E.U. businesses that are supporting the mega constellations.

By Europe having its own system, this will help keep some of those services and some of those industrial capacities within the E.U. and within Europe.

We also see it adding value to the existing E.U. space mission. You may have heard of Copernicus, Galileo, EGNOS, these are services we run. One is observation globally and potentially, the connectivity, global connectivity system will offer a data relay for realtime missions, possibly including piggy back sensors on new satellites.

Galileo, our satellite navigation system, so the connectivity system could offer signal orientation, quantum key distribution for the publicly regulated service and it will avoid the dependency on commercial networks.

EGNOS, our integrity for GPS and it features Galileo, offering integrity for applications requiring a special, secure element A special safety element such as aviation where you need to have a certain time for being alerted when there is an issue with the position that you are receiving.

That currently covers European area.

It is provided by geostationary payload and that could be provided or hosted on the geo payloads con necked with the connectivity system.

We also have -- we also are working on space tracking and space traffic management.

The global connectivity system, it could include space sensors to contribute to that mission.

As a space -- a new space asset, it will be costing money and money is very scarce that the time with the COVID crisis, but we are planning an innovative financing for this new connectivity system through the next generation E.U. system, it will be an intelligent blending of E.U. and be Member States funds with private sector investments.

That will draw on budgets from the E.U., so that's the E.U. space programme, the digital Europe fund, the CEF, which is the connecting Europe facility, there is horizon Europe and the European defense fund.

These are all funds under the E.U. budget. We could also see contributions from Member States funding, possibly through the national recovery and resilience plans and maybe national space agencies wanting to contribute but also the private sector is going to be considered to be very important so that they could be strategic investments made through the invest E.U. structure, possibly other private funding streams and maybe in-kind contributions, maybe contributions of technology, maybe contributions of launches. This kind of thing will all be wrapped up into the funding scheme.

So we have a number of ongoing studies so the European Commission itself is conducting a mission study that will look at the mission, architecture, the frequencies we may use, the cost, the governance, the business model as well as the euro QCI terrestrial component. Then we have the European GNNS agency which will soon be the European Union agency for the European space programme, European Union space programme, I apologize, they're working on the BOVSATCOM Hub which is part of the ground segment system.

Then we have the European space agency, and they're working on their own SatCom programme and they'll be working on the euro QCI case components coming up with technical designs and pragmatic approach for the next generation satellite infrastructure and that will feed in the initial concepts that will be available toward the end of the year. We have some idea of what the future system will look like.

Really, that's it. Not really much detail. We're at the very early stages of the project, but I urge you to watch this E.U. space.

Thank you.

>> ISTVAN BOZSOKI: It was interesting. We should consider the satellite issues and maybe by the next version, maybe this service can be also included, this new system, the system on the satellite connectivity issues.

Next -- and thank you, that you kept to the time where we are.

The next speaker, it is the head of telecommunications information and modern technology department from the Ministry of Economy and Sustainable Development of Georgia, and now we can hear what governments are thinking on this connectivity issue.

The floor is yours.

Please try to keep to the 9 to 10 minutes.

>> EKA KUBUSIDZE: It is my pleasure to be here. At the forum of ITU Regional Forum for Europe on Meaningful Connectivity. I extend gratitude to the International Telecommunication Union and the Ministry of Public administration of Slovenia for organizing this important virtual meeting.

As a matter of the fact, that we're living in a digital era, the internet, it has an impact in nearly every aspect of our life from working, to entertaining, the right to access -- to internet, it is entrenched in the constitution of Georgia so, our citizens, they have the Constitutional right to have the access to the fundamental right, to have the access to the internet and, of course, the COVID pandemic, it shows the importance of the connectivity and strengthens our views of necessity of the development for the broadband connectivity and for Georgia, of course, one of the main priorities, it is the development of the infrastructures for all of the country development, the digital economy, but development in the digital economy without the connectivity that's impossible. I just will briefly provide you what was done for the development of the broadband infrastructure especially in the rural areas and the work we're doing in this direction to look at the changes for example in 2015 relating to the technological neutrality of the Georgia mobile operator, they were given an opportunity to provide mobile 4G services and 90% of the territory is covered by 4G services and 99% of Georgia state is covered by the 3G internet. 82,000, it is the capacity of the fixed broadband subscribers per 100 households composed more than 80% and density of the mobile subscribers composed 93%, but you can still see that we in Georgia, worldwide, we have closed the digital gap between the rural and urban areas. Within the framework of the European Union's youth for digital programme, we're supporting the European Commission and World Bank, it has developed recommendations on the national broadband development strategy of Georgia and its implementation action plan for 2020, 2025 which was adopted by the Government of Georgia last year, the beginning of last year, 2020, and of course the strategy was elaborated fully in accordance with the European Union's society for 2020/2025 and the main aim of our broadband development strategy, first to increase the competitors and attract sectors and building digital services and demand and the main targets for 2020, 2025, they are to cover 4G 99% of

the Georgia territory and by the 5G, at least 3 municipalities in Georgia, all of the institutional entities will have until 2025, they'll have access to the 1 gigabit per second connectivity and households, especially the rural areas, they have the access of at least to the 100 megabit per second internet and for the implementation of the national broadband development strategy which I will mention that it is adopted by the Government of Georgia we started with the World Bank, we started the project so-called working Georgia project and this project has three components, first, it is increasing access to the affordable cost of internet and second is promoting the use of broadband enabled digital services and service, of course, the project implementation support.

I will review on the first component, I will not take much more time here, your time, regarding the skills level development, but the development innovation, the development et cetera, which is also covered by the working Georgia project but first component, increasing the access to the affordable broadband internet and under this component, the governments have started -- they have the so-called broadband for all initiative. It is a state programme under which the government plans to build the fiberoptic infrastructure in the white zones, and the population, it is greater than or equal to 200 persons and the operators don't have -- don't plan to build their fiberoptic infrastructure in the next three years because it is not perfect to propose this infrastructure in some of the mountain areas. Under the project, we'll build -- the government plans to build and create the unified neutral fiberoptic network and develop the wholesale broadband services so that we will create the white zones and view the possibility of the private sector, especially the SMEs to provide these services in rural areas.

Under the working Georgia project, we're planning to build 5,000 kilometers of the fiberoptic infrastructure in rural areas and 170,000 households and 585,000 inhabitants of rural areas will have access as I mentioned already at least to the 100 megabit per second internet and at least one gigabit a second internet.

Under the working Georgia project, last year, in 2020 we started the pilot project in one of the regions of Georgia, 139 kilometers of the fiberoptic cable, all of these are constructed and we'll continue, of course, this working Georgia project.

The Government of Georgia supports the development of the community network infrastructure in less populated

areas and the 200 persons, inhabitants, and we support the European Bureau of Internet Society and in the mountain news regions of Georgia, there are two mountain regions of Georgia and the community network has built successfully, in 2017 and in 2019 and we have served the community network and we're planning to build in the autonomous republic and we will continue to support the community network development in the city areas.

Of course, the government, the main goal, it is to say to the private sector to provide networks and rural services and to accelerate the deployment of the high-speed radiocommunication networks and the ministry, drafting a law of Georgia and the infrastructure sharing which is elaborated in full accordance with the European Union directive and it is submitted to Georgia, the draft will consider the measure, such as sharing and bringing use of the existing Telecom physical structures which are expected to create conditions for more cost efficient network deployment and this project, it is with the support of the development of the broadband services and the support of the priority sector to develop the services especially in the urban areas.

I will cover only the local connectivity but as far as the global connectivity Georgia of course has the potential to take advantage of its geographical location and we under the national broadband development strategy have started the process for creation of the digital hub in Georgia and creation of the regional digital data center which could serve a regional hub and the gateway between Europe and Asia.

Actually that's all I wanted to say. Thank you very much for this event again.

>> ISTVAN BOZSOKI: I wanted to mention to you that you were in the last minute but it was done very well.

Maybe we'll have the next update, maybe if you can provide some case studies from Georgia maybe we can consider it in the last mile connectivity guideline.

The next speaker, senior market engagement and manager. The floor is yours. I hope you --

>> Genaro Cruz: Thank you very much.

I have a very short presentation.

Perfect. Thank you very much.

First of all, I wanted to thank also UK aid who is responsible for the donors supporting this project. It is important to give them the merit that they deserve.

The GSMA, for those that don't know, it is a federation for mobile operators worldwide, 400 operators

are members to our association and we work with all of them on a number of topics. I work in the mobile for development department which is about the use of mobile technologies fore-check development in emerging and developed markets I'll focus and be brief on a key messages around connectivity and connecting the unconnected. Next slide, please.

So one very important point, it is really to fill in the connectivity, to put it in context. The way we do this, we talk about the connectivity gap and that we call the coverage gap and then the usage gap. It is very important to give this distinction, the measures that need to be taken to address both of those issues, they're very different.

I give you some numbers here for low and middle income, it was -- so worldwide, there is about 3.8 billion people who are connected to the internet and there is around 4 billion who are unconnected.

However, if we look at the split between the usage and the coverage gap you see that 85% of those who are not connected today are part of the usage now, meaning that they are already covered by a mobile network, mobile broadband but they're not using it. Only about 15% or around 600 million are not covered by a mobile broadband network. With this, 3G, 4G, 5G.

This is really important. It means that while the infrastructure remains a very important issue in rural areas, especially emerging markets and also in some developed markets, infrastructure remains an issue and really if we want to connect the unconnected and get the number, we need to put a lot more effort into closing that usage gap. Those 85% plus 3.4 billion who are already covering and have access to the infrastructure and we try not to connect to the internet.

What are the barriers. We have research on this, we have struck can you remembered this around five key barriers to inclusion.

The first, access, with access we have part of the infrastructure, the access to the network and good quality network but there are also other elements of infrastructure which are important. Access to devices, it is an important barrier, especially the emerging markets, access to electricity, also access to for example the network of those that sell the cards or data bundles, and in some countries, accessing formal IDs is an issue, many countries, they mandate that in order to buy a mobile SIM card you need have a formal ID, if you don't have that ID,

you cannot access the mobile network. There is this problem of access, it is really important.

It take as whole new dimension when we think about things like disabilities, that is also a major barrier for Persons with Disabilities to be digitally connected.

The second barrier, affordability, we'll discuss a lot about this. I won't go in details. It is affordability of data, how much it costs to buy the data bundle, but also the devices. Right. What's the cost of a smartphone, can I afford it? This is really, really important. Especially rural areas of emerging markets.

Third barrier, relevance. The relevance here, we'll discuss about content, the services online are practical for people to consider, right.

We see this relevance problem being very important in rural areas of developed markets where sometimes the services that are offered are not -- they don't create that much value for people. They don't see the point of being online. This is an issue. Sometimes this is just perception. It -- they're not advertising the right way, they're not reaching the people that they should be reaching.

A scenario where services like eGovernment, they can increase value for everyone, for every citizen in the world. Especially those in rural areas that cannot access sometimes the physical infrastructure, the government emphasis. This is very important for governments to improve the way that they deliver services and to make -- to make being online available.

The third barrier, knowledge and skills, with choice, some we have discussed, we won't go into details, just to say that according to our survey, a number of markets which are ran every year, skills, it is normally the first or second in affordability, most prominent barrier for people to access.

Finally one barrier that's taken more and more importance, it is safety and security. This has to be the most different ways of understanding safety and security, it has to be one of the things of people feeling online, things like harassment, the device, Latin America, they have problems of the technical devices, and also from in general building the considerable trust. This has taken a new dimension with fake news, other backlash of internet so it is really important that it will feel safe and this has become an ever-increasing barrier of people getting connected.

Next slide, please.

Now I want to pass -- to Geneva two examples of things that we're doing at the GSMA to help tackle these issues.

These two example, we do a number of projects in many countries in the world. I want to discuss two, data intensive, and it is really about using data to inform policy action.

The first one, it is a tool that's called the model connectivity index. This is publicly available tool. What we have done, we are thinking about despite barrier, we structure them around four enabler, the infrastructure, the affordability, the consumer readiness, the content and services.

What we did, we try to collect a lot of data, putting together an index with this, trying to understand what is the current status of connectivity in more than 163 countries, and doing that deep dive into what is the status of the four different enabler, to allow policymakers to starting to understand where they are lagging behind against other countries and follow that in time as well. We have over 5 years of data.

The idea, it is that policymakers to go into this tool, to use it to make a first assessment of connectivity using the four enablers and trying to understand where they can start taking action in order to increase the levels of connectivity in their country.

I encourage to you go, visit this. We have put a lot of effort to have primary data collected for this, and we collect data as well from other inviting institutions and the ITU being one of the main ones.

Trying to have -- trying to compare this.

>> ISTVAN BOZSOKI: You have the last minute, please.

>> And then on the last slide, please. Another tool developed, the autopsy of the hyper granular data on court and jury, which is needed to target invest. We know there is investment in infrastructure. It is not where most of the population -- where locally the population is, the spotlight on the usage cap but the infrastructure remains an issue.

What we have seen through our work, it is that if we don't have very quality data where the unconnected are located, where they live and what is the investment needed to go and target those specific areas it won't be possible to do so.

We created this tool and we have 16 countries so far. We're trying to extend that to other geographies and I encourage you as well to go visit the GSMA mobile coverage maps and see an approach used by other countries and

other -- I know the ITU is doing similar work on this space and we need to try to understand where the investments should go to optimize the public and private investment when you're connected.

I will stop there.

Thank you very much for your time. Perhaps we'll have some questions after.

>> ISTVAN BOZSOKI: Thank you very much.

We have transmission maps that may show the mobile infrastructure information and we're using that same database because we have received the proposal from GSME where we can get the information.

Let's turn to the last speaker.

The C observations of the mobile supplier association, the GSA.

Joe, the floor is yours. You have around 10 minutes. Please.

>> Joe Barrett: I think I'm aware I'm the last person between your lunch. I will try to keep to the 10 minutes, thank you.

While the slides are being shared, I'll explain the GSA -- we can go to the next.

I'll focus on the rural coverage and a little bit about GSA, if you don't know, you can find more information at GSA.com and we have been representing the mobile suppliers since 1998 and we're reporting on what's happening in the industry today through industry development, through report, collecting data that's in the storage base, and we continue to have new features. We probably have the largest spectrum group within the industry, more than 140 participants from our member companies, following very much the ITU structure guidelines within the regions, working with local administrators and I will mention a little bit about the new 4G, 5G fixed wireless access and that was announced again at the end of last year.

Next slide, please.

Our vision is going forward with 5G, it is how do we connect all 7 billion people globally? Also then maybe the 100 billion devices and things by 2030? We see mobile connectivity and overcoming the digital divide that we see across the world. Some key things around that, it is spectrum. As I mentioned, from low band, mid band, high band spectrum, and different frequency ranges to help realize the vision and also to bring the 3GPP standard specifications from 4G to 5G and eventually as we have referred to it as 6G. The goal then is to try to get

large, continues amounts of spectrum, harmonized spectrum across all of those bands and we are working with local regulators and policymakers to help ensure the release of the bandwidth.

Next slide, please.

From the standard perspective, from a rule perspective, what's happened.

A key initiative in release 15, low mobility and low cells and that is to enable large cells especially into rural areas that will provide coverage to areas that don't have fixed broadband coverage or service. So using fixed wireless access we can actually start to reach those consumers at a cost effective price which is the key thing, especially many distant rural areas where you don't have good coverage. That's a key point.

Release 16, which is now closed enhances the feature and release 17 is now under discussion and we can bring new features to help with that capabilities. So what we find, the standards through 3GPP, it is creating that global economies of scale that will keep costs effective and at a price point that will support rural deployments and will report -- and will support with new frequency bands not just in the low bands but in the higher bands as well.

Next slide, please.

So you see the different spectrum coverage and it is clearly the low bands providing extremely good coverage into rural areas and that doesn't mean that the mid bands, the high bands aren't also suitable for rural areas to bring in mobile broadband to bridge this digital divide and to connect those three, 4 billion subscribers and to give them access to the internet.

It is not just those bands. We can have localized high frequency, high-band spectrum that can be used with new techniques and antenna technology like the beam forming to really provide fixed wireless access into the rural community.

Next slide, please.

So as I said, we announced this fixed wireless forum at the end of last year, we have 34 members now, the idea is to promote and encourage operators to deploy fixed wireless access to ecosystems together. As you see, we have 32 members from across the ecosystem, especially from the consumer premises equipment so that the -- so the devices side. Not just licensed companies but smaller companies and different companies as well and we would encourage others to join and to participate and to help us emphasize the benefit of fixed wireless access, various

frequency bands to deliver rural coverage and services.

Next slide, please.

A point, one of the things that GSA does is report. As an example, you've got a fixed wireless access report coming out in API which is in addition to the previous two reports we did last year.

If you look at how many fixed wireless access networks there are in 4G, 5G, then we have over 600 networks, more than 165 countries, a fast growing fireless access ecosystem if you look at the 5G overall, we have just announced 628 5G devices announced.

There are 150 fixed wireless access devices that we have been reporting on shortly and more, even more than that, in the database.

Rural fixed wireless access is also ideal for long-range broadband connectivity, homes, enterprises, schools, doctors, et cetera.

We have got the various networks across the world, as you can see in the pie chart.

Again, extensive amount of coverage.

Next slide, please.

So to finish then, you can download this ecosystem cat look from our website. As I said, there are 27 companies who are showing their product, you can see what's suitable, available. On this, we'll continue to be increased during this year as new companies provide data into the log and areas to show -- in the catalog and areas that are available, which companies are promoting the fixed wireless network to deliver that rural capabilities and please follow this and keep updated.

With that, I would like to thank you. Hopefully that was 9.5 minutes and keeping you on time.

Thank you very much.

Back to you.

>> ISTVAN BOZSOKI: You had 5 seconds! Thank you! Thank you! it was just -- thank you very much to all speakers. It was an interesting A good session. I enjoyed it very much, it was a lot of spectrum issues which is what I like especially my work IP.

Now, in the chat, we can have some question, but we still have one more minute to finish so my proposal is that if you have any question, maybe you can put it into the chat and then we'll check with my colleagues from the group on how to respond.

Thank you for the participation, thank you for the participants for allowing us and happy Women's Day once more and I wish you a very good, a short lunch! I see from

the message that the next session we start soon.

>> I see that there has been some questions submitted in the chat. I see it is addressed -- we have a half hour for the lunch brick. I would invite to you stay connected and to reconnect with us at -- in a half hour, 13:45. We'll start sharp, our session number 3. Thank you very much.

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