



# OUTCOME REPORT

**ITU Events in Europe**

**Digital transformation based on ICT innovations for the development of the digital economy**

Emerging technologies driving digital transformation at the national level - Case of Ukraine

UN supporting digital development in Europe

Achieving SDG12: E-waste in the Western Balkans

**15 December 2021 | 09:30 - 15:20 CET**

Hybrid event: Kiev, Ukraine - State University of Telecommunications and online

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INFORMATION AND COMMUNICATION TECHNOLOGIES

DIGITAL FOR SUSTAINABLE DEVELOPMENT

EMERGING TECHNOLOGIES

SDG12 E-WASTE



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## Digital transformation based on ICT innovations for the development of the digital economy

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## ACKNOWLEDGEMENTS

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ITU would also like to thank esteemed guest speakers of the sessions for their interventions: **Mr Marco Obiso**, Head of the Cybersecurity division and acting Chief of the Digital Network Society Department, ITU; **Ms Rosheen Awotar-Mauree**, ITU-D Study Group Advisor at the Telecommunication Development Bureau (BDT) of ITU; **Mr Viktor Katok**, Chief Adviser for Scientific and Technical Policy of JSC "Ukrtelecom", Ukraine; **Mr Yuri Kargapolov**, General Director of Consortium “ Ukrainian numbering naming and addressing operation center”; **Ms Olga Zinchenko**, Head of the Department of Artificial intelligence, State University of Telecommunications, Ukraine; **Mr Vitalii Savchenko**, Head of the Scientific Educational Institute of Cyber Security, State University of Telecommunications, Ukraine; **Mr Andrii Zakhazhevskyi**, Doctoral student of the State University of Telecommunications, Ukraine; **Ms Nataliia Rudenko**, Head of the Department of Mobile and Video Information Technologies, State University of Telecommunications, Ukraine; **Ms Sophie Treinen**, Information and Knowledge Management Officer and Digital Agriculture Team Leader, FAO Regional Office for Europe and Central Asia; **Mr Ryan Dos Santos**, Technical Officer - Digital Health, WHO Europe and Central Asia; **Mr Milan Dacic**, WMO Representative for Europe; **Ms Maria Teresa Pisani**, Economic Affairs Officer at the Economic Cooperation and Trade Division, UNECE; **Ms Mariia Pavlova**, Project Associate, UNIDO Regional Office for Europe and Central Asia; **Ms Natalija Ostojic**, Technical Project Analyst, UN Women Serbia; **Ms Sarah Fuller**, Education Consultant, UNICEF Regional Office for Europe and Central Asia; **Mr Matthew Billot**, Regional Coordinator, Science-Policy, UNEP Europe Office; **Ms Rosie McDonald**, E-Waste Data Associate Officer, Environment and Emergency Telecommunication Division, ITU; **Ms Giulia Iattoni**, Programme Associate at UNU-ViE-SCYCLE

Finally, ITU thanks all those who made this event possible: to **Mr Jaroslaw Ponder**, Head of ITU Office for Europe, for delivering his opening remarks; **Ms Sarah Delporte**, Project Officer at ITU Office for Europe, for moderating the event and delivering a presentation and for the organization of this event; **Mr Elind Sulmina**, Digital Services Consultant at ITU Office for Europe and **Ms Connie Man Hei Siu**, Junior Policy Analyst Intern at ITU Office for Europe, for the organization of this event and elaboration of this report.

## INTRODUCTION

The event “Digital transformation based on ICT innovations for the development of the digital economy” was co-organized by the ITU Office for Europe and the State University of Telecommunication of Ukraine. This event took place on 15 December from 9:30 to 15:20 CET, virtually.

Development through digital transformation is a complex issue and touches on many enablers, from broadband availability to policies and sectoral e-strategies, as well as specific programs fostering digital inclusion or the development of innovation communities. The concept of digital transformation has become ever more important since the outbreak of the COVID-19 pandemic, and various stakeholders, including the United Nations (UN), has assisted countries in their respective capacities relying substantially on the digital component. Extending the availability of products and services and empowering citizens, workers, and students in their daily engagements and needs in times of lockdown has become a clear priority of all countries. The ability to leverage the progress made in the digital sphere has become an important factor in determining resilience during the COVID-19 crisis.

As the situation is developing into a new normal where “digital” is not only a solution to an emergency but a long-term investment against risk, this event provided a platform to discuss and present the various dimensions of digital development as ICTs become increasingly important for the achievement of the Sustainable Development Goals (SDGs) by 2030.

The event’s agenda covered the following:

- Session 1: National Case Study: The Impact of Modern ICT On the Development of the Digital Economy of Ukraine
- Session 2: Approaches of the UN System to Support Digital Transformation
- Session 3: ITU-UNEP-UNITAR E-waste Monitoring for The Western Balkans

The main outcomes of the briefing are outlined in this report, which structures the key points that emerged during each session of the event.

## PARTICIPATION

The session was an open virtual event and mainly targeted all digital transformation stakeholders across sectors, such as academia, government, NGOs, the private sector, the industry, and the UN system partners at the national and regional levels. Twenty-four (24) eminent speakers presented and discussed during the sessions. Details about the agenda and speakers as well as the presentation delivered can be found on the event’s website. The workshop was attended by over three hundred and sixty (360) participants, with an average audience of about 150 participants.



Figure 1 Virtual Group Photo

## DOCUMENTATION

All relevant documentation related to this event, including the present outcome report and the presentations delivered, are available through the event's webpage [accessible here](#).

### Session 2: “Approaches of the UN system to support digital transformation”

The webpage dedicated to the session on “Approaches of the UN system to support digital transformation” can be [accessed here](#).

The webpage of the [UN Digital Transformation Group for Europe and Central Asia \(UN DTG4ECA\)](#) is also [accessible here](#) and the [UNDTG4ECA ICT Solutions Stocktaking Report](#) is available [here](#).

### Session 3: ITU-UNEP-UNITAR E-Waste Monitoring for the Western Balkans

The webpage dedicated to the session on the ITU-UNEP-UNITAR initiative “E-Waste Monitoring for the Western Balkans” can be [accessed here](#). The [Concept Note](#) provides an overview of this initiative. The webpage of the [“Global E-Waste Statistics Partnership”](#) initiative is also available on this webpage.

## OPENING ADDRESSES

**Mr Jaroslaw Ponder**, Head of the International Telecommunication Union Office for Europe, started by welcoming the audience and thanking Ukrainian partners, in particular Dr Volodymyr Tolubko, Rector of the State University of Ukraine and Mr Viktor Katok, Chief Adviser for Scientific and Technical Policy of JSC "Ukrtelecom" of Ukraine. In his speech, Mr Ponder congratulated the government of Ukraine for the progress in the domain of digital transformation, underling the rapid growth in connectivity, efforts to digitalization of services, recently launched good-practice report on digital skills jointly developed by ITU and the Ministry of Digital Transformation proves that the strategies launched by the government complemented by projects like DIA became world-class reference for the others. Mr Ponder recognized that "Digital", in all its dimensions, is now not only a solution to an emergency - as brought forward by the pandemic - but a long-term investment against risk. Deploying broadband internet in big towns and cities happens almost naturally. But deploying these networks to rural and remote areas is markedly more challenging. He also outlined how according to the Digital Trends in Europe 2017-2020 report, 7 European countries are still below the global average of 75 mobile broadband subscriptions per 100 inhabitants, and a few countries are still missing full 4G coverage. This means that for various reasons, and despite prices being the lowest globally, millions of people in Europe do not make use of mobile broadband services. Considering the above, Mr Ponder also welcomed that the event's agenda would cover all these aspects, both with the morning session focusing on the case study of Ukraine, and the afternoon sessions dedicated to UN collaborative flagship initiatives advancing SDG focus digital development.

Mr Ponder mentioned that next year is an important year for ITU, with the 3 conferences coming, including the World Telecommunication Development Conference, which will set the framework for the following 4 years. He stressed how Europe is seen by many stakeholders as a point of reference, and therefore encouraged the State University of Telecommunications of Ukraine to actively participate in its capacity and ensure the process benefits from the representation of multi-stakeholders.

He also highlighted ITU's dedication to strengthening meaningful engagement of youth in the work of digital transformation by presenting the upcoming Youth [Summit](#) which will precede the World Telecommunication Development Conference

Following Mr Ponder's opening speech, **Mr Viktor Katok**, Official Representative of the Communications Administration of Ukraine in the ITU, from 2008 to 2016, Vice-Chairman of the 15th ITU Research Commission, Chief Adviser on Scientific and Technical Policy of Ukrtelecom JSC, Ukraine, delivered his opening remarks, underlying the importance of use of ICTs and acquire digital skills as essential tools to optimize costs, increase sales and achieve business growth when establishing companies like financial institutions, energy companies, airport railways and eating industries so as to increase productivity, all of which would benefit from developing technologies such as artificial intelligence and machine learning.

**Mr Vasyl Mekenchenko**, Director of the Department of Electronic Communications Development, State Special Communications Administration, took the floor and drew attention to how the Internet should complement people rather than replace them, as it should provide enhanced capabilities by increasing production autonomy and computer systems, alongside stating how systems could create duplicates with a set of technological capabilities that are able to increase productivity and protect against attacks without human intervention. The importance of actively using ICTs and introducing the use of artificial intelligence was also emphasized.



**Mr Oleksandr Savchuk**, Chairman of the Board of Ukrainian Internet Association of Ukraine, highlighted the issue of energy saving through energy-efficient technologies to influence the development of big data. He stated that processing technology is one of the main requirements of the International Telecommunication Union, and how expanding the network reliability of information storage and protection against distortions help determine the high reliability of information transmitted and the security of information transmission, since it minimizes threats in national security such as protecting devices that are used to lead the state and prevent foreign criminal organizations using cryptocurrency for illegal business activities through the Internet via e-commerce and financial services.

**Mr Volodymyr Tolubko**, Director of the State University of Telecommunications of Ukraine, emphasized how digital business and industry projects create new technologies that meet the requirements of the new economy. He also stated that the Intellectual property protection provision reported the effectiveness of using the Internet and promoting the infrastructure industry, as well as how the digitization of basic life through digital transformation would better the lives of people in Ukraine.

## **SESSION 1: NATIONAL CASE STUDY: THE IMPACT OF MODERN ICT ON THE DEVELOPMENT OF THE DIGITAL ECONOMY OF UKRAINE**

**Focus:** The morning session focused on addressing the role of emerging technologies as the driver of the digital economy with the case study of Ukraine.

### **Moderators:**

**Mr Andrii Bondarchuk**, Director of the Educational and Scientific Institute of Information Technologies, Ukraine;

**Ms Kamilla Storchak**, Head of the Department of Software Engineering of Automatic System, State University of Telecommunications, Ukraine

**Speakers:** **Mr Volodymyr Tolubko**, Director of the State University of Telecommunications, Ukraine; **Mr Marco Obiso**, Head of the Cybersecurity division and acting Chief of the Digital Network Society Department, ITU; **Ms Rosheen Awotar-Mauree**, ITU-D Study Group Advisor at the Telecommunication Development Bureau (BDT) of ITU; **Mr Viktor Katok**, Chief Adviser for Scientific and Technical Policy of JSC "Ukrtelecom", Ukraine; **Mr Yuri Kargapolov**, General Director of Consortium "Ukrainian numbering naming and addressing operation center"; **Ms Olga Zinchenko**, Head of the Department of Artificial intelligence, State University of Telecommunications, Ukraine; **Mr Vitalii Savchenko**, Head of the Scientific Educational Institute of Cyber Security, State University of Telecommunications, Ukraine; **Mr Andrii Zakhazhevskyi**, Doctoral student of the State University of Telecommunications, Ukraine; **Ms Nataliia Rudenko**, Head of the Department of Mobile and Video Information Technologies, State University of Telecommunications, Ukraine;

### **Key Points:**

**Dr Volodymyr Tolubko**, Director of the State University of Telecommunications of Ukraine, has highlighted in the presentation "**Development of modern ICT and their impact on the digital transformation of the state**" that, for the prosperity of governments, it is necessary to develop and support digital technologies, namely: artificial intelligence, machine learning, blockchain,

cryptocurrency, cybersecurity, computer vision, mobile networks based on 5G technology, Internet of Things and others. He said that accelerating the digital development of the state involves the following steps: elimination of bureaucratic obstacles to the development of the digital economy (i); incentives for businesses seeking digitalization (ii); implementation by the state of large-scale digital transformation projects based on modern models of public-private partnership (iii); development and deepening of digital competencies of citizens (iv); development of digital entrepreneurship (v). One other element that has been mentioned pertains to the fact that the global market for digital transformation is constantly growing. It is projected that, over the next 5 years, it will increase by 138 billion US Dollars, or by 17%. The main participants in the digital transformation market are companies from China and the United States. He concluded by highlighting that the increase of economic indicators of the state depends on the implementation of digital transformation, and thus, it is necessary to address the following items: development of digital infrastructure as the basis of the digital economy (i); improvement and adaptation of the country's legislation to the key standards and recommendations of the International Telecommunication Union in the digital sphere (ii); introduction of mechanisms of state support for the development of the digital economy (iii); development of digital literacy of the population in accordance with the requirements of the new economy (iv); protection of intellectual property (v); ensuring accountability and effectiveness of institutions that use the Internet to empower citizens (vi); digitalization of the real sector, including through the promotion of infrastructure development "Industry 5.0", digital financial services, digital workplace (vii) and finally digitalization of basic spheres of life through digital transformation (viii).

**Mr Marco Obiso**, Head of the Cybersecurity division and acting Chief of the Digital Network Society Department, ITU in his presentation titled: **“Partnering with countries in their digital transformation journeys”**. Mr Obiso highlighted that it is essential to establish a framework to understand how digital transformation addresses many national priorities, such as the case for the political priority (regarding the citizen services) or the social priority (mainly education, health, youth, gender and inclusion) as well as the economic priority (concerning the innovation, entrepreneurship, SMEs, Industries etc.) and the priority around environmental development. He then mentioned the ITU wheel of transformation, where 11 aspects of people’s lives were presented and categorized in three main sectors of interest. The first one is the sector of value creation, which addresses the thematic priorities of digital innovation and entrepreneurship (i), of Application & services (ii) and of Circular Economy (iii); the second one is defined as the Access sector, focusing on Institutional arrangements (i), Legal, policy & regulatory framework (ii), Sectoral requirements (iii), Connectivity & digital infrastructure (iv) and Cybersecurity and trust (v). Finally, the third sector is the Adoption sector, in which designed solutions tackle the problems around Digital Inclusion (i), Skill needs (ii) and Baselines & benchmarks (iii).. He moved on with his presentation by underlying how ITU is implementing and carrying out different impactful partnerships around those areas of interest across all the different ITU regions. Such global efforts led by ITU focus on a 6-step approach. The first step relates to the 360-country digital landscape, where a 360 assessment is carried out to create a knowledge basis and carry a situation analysis of a country standpoint on a topic of focus. The second step is linked with the set-up of the national priorities based on specific gaps identified at the country-level; once this is achieved, the third step then outlines the type of intervention that is required to address these gaps. Finally, the 4th step consists of producing an in-depth analysis and a series of recommendations. This analysis sets the basis for the 5th step, which is the implementation phase, in close coordination with the countries as well as relevant partners in order to leverage their respective expertise. The last step is the elaboration of an evaluation impact stock-taking exercise, where data are collected to measure the impact of the activities delivered. In conclusion, Mr Obiso’s presentation demonstrated ITU’s operational approach

in leveraging meaningful partnerships with Member States to support their digital transformation journey, shaping their path with tangible results and concrete deliverables.

**Ms Rosheen Awotar-Mauree**, ITU-D Study Group Advisor at the Telecommunication Development Bureau (BDT) of ITU has given a presentation titled: **“ITU Study Groups an insight for working together”**. In this presentation, an overview of the ITU Study Groups mechanism is divided according to ITU's sectors, namely: ITU-Development Sector Study Groups (Hereafter ITU-D Study Groups), the ITU-Standardization Sector Study Group (Hereafter ITU-T Study Groups) and ITU-Radiocommunication Sector Study Groups (Hereafter ITU-R Study Groups). In ITU-R, Study Groups covered thematic priorities such as Spectrum management, Radiowave propagation, Satellite, Terrestrial, Broadcasting and Science services; in ITU-T, studies focused on Operational aspects of service provision and telecom management, ICT economic and policy issues, Environment and circular economy, Broadband cable and TV, protocols – test specifications, QoS and QoE, Future Networks and many others; finally, ITU-D Study Groups work on topics around the enabling environment for the development of the ICTs and the promotion of sustainable development of ICT services and applications. During her presentation, Ms Awotar-Mauree also provided an insight into the work of ITU-D study group 1 and study group 2 was given. The subject of research of ITU-D Study group 1 is “Enabling environment for the development of telecommunications/ICTs”; whereas ITU study group 2 focuses on “ICT services and applications for the promotion of sustainable development”. During the presentation, the final reports from ITU-D Study Groups covering the three-year period of 2018-2021 were also presented, highlighting the insights and findings contained in the publications. From initiatives to adapt these guidelines from the reports into national-level policies, to connect countries and partners for capacity building and in-country implementation actions, these publications aim at helping Member States to move closer to achieving the United Nations Sustainable Development Goals (SDG) as well as their specific development priorities. Finally, the future appointments and the procedures on how to apply and participate in the work of the ITU-D study groups was presented for information to the State University of Telecommunications of Ukraine. It was also highlighted that women are strongly encouraged to apply to play an active role in the field. More information on how to take part into the work of the ITU-D Study Groups can be found at <https://www.itu.int/en/mediacentre/backgrounders/Pages/itu-study-groups.aspx> |

**Dr Viktor Katok**, Chief Adviser for Scientific and Technical Policy of JSC "Ukrtelecom", Ukraine has delivered a presentation titled: **“Digital Transformation of Ukrainian Enterprises on The Basis of Modern Information Technologies”**. In this presentation, Dr Katok has highlighted the main strategic initiatives and direction to achieve Industry 5.0, focusing on a series of key targets for Ukraine to follow: Engineering (i); Metallurgy and mining industry (ii); Branches processing and food industry (iii); Easy industry (iv); Energy - production, transport, distribution energy resources(v); Infrastructural objects - networks (such as gas, oil), marine and airports, railway, highways (vi); Urban infrastructure - security, traffic, buildings, utilities and power grid etc. (vii); Agro-processing branch (viii); Military-industrial (ix) complex and finally Aerospace branch (x). In his presentation, the importance of the concept of enterprise system integration was also highlighted as well as the management of the content associated with digital transformation. Moreover, he outlined the importance of cloud technologies for integration mechanisms, data migration and management. He explained that cloud computing is nowadays becoming a more and more important actor in the digital transformation and its development is also shown by the expenditure associated with the technologies and services under development. In his conclusion, Dr Katok stated that for the successful implementation of digital transformation in the enterprises in Ukraine, it is necessary to address the following items: 1) Understanding, analytics, tracking client experience; 2) Work with the team – meaning to involve the



employees in the digital transformation, with the formation of modern corporate culture, teaching work with digital tools; 3) Construction effective operating room models by implemented new systems, i.e. rebuilt key architecture, modernized business applications and processes.

**Mr Yuri Kargapolov**, General Director of Consortium “Ukrainian numbering naming and addressing operation center” delivered a presentation which is titled: «**Choice of user services of relevant situations" here and now "and the task of digital transformation**». In his presentation, Mr Kargapolov started by questioning why we talk about digital transformation and what is the meaning of this concept, and for him, the goal of digital transformation is to match the quality of real-life services as much as possible in the space of convergent electronic communications. His presentation outlined the complexity of such tasks as the users operate in complex network structures of IP. Services are the subject area of converged network structures. All processes of interaction "users - services" are convergent not only on the nature of interaction in the electronic communications environment, but also on interaction in the coordinate system, which requires consideration of time, place and circumstances of the action, which creates unpredictable scenarios. For him, this is proof of disadvantage as it shows the inability to quickly organize adaptive associations between the required services and the user in a given situation, due to the fact that the proposed four-level reference model does not fully take into account the aspect of identity management. For Mr Kargapolov it is necessary to move from a four-level model to a five-level model. Between the network and service support levels should be the IdM layer, which should address the technological challenges of building adaptive associations between application-level requests and responding to device-level requests. At the device level, "here and now" conditions are formed with their transmission through network means (network level), at the application level - targeted definition of the required functionality, at the IDM management level - the creation of relevant "here and now" associations, which are practised at the support level services with the ability to customize services for different users. If we exclude from the model the level of IdM management, the construction of associative ties between services and the situation that has arisen is not solved, if you do not use manual mode. Therefore, now there is an urgent problem of using artificial technologies to automate the process of identifying digital objects.

**Ms Olga Zinchenko**, Head of the Department of Artificial intelligence, State University of Telecommunications, Ukraine, has delivered her presentation titled “Application of Artificial Intelligence Technologies to NFV Management”. In her presentation, she has highlighted the importance of intelligent technologies in contributing to business success, but they require organisations to fundamentally transform their IT systems and practices. Four areas of transformation have been identified in order to achieve such success, namely Protecting the digital enterprise; Empowering the data-driven organization; Enabling workplace productivity (Transforming to a hybrid infrastructure); and Transforming to a hybrid infrastructure, with the steps for transformation into hybrid infrastructure being mentioned. She then mentions that the purpose of using artificial intelligence technologies is to build an autonomous data centre that does not require constant attention and manual configuration, with the components of the cyclic model of functioning the centre. Examples of artificial intelligence systems are then listed, such as InfoSight and its corresponding components, functions and benefits. She completes her presentation by stating how The State University of Telecommunications is conducting research to ensure the effectiveness of the information system based on SDN and NFV technologies and listed some examples and results of the research done.

**Mr Vitalii Savchenko**, Head of the Scientific Educational Institute of Cyber Security, State University of Telecommunications, Ukraine who gave his presentation which is titled: «Cybersecurity in a Digital Era». In his presentation, it was highlighted how high-performance computers can identify patterns

and perform predictive analytics to facilitate automated learning and decision-making. One of the examples that were proposed was the case of the Internet of things: sensors and actuators enable the use of smart interconnected devices or products that can be remotely accessed or tracked. He also presented the case of advanced robotics: indeed, artificial intelligence, computer vision, sensors, and motors are enabling robots to perform increasingly complex tasks, with less repetitive and predictable patterns. Other examples that are cited pertain to cloud services and digital platforms; blockchain; autonomous and semi-autonomous navigation; 3D printing; virtual and augmented reality. All those fields are however at risk of cyber-attacks, and that is why cybersecurity should be addressed in all these fields.

**Ms Andrii Zakhazhevskyi**, Doctoral student of the State University of Telecommunications, Ukraine, has delivered his presentation, titled: **«Methods of creating management of infocommunication networks in emergency systems during the digital transformation of the state»**, in which he described how four areas of transformation in the digital field exists and needs to be addressed by the private sector, namely: Protecting the digital enterprise (i); Empowering the data-driven organization (ii); Enabling workplace productivity (Transforming to a hybrid infrastructure) (iii) - Transforming to a hybrid infrastructure. He then explained that transformation into hybrid infrastructure can be achieved by following these steps: 1) Creation of basic infrastructure on demand; 2) Expansion of flexible IT operations; 3) Optimization of application development; 4) Accelerate market entry through the cloud. Furthermore, he explained that the purpose of using artificial intelligence technologies in modern corporate IT infrastructure would be to build an autonomous data center that no longer requires constant attention and manual configuration. In other words, an autonomous data center would provide: 1) self-tuning based on automation of current daily operations; 2) self-recovery by identifying potential problems and preventing them; 3) self-optimization of the balance of resources, productivity and value. He concluded by stating that the practical use of artificial intelligence systems will be considered in the example of virtualization of network functions. As the complexity of the network increases, it is necessary to ensure its efficiency.

**Ms Nataliia Rudenko**, Head of the Department of Mobile and Video Information Technologies at the State University of Telecommunications of Ukraine has delivered her presentation on **“The Role Of Mobile Technologies in the Digital Transformation of the State”**. She begins her presentation by highlighting how the development of Ukraine’s digital economy is to create market incentives; motivations; demand and demand for digital technologies; products and services among Ukrainian sectors of industry, life, business and society for their efficiency; competitiveness and national development; growth of high-tech products; and welfare of the population. She then goes on to provide a background on the concept of digitalization, its impact on economic growth, as well as the opportunities including Digital business models; Digitization in research and development; Digital supply chain; and High production efficiency. The issues of digitalization of different stakeholders were also mentioned, including government agencies, educational institutions, IT companies, services, and services centers, in which the translation of most services online and simplification of procedures is crucial to digital transformation in Ukraine. She has highlighted the importance of fifth-generation mobile communication technologies in digital transformation, with the trends, reasons and solutions stated for this claim. She also emphasized how OFDM technology plays a key role to ensure greater reliability in information transmission alongside other advantages and features that benefit the digital transformation process, alongside stating how 5G is only a part of the process but still acknowledged the applications and benefits of this technology. She concluded her presentation by reemphasizing the influence of mobile technologies in accelerating the digital transformation of Ukraine.

## OPENING ADDRESSES OF THE AFTERNOON SESSION

**Speakers:** **Mr Osnat Lubrani**, UN Resident and Humanitarian Coordinator, Ukraine; **Mr Jaroslaw Ponder**, Head, ITU Office for Europe

### Key Points:

**Mr Jaroslaw Ponder**, Head of the ITU Office for Europe, welcomed participants to the afternoon session, which was the occasion to focus on the UN multi-agency corporation and multi-stakeholder partnerships, as well as advancing inclusive, sustainable and resilient digital transformation. He had also welcomed United Nations (UN) colleagues, who would be intervening by sharing how grasping the full potential of ICTs, infrastructures and services could improve people's lives and foster a digital economy, as well as emphasized the importance of an interagency multistakeholder and partnership-based approach mentioned in the UN Secretary-General Roadmap for Digital Cooperation. In terms of the work of ITU, it was highlighted that together with all UN partners, ITU is advancing the common agenda presented by the UN Secretary-General to overcome digital divides and taking a human-centred digital transformation approach that respects the rights and protects everyone from online risks and harms; ITU is also involved in the elaboration of the digital roadmap by leading the work on connectivity and capacity development, in turn launching the [Partner2Connect Coalition](#), which involves various stakeholders including government actors, private sectors, UN sister agencies and youth organizations to foster digital transformation and meaningful connectivity from connecting people everywhere, and empowering communities building, digital ecosystems and incentivizing investment.

The recent initiatives by the European Commission have been praised, including their new connectivity strategy aiming at building and fostering partnerships with countries globally to invest in quality infrastructure and connecting with people and services, highlighting the importance and role to ensure efforts being mainstreamed particularly at the regional level of Europe.

The importance and impacts of cooperation have been highlighted, with unique opportunities being offered by the UN system for UN structures in Europe and Central Asia, including gaps and reforms within the system, as well as the Sustainable Development Goals 2030 Agenda, to improve cooperation within the digital sectors. The UN Digital Transformation Group for Europe and Central Asia (UNDTG4ECA) had been listed as a good initiative, in which a collaborative platform is provided for UN agencies to work together towards strengthening capacities to support digital transformation.

Mr Ponder then passed the floor to **Mr Aliaksei Vavokhin**, Economist at the UN Resident Coordinator Office of Ukraine, by mentioning the importance of the United Nations Country Teams.

Mr Vavokhin welcomed all participants to this discussion, underlying that UN systems and all stakeholders could jointly contribute to accelerating digital transformation. With examples of achievements, key challenges and opportunities in digitalization, they have shown how Ukraine has a lot to offer in the global perspective on the implementation of digital development. To combat the digital divide, it was stated how unequal access to devices, the Internet and digital literacy skills should be closely managed in order to avoid a new digital divide in society, with good practices and initiatives in Ukraine, such as the Common Country Analysis and plans adhering to the UN Sustainable Development Cooperation Framework, to support how they could provide valuable opportunities in developing a strong digital agenda, increasing transparency and accountability of Ukrainian institutions, in turn potentially addressing some of the key challenges around governing societal digital transformation. The importance to integrate digital into the school curricula was also highlighted, and it was reiterated how the development of strong digital economy governance systems is firmly

supported in accordance with the premises of the UN Secretary-General Roadmap for Digital Cooperation, contributing to the promotion of a global digital economy and society.

## SESSION 2: APPROACHES OF THE UN SYSTEM TO SUPPORT DIGITAL TRANSFORMATION

**Focus:** Within the framework of the UN Digital Transformation Group for Europe and Central Asia (UN DTG4ECA), the session provided a platform to present ongoing efforts of the United Nations (UN) in accelerating digital transformation and supporting the Member States in their digital journey to achieve the Sustainable Development Goals (SDGs), through showcasing a series of UN multi-agency actions, activities, initiatives, and partnerships.

**Moderator:** Ms Sarah Delporte, Project Officer, ITU Office of Europe

**Speakers:** Ms Sarah Delporte, Project Officer, ITU Office for Europe; Ms Sophie Treinen, Information and Knowledge Management Officer and Digital Agriculture Team Leader, FAO Regional Office for Europe and Central Asia; Mr Ryan Dos Santos, Technical Officer - Digital Health, WHO Europe and Central Asia; Mr Milan Dacic, WMO Representative for Europe; Ms Maria Teresa Pisani, Economic Affairs Officer at the Economic Cooperation and Trade Division, UNECE; Ms Mariia Pavlova, Project Associate, UNIDO Regional Office for Europe and Central Asia; Ms Natalija Ostojic, Technical Project Analyst, UN Women Serbia; Ms Sarah Fuller, Education Consultant, UNICEF Regional Office for Europe and Central Asia

### Key Points:

Ms Sarah Delporte, Project Officer of the ITU Office for Europe, provided an overview of ITU's engagement in the UN Development System in Europe and Central Asia both at the regional and national levels. The strategy follows the objective to strengthen cooperation of ITU with the UN Sustainable Development System; cooperation with the EU structures; and collaboration on ICT projects advancing the achievement of the SDGs, leading to foster digital transformation and ICT development through enhanced multi-stakeholder cooperation and inter-agency coordination. Upon this, ITU has developed several regional and national engagements with other UN agencies. Regionally, the ITU Office of Europe is co-chairing the UN Brussels Team Task Force on Digitalization for the SDGs and co-leading, together with the UNECE, the [UN Digital Transformation Group for Europe and Central Asia \(UNDTG4ECA\)](#).

The main objectives of the UN DTG4ECA include (i) strengthening information sharing on UN System activities within the regions; (ii) cooperation and collaboration between various UN agencies in digital transformation; (iii) promoting coordinated UN support to the Member States and UN Country Teams on digital transformation issues; as well as (iv) providing support to Issue-Based Coalitions and Knowledge Hubs of the UN System within the regions. These objectives translate into a series of activities held in 2021 such as the elaboration and publication of a [UNDTG4ECA ICTs Solutions Stocktaking Report](#) listing a series of UN activities, initiatives, and projects advancing digital transformation at the national and regional level with the potential of being scaled up across Europe and Central Asia; the UNDTG4ECA [“Cross-Cutting Session on Digitalization: Digital Transformation in the Wake of COVID-19”](#) held during the Regional Forum on Sustainable Development 2021; the thematic workshop on [“UNDTG4ECA: Driving the WSIS Action Lines to foster digital transformation in Europe and Central Asia”](#) held in the World Summit on the Information Society 2021; as well as the UNDTG4ECA Special session on [“Approaches of the UN system to support digital transformation”](#). Collaborations between ITU and other UN Agencies were also highlighted, including the [“M-Health](#)

[Innovation and Knowledge Hub for Europe](#)” jointly by ITU and WHO; [E-Waste Monitoring for the Western Balkans](#) jointly by ITU, UNEP, and UNITAR-SCYCLE; and the ITU-UNICEF collaboration on the report [“Connectivity in Education: Status and recent developments in nine non-European Union countries”](#). The latter constitutes an example of multi-agency efforts driving policy support to UNCTs. The ITU-UNICEF implementation strategy follows a four steps approach, namely: (i) the elaboration of the report identifying the key national and sub-regional trends that characterize the interplay between the development of education systems and broadband connectivity development to provide all interested stakeholders with the necessary information for effective decision-making; (ii) a regional briefing with key partners and funders to present outcomes, illustrate the way forward for acting at country level, and take strategic decisions on which countries to engage with first; (iii) national workshops to engage Ministries of ICTs and Ministries of Education in interactive policy discussions about specific challenges, identify gaps and partnerships to fill these gaps at the country level; and (iv) then providing support and assistance to fill identified gaps within the countries.

On a national level, the ITU Office of Europe collaborates with UNCTs by developing Digital Development Country Profiles, which provides (i) comparable analysis for priority countries of the European region, (ii) an overview of the key components of digital development; as well as (iii) pave the way for fit-for-purpose engagements of the UN System in the countries. The country profiles follow a five-building blocks framework that unravels the country’s digital transformation, including meaningful connectivity as a foundation for digital transformation; people-government and sector-centric digital transformation; and finally digital-centric innovation ecosystem. After (i) the elaboration of these country profiles, they lead to (ii) coordination meetings, which are special ITU-led sessions focusing on digital transformation with the participation of RCO, PMT, UNCT and others to map current activities, identify opportunities and potential events, alongside the focus on achieving UNSDCF objectives with discussion per results groups; (iii) implementation plans based on challenges, opportunities and synergies identified by results groups to decide on the activities that would be rolled out; and then (iv) further providence of assistance and support for evidence-based discussions with national counterparts; all under the framework to enhance digital cooperation with the UN Country Teams. Finally, the audience was invited to read the [ITU Office for Europe “Implementation Update Report: ITU Actions in Europe and Implementation of the ITU Regional Initiatives for Europe”](#) which provides a comprehensive overview of all ITU actions and implementation of ITU Regional Initiatives in Europe for the period 2021.

**Ms Sophie Treinen**, Information and Knowledge Management Officer and Digital Agriculture Team Leader at the FAO Regional Office for Europe and Central Asia, presented the joint work of ITU and the Food and Agriculture Organization (FAO) on “Digital transformation of agriculture in Europe and Central Asia”. The work of FAO on the digital transformation of agriculture started in 2009 with Virtual Extension Research Communication Networks, which is a conceptual model that employs Internet-based technologies and communication for development methodologies to facilitate networking, knowledge-sharing and interaction among agricultural institutions, producer organizations and other actors of the agricultural innovation system. FAO has then extended to regional events and national digital agriculture strategies. One of the most recent engagements of FAO is in the UN Digital Transformation Group, where FAO actively promotes the concept of smart digital villages. FAO, in collaboration with ITU, has also developed national digital frameworks for Albania, Armenia, Bosnia-Herzegovina, Kyrgyzstan, Moldova, Turkey and Uzbekistan, such that strategies could be adopted could be adapted on a national level. Consequently, a report was jointly published by FAO and ITU on the [“Status of Digital Agriculture in 18 countries of Europe and Central Asia”](#), which is the result of a



1-year study addressing a broad range of issues concerning contemporary policies and practices across Europe and CIS in e-agriculture, and covers countries including Albania, Armenia, Azerbaijan, Belarus, Bosnia and Herzegovina, Georgia, Kazakhstan, Kyrgyzstan, Moldova, Montenegro, North Macedonia, the Russian Federation, Serbia, Tajikistan, Turkey, Turkmenistan, Ukraine, and Uzbekistan. Good practices from the same countries have also been acknowledged via the ITU-FAO co-organized event [“Digital Excellence in Agriculture: ITU-FAO Regional Contest in Europe and Central Asia”](#). Following the ITU-FAO joint study, 7 categories were identified for such a contest: Category 1: “Regulatory frameworks/Enhanced market access/Financial services and insurance”; Category 2: “Capacity development and empowerment”; Category 3: “Agriculture innovations systems and sustainable farming - farm automation, robots, drones”; Category 4: “Agriculture innovations systems and sustainable farming – specific solutions”; Category 5: “Agriculture innovations systems and sustainable farming – connected farm management systems”; Category 6: “Disaster risk management and early warning systems”; and Category 7: “Food loss and waste/Food safety and traceability”.

This regional contest was launched in November 2021 with a call for good practices, which resulted in 171 eligible practices distributed relatively evenly throughout the categories. Over 150 practices are targeting smallholders, and over 100 place emphasis on partnerships. 21 finalists (3 per category) were selected to compete for the title of “Digital Excellence in Agriculture”. In addition, 7 “champions” (1 per category) were identified from the list of 18 countries covered by the ITU-FAO joint study. The [“Digital Excellence in Agriculture Report”](#) jointly elaborated by FAO and ITU, and to be released in early 2022, highlighted several challenges within digital transformation in agriculture. Agriculture stakeholders face challenges ranging from (i) technological difficulties, including challenges involving building and operating digital tools, products and services; to (ii) policy issues that may require the implementation of policy instruments and their use in addressing the creation of a well-functioning digital agri-innovation ecosystem; or (iii) commercialization-related challenges with difficulties in scaling up digital agriculture products and services; as well as (iv) other challenges related to digital skills, mentality and the user and developer attitudes. To make the best use of the potential of digital technologies, it is important to take a detailed look at difficulties and problems faced by those developing such products and services, as such reviews would provide useful information for all developers and service providers already active or planning to enter the field, as well as provide guidance for decision-makers on possible intervention's points and areas.

Looking forward, FAO is working towards embedding good practices at the village level in areas including (i) digital skills; (ii) capacity development; (iii) administrative platform; (iv) extension and advisory services; (v) soil mapping; (vi) land cadaster; (vii) value chain; (viii) market access; (ix) rural development; (x) agritourism; and (xi) financial services.

**Mr Ryan Dos Santos**, Technical Officer of Digital Health at WHO Europe and Central Asia, introduced the WHO in Europe flagship initiative on “Empowerment through digital health”. The [“WHO Global Strategy on Digital Health 2020-2025”](#) was introduced, which aims at strengthening health systems, empowering patients, and achieving the vision of “health for all” by applying digital health technologies for consumers, health professionals, healthcare providers and industries. This strategy is designed to be fit for purpose and available for all Member States, including those with limited access to digital technologies, goods and services, alongside encompassing eHealth and other uses of digital health technologies. The objectives are (i) promoting global collaboration and advancement of the knowledge transfer on digital health; (ii) advancing national digital health strategies’ implementation; (iii) strengthening digital health governance at global, regional and national levels, as well as (iv) advocating for people-centered digital health systems.

Digital health is implemented in numerous cases, including telemedicine, big data analytics, artificial intelligence, machine learning, and Internet of Medical Things, all of which improves continuity of care from data, treatment and care perspectives, as well as enable and empower health workforces. To promote empowerment through digital health, WHO Europe has created the [“WHO/Europe’s Digital Health Flagship Initiative”](#), which provides policy guidance and technical expertise to European countries on (i) safety and efficacy of digital health solutions that preserve equity, gender equality and human rights as core values in development and deployment; (ii) complementing and operationalizing strategies of health systems; and (iii) delivering digital public health goods. The strategic objectives of the initiative include (i) safe, inclusive and people-centered digital health services; (ii) enabling resilient individuals and communities via data and digital technologies, and (iii) transforming health systems towards preventive health and well-being.

With wide coverage for services and initiatives by WHO Europe, impacts of the initiative would include (i) more resilient health systems and improved access to quality healthcare; (ii) an enabled and digital capable health workforce; (iii) increased regional alignment and leapfrogging opportunities by creating sub-regional and thematic networks for digital health; as well as (iv) strategically repositioning health data use. Collaborative work between WHO and other UN Agencies include (i) [WHO/Europe sub-regional digital health networks such as in the Western Balkans](#); (ii) [ITU-WHO mHealth Hub](#); [UNICEF/WHO COVID Digital Health Centre of Excellence \(DICE\)](#); and (iii) UNCTAD Guidelines on consumer protection and digitalization in digital health.

**Mr Milan Dacic**, WMO Representative for Europe, provided an overview of the partnership of WMO within the [International Network for Multi-Hazard Early Warning Systems](#) (IN-MHEWS) for Disaster Risk Reduction to provide support to the UN Member States in Europe, alongside the supercomputing power and [WMO Unified Data Policy](#) serving societies and their economies. The social benefits of early warning systems are spread unevenly across regions, hence the United Nations Office for Disaster Risk Reduction (UNDRR), the World Meteorological Organization (WMO), and other international and national agencies have established the International Network for Multi-Hazard Early Warning Systems (IN-MHEWS) with a multi-stakeholder partnership to facilitate the sharing of expertise and good practice on strengthening multi-hazard early warning systems as an integral component of national strategies for (i) disaster risk reduction, (ii) climate change adaptation, and (iii) building resilience, in order to support the implementation of the [Sendai Framework for Disaster Risk Reduction 2015-2030](#), as well as the [United Nations Plan of Action on Disaster Risk Reduction for Resilience](#). To implement this framework, IN-MHEWS would also enhance international cooperation with developing countries by providing support to complement their national actions. The ongoing collaboration of IN-MHEWS involves organizations including (i) the World Meteorological Organization (WMO); (ii) 18 National Hydrometeorological Services from SEE and European Meteorological Infrastructure; (iii) The Global Facility for Disaster Reduction and Recovery (GFDRR) of the World Bank; as well as (iv) the Joint Research Center of the European Commission. A proposal on the “Regionalization of the International Network IN-MHEWS to Europe and Central Asia region and integration of SEE MHEWS Strategic Alliance in regionalized IN-MHEWS” is also being developed.

Collaborations under the European Commission Lead in Supercomputing have taken steps following the Digital Decade agenda and developed a new regulation proposal for the [European High-Performance Computing Joint Undertaking \(EuroHPC\)](#) concerning supercomputing and quantum computing, which supports research and innovation activities for new supercomputing technologies and fosters necessary skills to use the infrastructure. An investment of 8 billion euros has also been approved to support over 800 applications in the European scientific, industrial and public sectors.

The [WMO-UNDRR Center of Excellence](#) acts as an information hub about the escalating impacts of climate change and extreme weather, as well as ways to manage and mitigate such risks, which would benefit by promoting efforts for better understanding, advance joint-research, policies, and capacity-building. Updating the WMO-Unified Data Policy would strengthen and better-sustain monitoring and predictions of all Earth-system components, which leads to creating an additional exchange of all types of environmental data to deliver better, more accurate and timely weather- and climate-related services to constituencies.

Following the above, WMO aims at regionalizing IN-MHEWS initiating a first practical example of uses and benefits provided by the system to Members such as the European Commission, WMO, UNDRR, ECMWF, ITU, JRC, and other related organizations, use supercomputer power from ECHPC Joint Undertaking and deliver multi-hazard early warning advisories to all SEE Member States for operational work use to support economy sectors.

**Ms Maria Teresa Pisani**, Economic Affairs Officer at the Economic Cooperation and Trade Division of UNECE, introduced the [“Traceability for Sustainable Garment and Footwear”](#) initiative, which focuses on traceability and transparency of value chains in the garment and footwear industry. UNECE developed a blockchain system that operates with industry actors to support more responsible business models against high environmental, mental, social risks associated with them. The sector has complex fragmented mechanisms with scattered global production facilities, and is an industry made mostly of SMEs in the European Union that employs lots of women and girls.

Three main factors were identified to underpin more responsible production and consumption patterns, which include (i) increasing consumers’ attention on reliability of sustainability claims on clothing; (ii) increasing civil society, investors and regulators’ attention on reliability of sustainability claims and performance of actors in this industry; and (iii) rapid acceleration of digital transformation. All leads to more responsible choices increasing bodies of policies and regulations looking at diligence and sustainability performance, as well as supporting sustainability performance with necessary data and evidence exchange. The EU textile strategy, as well as the digital and environmental passports are all policy regulatory efforts in identifying traceability and transparency of the value chain as important factors and enablers.

With these set of considerations, three different dimensions are covered: (i) A policy-model, with the adoption of the policy recommendation number 46, which provides an overview of key measures that governments should put in place, to promote accessibility and transparency of companies. (ii) A business and data model which serves to establish a common understanding of data and information types that value chain actors should collect, so that reliable and credible claims in compliance with sustainability standards could be supported. And (iii) a technology model containing blockchain pilots that the UNECE started in 2021 with 60 industry actors including brands, retailers, manufacturers, raw material providers, standard-setting bodies, certification bodies, as well as international organizations, which contributes to creating a multi-stakeholder approach for the pilot project implementation. The blockchain system functions to ensure full transparency, handle on- and off-chain data and transactions, as well as incorporate privacy and confidentiality in design functionality. Currently, over 20 cases are running in blockchain pilots.

[“The Sustainability Pledge”](#) initiative invites industry actors to submit concrete pledges to the implementation of recommendations and standards developed under the project. There are now over 50 industry actors and around 130 partners who have submitted pledges with concrete actions and KPIs to measure progress and to monitor performance on their commitments. This approach (i) allows

product tracking back to raw material extraction and processing; (ii) enables manufacturers to create product digital and physical twins; (iii) benefits market surveillance and customs authorities; (iv) provide reliable information to policymakers; (v) links incentives to sustainability performance; (vi) allows citizens to access relevant and verified product information; and (vii) enables services concerning circular business models, all of which promote sustainability, circularity, and diligence under the framework of SDG 8 “Decent Work and Economic Growth”, SDG 12 “Responsible Consumption and Production” and SDG 17 “Partnerships for the Goals”.

**Ms Mariia Pavlova**, Project Associate at the UNIDO Regional Office for Europe and Central Asia, shared how UNIDO is being used as a platform to promote women’s economic empowerment, entrepreneurship and leadership in the digital age. The objective is to encourage, support and scale up the advancement of women’s empowerment agenda in the Europe and Central Asia regions and beyond. UNIDO organized 6 thematic webinars and panel discussions on the topic of [“Emerging Opportunities for Women in the Digital Age”](#) within the third Eurasian Women’s Forum framework. From a governmental perspective, suggestions deriving from the webinars include (i) fostering a structural change to create a non-discriminatory ecosystem that allows redistributing work; (ii) ensuring girls have access to STEM education, are offered more individualized and flexible learning opportunities, and learn digital literacy free from biases and prejudices; (iii) including more women in policy decision-making and technology design processes to ensure gender sensitivity; and (iv) investing in expertise and facilitating matching women’s skills with relevant job opportunities.

In the private sector, suggestions include (i) promoting internship, apprenticeship training and upskilling programmes for women by cooperating with public sectors; and (ii) supporting life-long learning, rescaling and upscaling digital skills of women and girls for new job markets.

For UN and International organizations, they should (i) implement more initiatives to showcase success stories and encourage experience sharing, networking and mentorship; (ii) undertake awareness-raising to tackle gender biases that hinder women’s technological access; and (iii) make efforts to develop coordinated and comprehensive regional or global digital skills strategies.

UNIDO has also developed a new online training course on [“Digital Business Innovations for Women Entrepreneurs and Managers”](#), which consists of free-of-charge 1-hour video lectures on modules including digital technologies basics; digital marketing; digital project management; e-commerce; social media marketing; and customer relationship management. The target audience could learn digital skills and key competencies such as self-awareness and empathy. The course received positive feedback and is deemed useful for personal and professional development.

**Ms Natalija Ostojic**, Technical Project Analyst at UN Women Serbia, presented a case study concerning gender equality and ICT innovations in Serbia. Key findings of the gender equality and digitalization situation in Serbia include (i) women use the Internet and computers less than men; (ii) gender-based patterns are exhibited in Internet use, with women using the Internet for communication and posting content, while men use it for entertainment; (iii) both genders have equal development levels of digital skills; and (iv) Serbian citizens having digital skills levels below average in the European Union. With such findings, UN Women Serbia addressed recognized gaps in ICTs usage by women, especially those in rural areas and entrepreneurs, as well as in areas of providing specialized services to women survivors of violence via partnerships with women civil society organizations.

Concerning the ICT innovation for rural women and women entrepreneurs, the [“Online Farmers’ Market”](#) is an initiative that has gathered 122 women farmers in response to lockdown to showcase their products; the first gender analysis of digital work in Serbia was also conducted in collaboration with the Association of Businesswomen of Serbia and Public Policy Research Centre, aiming to shed light on the position of women digital workers. Regarding the elimination of Violence Against Women and Girls (VAWG) with ICT innovations, an SOS helpline mobile application “Sound of Soul – SOS” was developed, acting as a fast and simple solution to improve services to VAWG survivors during times of crisis and post-crisis especially posed by the pandemic, and also incorporates inclusivity and accessibility features for target users. A web-based platform was established as well for women and girl survivors of violence for customized free legal support. The [Gender Equality Index of the Republic of Serbia 2021](#) has been developed, which focuses on digitalization, future of work and gender equality, alongside combining perspectives of digital and digitalized gender gaps through 3 segments: (i) use of ICTs, digital skills and gender equality; (ii) digital transformation of the world of work; and (iii) broader consequences of digitalization on human rights and violence against women.

**Ms Sarah Fuller**, Education Consultant of UNICEF Regional Office for Europe and Central Asia, has given an overview of the UNICEF and ITU collaboration to bridge the digital divide in the regions. [The LearnIn initiative](#) was created by UNICEF in partnership with the Zurich University of Teacher Education PHZH, aiming to support teachers and students as life-long learners within a digital environment to foster collaboration by providing quality, personalized and culturally relevant learning opportunities. The initiative is based on a framework that requires the establishment of an enabling environment to facilitate youth engagement; connectivity and devices; platforms and content; and teacher upskilling and support. The PlayIn initiative supports countries to develop and customize digital learning platforms to promote early childhood education.

The [“Connectivity in Education: Status and recent developments in nine non-European Union countries”](#) report involves ITU-UNICEF collaboration, covering areas including education systems; quality of education; broadband connectivity; government strategies; partnerships and financing; and COVID-19 responses. This report enables further collaboration between UNICEF, ITU and other partners that are interested in support of the countries and according to their needs. From 2022, the ITU office for Europe and the UNICEF Regional Office in Europe and Central Asia will support national teams and partners to co-design national workshops with relevant Ministries, partners, donors and relevant stakeholders. The goal of these National workshops is to dive more deeply into (i) the findings of each country to understand persistent barriers and bottlenecks; (ii) actions that each country has already done; as well as (iii) opportunities for expanding connectivity for education to bridge the digital divide and to make sure technologies are leveraged to improve inclusiveness, quality and equity of education.

Regional digital learning initiatives are further supported by [Giga Connect](#), which is a joint ITU and UNICEF Global initiative that was launched in 2019, and aims to connect every school to the Internet by 2030. Giga is supporting (i) the mapping of school connectivity; (ii) affordable and sustainable financing; (iii) technical solutions; and (iv) fit for purpose infrastructure to support digital development. Giga is also working with governments to identify and implement digital public goods at scale. Resource packages are also developed in collaboration with ITU, which includes a [country brief for each of the nine countries](#) that are included in the report, such that national decision-makers; ministries of Education and ICTs, the private sector, and other relevant partners could use such information readily, as well as enable countries to understand what the regions are facing and how they are addressing such issues. The package provides an in-depth report with national and aggregate



analysis, a catalogue of digital and educational challenges and experiences within the country, visual briefs and country briefs.

### SESSION 3: ITU-UNEP-UNITAR E-WASTE MONITORING FOR THE WESTERN BALKANS

**Focus:** To present the “**Regional E-Waste Monitor for the Western Balkans**” initiative which is jointly implemented by **ITU Office for Europe**, **UNEP Europe Office**, and **UNEP Vienna Office**, alongside the collaboration of **UNITAR-SCYCLE** in Albania, Bosnia and Herzegovina, North Macedonia, Montenegro, and Serbia.

**Moderator:** Ms Sarah Delporte, Project Officer, ITU Office of Europe

**Speakers:** Mr Matthew Billot, Regional Coordinator, Science-Policy, UNEP Europe Office; Ms Rosie McDonald, E-Waste Data Associate Officer, Environment and Emergency Telecommunication Division, ITU; Ms Giulia Iattoni, Programme Associate at UNU-ViE-SCYCLE

#### Key Points:

Mr Matthew Billot, Regional Coordinator of Science-Policy at the UNEP Europe Office, provided an overview of the global e-waste challenge from environmental, social and economic perspectives. Key findings of the current e-waste situation include (i) discarded electrical and electronic equipment contains harmful substances to the environment and human health; (ii) only 17.4% of e-waste was officially documented as formally collected and recycled in 2019, with only 78 countries covered by Waste Electrical and Electronic Equipment (WEEE) policy, legislation or regulation; and (iii) a total of 52.6 million metric tonnes (Mt) of e-waste is generated globally. According to the [Global E-waste Monitor published by the ITU](#), it was predicted that global e-waste would reach 74 Mt by 2030, which is fueled by higher electric and electronic consumption rates, shorter lifecycles, and limited repair options. From the reasons for immense growth in the amount of e-waste, existing digital transformation strategies have exhibited a paradox created by e-waste, therefore it is important to collect data and statistics for assessments and policymaking, such that e-waste situations in the regions could be fully understood.

Ms Rosie McDonald, E-Waste Data Associate Officer of the Environment and Emergency Telecommunication Division at ITU, provided an overview of the project on “Regional E-waste Monitor for the Western Balkans”. The project is jointly implemented by the ITU Office of Europe and Environment and Emergency Telecommunications (EET) Division, UNEP Europe and Vienna Programme Office and UNITAR-SCYCLE, with the close collaboration of respective administrations and statistical offices of beneficiary countries.

Since international comparable information on the e-waste situation in beneficiary countries of the Western Balkans is limited, the project aims to create an assessment of e-waste statistics, management practices and legislation landscape to produce the Regional E-waste Monitor Report for the Western Balkans, in turn, building foundations for making digitization and digitization processes green and sustainable. With the project being in line with the ITU work programme on a circular economy for electronics and within the framework of the Global E-waste Statistics Partnership, the implementation of the project would also advance the implementation of the regional initiatives for Europe, specifically RI-EUR2 on [“A citizen-centric approach to building services for national administrations”](#), so as to equip national administrations with the knowledge base and strategies

necessary for greening and sustainability, as well as contribute to the process of digital integration within the region.

The four main focuses on this global e-waste statistics partnership are the global e-waste database, creating awareness, capacity building, and monitoring e-waste streams, such that changes in the e-waste situation can be tracked over time, understanding and interpretation of e-waste data can be enhanced, reliable and comparable e-waste statistics can be produced, and e-waste streams can be monitored. The already produced regional monitoring on e-waste statistics helped inform policymakers, industries, and businesses to enhance understanding and interpretation of regional e-waste data, in turn communicating such information to the general public and relevant stakeholders.

The objective of the project includes training of the National Statistical Offices (NSOs) of each of the 5 beneficiary countries to produce e-waste data for monitoring of SDG 12.5.1 “National recycling rate, tons of material recycled”, mapping recycling opportunities from waste, pollutants, and e-waste related health effects, all along with building national and regional capacities to help beneficiary countries in producing reliable and comparable e-waste statistics, as well as identify and share best practices. The output of the project will support the development of national and regional countermeasures through suitable policies, regulations and awareness-raising, as well as help analyze the trends of e-waste transboundary movement within and into the beneficiary countries.

The project will run from December 2021 to June 2023, and will include: a briefing on the project; online trainings to support NSOs in producing a regional e-waste data set for the Western Balkans; research, questionnaires and interviews for assessing the status of e-waste legislation and management; country data validation with NSO focal points, and finally the publication of the regional e-waste monitor. The expected impacts of the project are: helping to improve data availability and quality; producing internationally comparable e-waste statistics; assisting beneficiary countries in making digitalization policies and strategies green and sustainable; as well as increasing regional capacities on e-waste statistics for government officials, statisticians and other relevant stakeholders.

**Ms Giulia Iattoni**, Programme Associate at UNU-ViE-SCYCLE, has brought up the importance of e-waste data and statistics alongside the case of the Regional E-waste Monitor in the CIS+ Georgia. An overview of the work at SCYCLE was provided, which involves quantification with global and regional e-waste monitors, capacity building and training with e-waste academies EWAM & EWAS, as well as policy advice and partnerships with UN E-waste Coalition.

The importance of data was then emphasized to create more linkages to existing statistics and e-waste related data, alongside the need to capture the most essential e-waste features and the benefits that data brings towards addressing the e-waste challenge, evaluating developments over time, setting and accessing targets, identifying best practices in policies, improving the comparability between countries to contribute to the SDGs, particularly SDG 11 “Make cities and human settlements inclusive, safe, resilient and sustainable”, and SDG 12 “Ensure sustainable consumption and production patterns”. A harmonized framework to measure e-waste is then highlighted on a national and global level, with a national framework focusing on quantifying the magnitude of e-waste challenges, setting appropriate collection and recycling targets, establishing priorities for policymakers, influencing regulations and setting policy targets, as well as allocating adequate financial resources; and a global framework focusing on reducing the generation of e-waste, promoting recycling, preventing dumping, emissions, and improper e-waste treatment, as well as creating green hubs in the refurbishment and recycling sectors.

The Regional E-waste Monitors published were then introduced, including monitors for CIS and Georgia, Arab states, and a global monitor. Four (4) indicators are being used to produce the Regional

E-waste Monitor, including EEE POM; e-waste generated; e-waste formally collected; and e-waste collection rate, in which the data collected are harmonized according to international standards per SDG 12.

## CLOSING REMARKS

**Speakers:** **Mr Jaroslaw Ponder**, Head, ITU Office for Europe; **Mr Volodymyr Tolubko**, Director of the State University of Telecommunications, Ukraine

**Mr Jaroslaw Ponder**, Head of the ITU Office for Europe, acknowledged the valuable and ample content being presented during all three sessions, which involved an excellent overview of the Ukrainian situation concerning the types of work, engagements and approaches applied to advancing digital transformation at the national level and beyond; an extensive summary of collaborative work occurring between numerous United Nations (UN) agencies in digital development; and subsequently a summary of the challenges, opportunities and future prospects of e-waste and ways to join forces in addressing the challenges presented by e-waste monitoring.

With over 200 participants, gratitude was expressed to the moderators for smooth conduction of the forum, interpreters for providing the bilingual function during the meeting, and all panelists for presenting their experiences and the work that they and their organizations have done and are doing currently on critical issues.

The importance of cooperating with various stakeholders was then reemphasized, including governments, private sectors, civil societies, academia, UN Sister agencies, and other entities, to jointly work together in reducing the digital divide due to age, disability, gender, geography, skills, and socioeconomic status, as well as achieving environmentally sound digital transformation. ITU Office of Europe has assisted, and would continue assisting countries in developing policies, legislation, regulations, business solutions and practices to promote digital inclusion for everyone.

2022 was highlighted as an important year for digital development, with [the World Telecommunication Development Conference \(WTDC\)](#) as an important milestone for all countries working on accelerating digital transformation, since the conference provides the opportunity for all stakeholders to join forces at a time where the power of ICT infrastructure and services is conspicuous; thereby ITU encourages everyone to join the newest ITU initiative [“Partner2Connect”](#), as well as young people in the ICT sectors to take part in the [ITU Generation Connect](#) initiative. Ukraine was also acknowledged as one of the good performers and a key reference for many countries in terms of applying digital solutions.

With sincere thanks expressed to The State University of Telecommunications of Ukraine and others for their constant support throughout the preparations, as well as in shaping future plans to build capacities and increase multistakeholder engagement in the field of digital transformation, Mr Ponder passed the floor to **Mr Volodymyr Tolubko**, Director of the State University of Telecommunications of Ukraine.

Mr Tolubko expressed his sincere thanks to the ITU for providing the university with this opportunity and for hosting the forum, as well as member states for their support and development despite the pandemic. As the State University of Telecommunications of Ukraine has been a member of the ITU for 5 years since April 2016, and he expressed their pleasure to work under the leadership of the ITU Office of Europe.