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|  | **Document IEG-WTPF-26-2/15** |
| **5 February 2025** |
| **English only** |
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| Report by the Secretary-General |
| CONSOLIDATED CONTRIBUTIONS OF THE INFORMAL EXPERT GROUP MEMBERS TO THE SECOND DRAFT REPORT BY THE ITU SECRETARY-GENERAL |
| **Purpose**This document consolidates all contributions received from IEG-WTPF-26 members on the Second Draft of the Secretary General's report. The document is for consideration and discussion to inform development of the next draft report and draft Opinions.**Action required**The Informal Expert Group on WTPF-26 is invited to* **Consider** and discuss the consolidated contributions
* **Provide guidance** on harmonizing overlapping proposals within each thematic cluster

\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_**References** [*IEG-WTPF-26 webpage*](https://www.itu.int/en/council/Pages/ieg-wtpf-26.aspx) |



18 November 2024

Second draft Report by the ITU Secretary-General
for the World Telecommunication/Information and Communication
Technology Policy Forum 2026

# 1 The Seventh World Telecommunication/Information and Communication Technology Policy Forum 2026 (WTPF-26)

1.1 Originally established by the Plenipotentiary Conference (Kyoto, 1994) of the International Telecommunication Union (ITU), the World Telecommunication/Information and Communication Technology Policy Forum (WTPF) has been successfully convened in 1996, 1998, 2001, 2009, 2013 and 2021. By its [Resolution 2 (Rev. Bucharest, 2022)](https://www.itu.int/en/council/Documents/basic-texts-2023/RES-002-E.pdf), the Plenipotentiary Conference of the ITU resolved to hold the next WTPF in 2026.

1.2 The purpose of WTPF is to provide a venue for exchanging views and information and thereby creating a shared vision among policy-makers worldwide on challenges and opportunities arising from the new and emerging telecommunication/ICT services and technologies, and to consider any other policy issue in telecommunications/ ICTs which would benefit from a global exchange of views, in addition to the adoption of opinions reflecting common viewpoints as per [Resolution 2 (Rev. Bucharest, 2022)](https://www.itu.int/en/council/Documents/basic-texts-2023/RES-002-E.pdf).

1.3 By its [Decision 641 (Rev. Council 2024)](https://www.itu.int/md/S24-CL-C-0136/en), the ITU Council decided that the theme for WTPF-26 is as follows:

 “***Accelerating an inclusive, sustainable, resilient, and innovative digital future***: In this regard, the WTPF-26 will discuss opportunities, challenges and policies to address the following:

– bridging digital divides, particularly on gender and age as well as skills and connectivity

– green digital transformation: climate change and environmental sustainability

– resilience of telecommunication/ICTs

– space connectivity

– strengthening ICT-centric innovation ecosystems and entrepreneurship”

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| **Addition Proposed:****The Bahamas proposes to add framework context to section 1.3:**The importance of the WTPF-26 and the themes should be anchored within the broader framework of the 2030 Sustainable Development Goals (SDG) Agenda, the WSIS+20 review process, and the Global Digital Compact (GDC). For example, the GDC recognizes the significance of the universal and meaningful connectivity (UMC) concept and contains commitments related to all the WTPF-26 sub-themes: resilient digital infrastructure, promoting sustainability across the lifecycle of digital technologies, addressing specific digital divides (age, skills, gender, connectivity), use of satellite technology to address connectivity gaps and fostering innovation and entrepreneurship. |

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| **Modification proposed:****The Bahamas proposes to modify the order of thematic sections in 1.3 as follows:*** bridging digital divides, particularly on gender and age, as well as skills and connectivity
* resilience of telecommunication/ICTs
* space connectivity
* strengthening ICT-centric innovation ecosystems and entrepreneurship
* green digital transformation: climate change and environmental sustainability
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1.4 WTPF-26 shall not produce prescriptive regulatory outcomes; however, it shall prepare reports and adopt non-binding opinions by consensus for consideration by Member States, Sector Members, and relevant ITU meetings as per [Resolution 2 (Rev. Bucharest, 2022)](https://www.itu.int/en/council/Documents/basic-texts-2023/RES-002-E.pdf).

1.5 More information relating to the preparatory process of WTPF-26 is posted on <https://www.itu.int/en/council/Pages/ieg-wtpf-26.aspx>.

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| **Addition proposed to the general structure of the report:** **The Bahamas proposes adding the following in the report in general:**Future versions of the Secretary General’s Report should highlight the relationship between WTPF policy recommendations and specific SDGs and/or targets and GDC commitments[[1]](#footnote-1). In this regard, and if practical, the IEG should consider [Zambia’s](https://www.itu.int/md/meetingdoc.asp?lang=en&parent=S24-WTPF26IEG1-C-0003) recommendation that future draft reports include an analysis of the potential impact of implementing WTPF-26 policy recommendations.  |

# 2 Preparatory process for the ITU Secretary-General’s Report

2.1 Discussions at WTPF-26 shall be based solely on a single report by the ITU Secretary-General, and contributions from participants based on that report, prepared in accordance with a procedure adopted by the Council and based on the proposals of Member States and Sector Members, and on the views of Associates, Academia and stakeholders, and WTPF shall not consider drafts of any new opinions that were not presented during the preparatory period foreseen for drawing up the Secretary-General’s report prior to the forum as set out in [Resolution 2 (Rev. Bucharest, 2022)](https://www.itu.int/en/council/Documents/basic-texts-2023/RES-002-E.pdf).

2.2 In accordance with [Decision 641 (Council 2024)](https://www.itu.int/md/S24-CL-C-0136/en), the ITU Secretary-General shall convene a balanced, informal group of experts (IEG), each of whom is active in preparing for WTPF-26 in his/her own country, to assist in this process. In this regard, a circular letter ([CL-24/44](https://www.itu.int/md/S24-SG-CIR-0044/en)) has been sent on 14 June 2024 to Member States, the State of Palestine, Sector Members, Associates, Academia, and Organizations which have the right to attend ITU conferences and meetings as observers, calling for nomination of experts to constitute the IEG.

2.3 The preparatory process will be guided by the timetable set out as in Annex 2 of Decision 641 and in Table 1 below (revised based on agreement of the first IEG meeting).

Table 1: Timetable for the elaboration of the ITU Secretary-General’s Report

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| **5 August 2024** | A First Draft outline of the Report by the Secretary-General shall be posted online for comments |
| **26 August 2024** | Deadline for receipt of comments on the First Draft, and for contribution on outlines for possible draft opinionsDeadline for nominations for a balanced group of experts to advise the Secretary-General on further elaboration of the report and of draft opinions associated with it |
| **1st IEG Meeting (7-8 October 2024 during the CWG cluster)** | First meeting of the group of experts to discuss the First Draft of the report by the Secretary-General and the comments received |
| **18 November 2024** | The Second Draft of the report by the Secretary-General will be posted online, incorporating discussions from the 1st IEG meeting and including outlines of draft OpinionsThis draft will also be made available online for open public consultations |
| **13 January 202~~4~~5** | Deadline for receipt of comments on the Second Draft and for contribution on possible draft OpinionsDeadline for inputs from the open public consultations |
| **2nd IEG Meeting (13 – 14 February 2025 during the CWG cluster)** | Second meeting of the group of experts to discuss the Second Draft of the report by the Secretary-General as well as the possible draft Opinions and the comments received, including from the open public consultation |
| **31 March 2025** | The Third Draft of the report by the Secretary-General will be posted online, incorporating discussions from the 2nd IEG meeting, and including the text of the possible draft Opinions as an AnnexThis draft will also be made available online for open public consultations. |
| **16 June 2025** | Deadline for receipt of comments on the Third Draft, including the possible draft OpinionsDeadline for receipt of comments from the open public consultation |
| **3rd IEG Meeting (September 2025 during the CWG cluster)** | Third meeting of the group of experts to discuss the Third Draft of the report by the Secretary-General as well as the draft Opinions and the comments received, including from the open public consultation |
| **3 November 2025** | The Fourth Draft of the report by the Secretary-General will be posted online, incorporating discussions from the 3rd IEG meeting and including the draft Opinions as an Annex |
| **19 December 2025** | Deadline for receipt of comments on the Fourth Draft, including the text of the draft Opinions |
| **4th IEG Meeting (February 2026 during the CWG cluster)** | Fourth meeting of the group of experts to finalize the Draft Report by the Secretary-General, including the final text of the draft Opinions to be submitted to the seventh WTPF |
| **13 April 2026** | The final report of the Secretary-General to WTPF will be posted online, including the draft Opinions |
| **First half of 2026** | Seventh World Telecommunication/Information and Communication Technology Policy Forum |

# 3 Theme for WTPF-26

3.1 By Decision 641 (Council 2024), the 2024 session of Council decided that the theme for WTPF-26 is as set out in paragraph 1.3.

3.2 With the aim to accelerate an inclusive, sustainable, resilient and innovative digital future, the theme presents five key topics for consideration and discussion at WTPF-26. As technological breakthroughs reshape the global digital economy, it is essential to address a wide range of interconnected issues while designing public policy interventions that can maximize opportunities and address the challenges related to the adoption and use of digital technologies. Looking towards 2026 and beyond, and recognizing the limited time left for the global community to make progress on the 17 UN Sustainable Development Goals (SDGs), it is imperative for policymakers stakeholders to adopt a holistic and complementary approach for developing the integrated policy frameworks necessary to address the topics presented in the theme.

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| **Modification proposed to paragraph 3.2:** **Germany and UK propose modification to paragraph 3.2:**3.2. With the aim to accelerate an inclusive, sustainable, resilient and innovative digital future… Looking towards 2026 and beyond, and recognizing the limited time left for the global community to make progress on the 17 UN Sustainable Development Goals (SDGs), it is imperative for policymakers and other stakeholders to adopt a holistic and complementary approach for developing the integrated policy frameworks necessary to address the topics presented in the theme.  |

3.3 As a platform that brings together policymakers and stakeholders for a global exchange of views and information on technology policy issues and adoption of opinions reflecting common viewpoints, the WTPF is uniquely placed to facilitate an exchange of best practices and enhance international collaboration for developing interconnected solutions, harmonized approaches and forward-looking policy frameworks.

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| **Modification proposed to paragraph 3.3:** **Germany and UK propose to modify paragraph 3.3:**3.3 As a platform that brings together policymakers and other stakeholders for a global exchange of views and information on technology policy issues and adoption of opinions reflecting common viewpoints, the WTPF is uniquely placed to facilitate an exchange of best practices and enhance international collaboration for developing interconnected solutions, harmonized approaches and forward-looking policy frameworks. |

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| **Removal proposed to paragraph 3.3:** **China proposes to remove paragraph 3.3 in its entirety.** Note on removal: Repetitive to para 1.2, since it appears to elaborate the aim and other aspects of the forum, and tend to re-define the forum, while less connected with section 2 on “theme”.~~As a platform that brings together policymakers and stakeholders for a global exchange of views and information on technology policy issues and adoption of opinions reflecting common viewpoints, the WTPF is uniquely placed to facilitate an exchange of best practices and enhance international collaboration for developing interconnected solutions, harmonized approaches and forward-looking policy frameworks.~~ |

3.4 A robust enabling environment through effective policymaking is key for facilitating efforts, particularly in developing countries, to ensure universally accessible, affordable, high-quality, interoperable, and secure infrastructure and services, for enhanced international coordination and the international standardization of telecommunications, and to leverage existing and emerging technologies, connectivity solutions, and business models to close the digital divide, ensuring access in all countries and regions.

3.5 This report was developed through an open and inclusive preparatory process in accordance with the schedule set out in Decision 641 (Council, 2024) and will serve as the basis for discussions at the WTPF-26, considering the inputs and contributions from experts and stakeholders.

3.6 The report presents the policy issues and key questions for consideration for each of the topics of the theme, with an aim to help policymakers explore ways to digital technologies for sustainable development, build an inclusive society and economy, work to close the digital divide for everyone, including women and girls, youth, indigenous peoples, older persons, persons with disabilities, and persons with specific needs, and promote and enable digital transformation across all spheres of life and activity – particularly to address the dual climate and environmental crisis, foster the continued advancement of science, promote the sustainable exploration of Earth and space, and encourage resource use for the benefit of all.

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| **Modification proposed to paragraph 3.6:** **Germany and UK propose to modify the following sentence in paragraph 3.6:**3.6 The report presents the policy issues and key questions for consideration for each of the topics of the theme, with an aim to help policymakers explore ways to ~~digital technologies~~ telecommunications/ICTs for sustainable development, build an inclusive society and economy… |

3.7 Each of the topics is explored in the following sections and the Draft Opinions as agreed by the Informal Expert Group during the preparatory process are presented in the Annex:

– Section 4: Bridging digital divides, particularly on gender and age as well as skills and connectivity

– Section 5: Green digital transformation: climate change and environmental sustainability

– Section 6: Resilience of telecommunication/ICTs

– Section 7: Space connectivity

– Section 8: Strengthening ICT-centric innovation ecosystems and entrepreneurship

– Annex: Draft Opinions

# 4 Bridging digital divides, particularly on gender and age as well as skills and connectivity

4.1 Previous iterations of the WTPF recognized that bridging digital divides requires sustained commitment and multistakeholder collaboration. Today's digital divides are more complex and multifaceted than ever, encompassing not just connectivity gaps, but fundamental disparities in digital skills, age-related barriers, and gender-based exclusion. The concept of universal and meaningful connectivity (UMC), as developed through ITU's work with the G20 Digital Economy Working Group, provides a comprehensive framework for addressing these interrelated challenges.

State of the Digital Divide at a Glance:

* Approximately 67% of the world's population (5.4 billion people) is now online, while 2.6 billion people (33% of the global population) remain offline.
* In high-income countries, 93% of the population uses the Internet, while in low-income countries, only 27% of people are online.
* Women are 16% less likely to use the internet than men in developing countries, highlighting persistent gender-based disparities in digital access and use.

*Source: International Telecommunications Union, “Facts and Figures 2023 - Report Index”*

4.2 It is important to prioritize a holistic approach to digital inclusion, ensuring that older generations can confidently navigate digital spaces, that youth as digital natives can actively shape the digital future, that women and girls have equal opportunities for digital engagement, that all populations possess the necessary digital skills for effective participation, and that connectivity is truly meaningful - incorporating quality of service, affordability, and relevant content.

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| **Modification proposed to paragraph 4.2:**  **Germany and UK propose to modify paragraph 4.2:**4.2 We must address the multiple dimensions of digital inclusion. It is important, therefore, to prioritize a holistic approach to digital inclusion, ensuring that older generations can confidently navigate digital spaces, that youth as digital natives can actively shape the digital future, and that women and girls have equal opportunities for digital engagement. It is vital that all populations possess the necessary digital skills for effective participation, and that connectivity is truly meaningful - incorporating quality of service, affordability, ~~and relevant content.~~ |

4.3 This multidimensional understanding of digital divides, anchored in the UMC framework, emphasizes that true digital inclusion requires addressing all these elements holistically - from basic connectivity and affordability to fostering digital literacy and basic digital skills development among targeted populations, gender-responsive approaches, and meaningful engagement opportunities.

Beyond Infrastructure:

Some 2.6 billion people remain offline, around 33% or one-third of the global population. By the end of 2022, an estimated “usage gap” of 38% of the global population lived within mobile broadband coverage but were not using it, while 5% of people are still not covered by mobile broadband (coverage gap).

*Source: International Telecommunications Union, “Facts and Figures 2023 - Report Index”*

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| **Modification proposed to paragraph 4.3:** **Germany and UK propose to modify paragraph 4.3:**4.3 This multidimensional understanding of digital divides, anchored in the UMC framework, emphasizes that true digital inclusion requires addressing all these elements holistically - from basic connectivity and affordability to fostering digital literacy and basic digital skills development among targeted populations, gender-responsive approaches, and co-learning ~~meaningful engagement opportunities.~~ |

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| **Addition proposed after paragraph 4.3:****The Bahamas proposes adding the following text after paragraph 4.3:** Note on the addition:* To highlight unique challenges faced by specific vulnerable groups
* To address maritime connectivity gaps not covered elsewhere
* To emphasize practical implementation challenges in SIDS
* To provide concrete examples of barriers affecting UMC achievement

4.3.1 Most efforts to achieve universal and meaningful connectivity have largely focused on land-based use cases, leaving gaps in providing affordable and accessible ICTs to certain vulnerable groups such as small-scale fishers. These fishers face digital and socioeconomic exclusion but are also vulnerable at sea, with no international regulations mandating communication solutions for their safety—only voluntary recommendations exist. It is up to individual countries to incorporate these recommendations into national policies.4.3.2 In addition, developing countries such as SIDS often face challenges with implementing digital solutions to protect these vulnerable groups due to intellectual property restrictions and the licensing of digital solutions. There are several unique challenges and barriers impacting progress with achieving UMC in some SIDS like those in the Caribbean, including:* Legacy digital systems impede the integration of modern technologies, requiring significant time and financial resources to upgrade
* Geographic isolation/remoteness and small economies of scale lead to expensive infrastructure development
* High susceptibility to natural disasters can cause devastation to physical infrastructure and divert resources
* Unreliable power supplies and limited backhaul capacity in remote communities
* Limited capacity for public funding of critical ICT initiatives due to debt servicing priorities
* Small economy market dynamics and inconsistent regulatory frameworks limit private sector investment
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4.4 The digital skills gap represents a particularly pressing challenge, as technological advancement continues to outpace skills development in many communities. The lack of digital literacy and basic digital skills is one of the main reasons for why people are still not using the Internet. This is especially acute among citizens living in rural and remote communities, and marginalized groups as well as older populations, who may face multiple barriers to digital adoption. Similarly, persistent gender divides in both access and skills development continue to limit women and girls' participation in the digital economy, particularly in developing countries.

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| **Modification proposed to paragraph 4.4:** **Germany and UK propose modification to paragraph 4.4:**4.4The digital skills gap represents a particularly pressing challenge, as technological advancement continues to outpace skills development in many communities. The lack of digital literacy and basic digital skills is one of the main reasons for why people are still not using the Internet. This is especially acute among ~~citizens~~ people living in rural and remote communities, and marginalized groups as well as older populations, who may face multiple barriers to digital adoption. Similarly, persistent gender divides in both access and skills development continue to limit women and girls' participation in the digital ~~economy~~ world, particularly in developing countries. |

Digital Skills

By 2030, 90% of all jobs will require some level of digital skills. These include both basic digital skills as well as advanced skills related to AI, data analysis, cloud computing and cybersecurity; at the same time, 75% of organizations struggle to find the necessary skills to adopt AI technologies and there is an estimated lack of 7 million cybersecurity professionals in the global labour market. The skills demand goes beyond technical skills and includes interpersonal and soft skills.

*Source: International Telecommunication Union, “Skills development for the digital economy”, November 2024*

Case Study: Digital Skills Toolkit

The ITU [Digital Skills Toolkit 2024](https://academy.itu.int/itu-d/projects-activities/research-publications/digital-skills-toolkit) offers a comprehensive, step-by-step guide to support the ITU membership to create effective national digital skills strategies and policies. This practical resource offers actionable insights and examples, making it a valuable tool for countries at all stages of digital development. At its core, it provides a concrete roadmap for creating a digital skills strategy, including all elements from the planning to the design and implementation stage.

4.5 Urgent action is required by all relevant stakeholders – governments, private sector, educational and training institutes, international organizations and civil society – to address the global digital skills gap.

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| **Addition proposed in paragraph 4.5:** **China proposes adding the following text in paragraph 4.5:** Note on the addition: * Reflect the recent opinion of IGF 2024
* To complement the aspect of “age” under section 4
* To confirm the role of ITU in this process
* To modify the “skill gap” language to better match the section 4 “digital divide” language

4.5 The rapid development of emerging technologies such as cloud computing, artificial intelligence, and blockchain brings new challenges. New divides such as computing divide, data divide, and algorithm divide, are becoming increasingly prominent, especially in developing countries, stressing the urgent need to enhance international cooperation on capacity-building in the field of emerging technologies, including artificial intelligence, such as knowledge sharing activities, capacity-building programs, and personnel training.4.6 Age is a key factor influencing the digital divide. In addition to enhancing the digital literacy of older persons, integrating the preferences and needs of older persons into digital transformation has become an urgent requirement, including retaining traditional service methods necessary to older persons, promoting the adaptation of Internet applications and mobile terminals, and APP applications commonly used by older persons, proactively providing barrier-free digital technology, services, and products for older persons.4.7 Among the global effort of implementing the outcomes of the Summit of the Future, ITU plays a critical role in bridging digital divides. Urgent action is required by all relevant stakeholders – governments, private sector, educational and training institutes, international organizations and civil society – to address the global digital divides. |

4.6 Against the backdrop of these considerations, some policy questions that could be studied include:

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| **Modification proposed to paragraph 4.6:** **Germany and UK propose the following modification to paragraph 4.6:**Against the backdrop of these considerations, some telecommunications/ICTs policy questions that could be studied include: |

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| **Modification proposed to question 4.6.1:****India proposes the following modification to question 4.6.1****4.6.1** How can strategies and policies create a favourable policy environment to overcome challenges to expanding internet connectivity and access to digital technologies and platforms and prioritize public and private investments in development of accessible and affordable telecommunications, Infrastructure and platforms in local language, to bridge the digital divide based on age, gender, socio-economic levels and urban - rural disparity? |

4.6.1 How can strategies and policies create a favourable policy environment and prioritize public and private investments in development of accessible and affordable telecommunications, Infrastructure and platforms in local language, to bridge the digital divide based on age, gender, socio-economic levels and urban - rural disparity?

4.6.2 How can policymakers develop and implement effective strategies and policies to promote digital literacy, training, and skills development addressing digital divides such as those based on gender, age, persons with disabilities, socio-economic levels and urban vs. rural disparities?

4.6.3 How International level organizations and community continue their efforts and take new initiatives on infrastructure development to connect the unconnected, make digital access more affordable, take global initiatives on digital literacy and skills and other initiatives with aim to bridge the digital divide based on gender, age, socio economic levels, as well as urban -- rural disparities?

4.6.4 How can schools and other educational institutions, through their curricula and initiatives, promote innovation and entrepreneurship?

4.6.5 What are the barriers to entrepreneurship and how can policy makers tackle them?

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| **Modifications proposed to questions 4.6.4 and 4.6.5:** **India proposes to replace questions 4.6.4 and 4.6.5 with the following:**~~4.6.4 How can schools and other educational institutions, through their curricula and initiatives, promote innovation and entrepreneurship?~~~~4.6.5 What are the barriers to entrepreneurship and how can policy makers tackle them?~~4.6.4 Replacement: How can schools and other educational institutions, through their curricula and initiatives, promote innovation and entrepreneurship while effectively addressing the digital divide and ensuring that students from diverse socio-economic backgrounds, genders, age groups, and regions have equitable access to digital tools and resources?4.6.5 Replacement How can policymakers identify and address the barriers to entrepreneurship caused by the digital divide, and what strategies can be implemented to ensure equitable access to digital tools and resources for aspiring entrepreneurs across different socio-economic levels, genders, age groups, and regions?**China proposes to delete question 4.6.5**~~4.6.5 What are the barriers to entrepreneurship and how can policy makers tackle them?~~ |

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| **Modification/Replacement proposed to ALL questions 4.6.1 – 4.6.5** **UK and Germany propose to replace ALL questions (4.6.1 – 4.6.5) with the following:** 4.6.1 What are the age and gender-related barriers to meaningful access to telecommunications/ICT, parity in digital skills attainment and connectivity?4.6.2 How can strategies and policies create a favourable policy environment and prioritise public and private investments in the development of accessible and affordable telecommunications/ICT, infrastructure and platforms?4.6.3 How can strategies and policies created a favourable policy environment and prioritise public and private investments in inclusive training for digital skills.4.6.4 How can policymakers develop and implement effective strategies and policies to promote digital literacy, training, and skills development addressing digital divides such as those based on gender and age?4.6.5 How International organizations and communities continue their efforts and take new initiatives to connect the unconnected and tackle the digital divide through initiatives promoting digital literacy and skills, and initiatives addressing age and gender specific barriers.  |

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| **Additions proposed:** **India proposes the following new questions in this section:** 4.6.6 How can national and international strategies and policies be developed to effectively monitor and adopt innovative solutions, technologies, and platforms focusing on their deployment, scaling, and replication both nationally and globally to bridge the digital divide across age, gender, socio-economic levels, and urban-rural disparities?4.6.7 How can policymakers identify in-demand digital skills that offer employment opportunities, and ensure that individuals across different genders, age groups, socio-economic levels, and regions have access to these skills? Additionally, how can policymakers encourage the private sector and civil society to play a significant role in providing digital skills training and education, and promote investment in these areas?4.6.8 How should policymakers evaluate the frameworks currently used to monitor and assess the effectiveness of initiatives and programs aimed at bridging the digital divide, and how can these frameworks be improved in terms of indicators or metrics to measure success?**China proposes the following new questions in this section:**4.6.6 How can policy makers develop and implement effective strategies and policies to promote digital technology to meet the needs of older persons and encourage society to provide age-friendly products and services to them?4.6.7 What are the challenges faced by developing countries in building their capacities on aspects of emerging technology, including artificial intelligence? What measures can relevant stakeholders take to help developing countries bridge these divides? |

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| **Additional context proposed to section 4:****The Bahamas proposes adding the following key points to the Digital Divides section (paragraph 4.1-4.6):*** SIDS leverage UMC to enable sustainable tourism, resource management, disaster resilience, and economic modernization through emerging technologies like 5G, AR/VR, AI and IoT
* Infrastructure challenges include legacy systems, geographic isolation, natural disaster susceptibility, unreliable power, and limited backhaul capacity
* Economic barriers involve high debt servicing limiting public funding, small market dynamics deterring private investment, below-average bandwidth, and high operational costs making services unaffordable
* Maritime communities like small-scale fishers face unique connectivity challenges with no mandated communication solutions, only voluntary recommendations
* Skills development is hindered by limited assessment of digital capabilities, particularly for advanced skills, and "brain-drain" of skilled individuals to larger economies
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# 5 Green Digital Transformation: Climate Change and Environmental Sustainability

5.1 While technology can play a critical role in monitoring, mitigating and adapting to environmental sustainability and climate change, it brings with it significant implications. New and emerging technologies, particularly artificial intelligence (AI), are proving transformative in advancing environmental protection and climate action. AI applications are being deployed to optimize energy consumption in networks, predict extreme weather events, monitor biodiversity, and enhance climate modelling. These technologies are also enabling smart grid management, reducing e-waste through predictive maintenance, and supporting precision agriculture to decrease resource consumption.

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| **Modifications proposed to Paragraph 5.1****UK & Germany proposed modifications to paragraph 5.1:** 5.1 While technology can play a critical role in monitoring, mitigating and adapting to environmental sustainability and climate change, it brings digital transformation ~~it~~ significant implications. New and emerging technologies, particularly artificial intelligence (AI), are proving transformative in advancing environmental protection and climate action. AI applications are being deployed to optimize energy [Replacement from China] efficiency ~~consumption~~ in networks, predict extreme weather events, monitor biodiversity, and enhance climate modelling.**China proposed modifications to paragraph 5.1:***Note on the modifications from China: An editorial change about categorization by borrowing the language from the relevant WTSA Resolution, revised just in October 2024.*5.1 While technology can play a critical role in monitoring, mitigating and adapting to environmental sustainability and climate change, it brings with it significant implications. New and emerging technologies, particularly artificial intelligence (AI), are proving transformative in advancing environmental protection and climate action. AI applications are being deployed to optimize energy efficiency ~~consumption~~ in networks, predict extreme weather events, monitor biodiversity, and enhance climate modelling. These technologies are also enabling smart grid management, reducing e-waste through predictive maintenance, and supporting precision agriculture to decrease resource consumption. These technologies are also enabling other sectors (e.g. energy, manufacturing industry, transportation and construction) to reduce the climate impact[[2]](#footnote-2).  |

5.2 The rapid growth of digital technologies, including AI, whose computational power doubles every 100 days, also underscores the urgent need for sustainable practices in the digital sector. Digital companies already account for nearly 2% of global electricity use and up to 4% of greenhouse gas emissions, which must be reduced by 45% by 2030 to align with the Paris Agreement.[[3]](#footnote-3)

Meanwhile, the world's transition to a circular economy remains slow, with only 7% of economic activities estimated as circular and 82 billion kilos of e-waste projected by 2030. Furthermore, almost half of all countries lack multi-hazard early warning systems, and data gaps in Least Developed Countries and Small Island Developing States exacerbate their vulnerability to climate risks. Green digital transformation offers an opportunity to address these challenges and build a more sustainable, equitable future.

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| **Addition proposed after paragraph 5.2:** **UK & Germany propose adding the following after paragraph 5.2:** Also, some other environmental impacts associated with the use of ICTs are worth considering, in particular the use of non-renewable natural resource (fossil energy sources, minerals and metals) water consumption, resources depletion and impacts on biodiversity. |

International Standards at ITU:

ITU has been developing international standards to advance environmental efficiency, climate action, energy efficiency, and the circular economy within the ICT sector and beyond. By establishing methodologies to assess the environmental impact of ICT products, ITU provides frameworks that guide organizations in measuring and reducing their carbon footprints. ITU standards promote sustainable design principles that support resource efficiency and facilitate the shift toward a circular economy. For instance, standards for energy efficiency in telecommunications equipment and green data centres enable significant reductions in energy consumption, supporting organizations in lowering their operational costs while reducing emissions. In terms of climate action, these standards help governments and companies alike adopt practices that minimize emissions and foster resilience to climate impacts. Through standardized reporting mechanisms, ITU enables consistent and transparent tracking of environmental performance, thereby enhancing accountability and driving global efforts toward sustainability.

5.3 A true green digital transformation requires three key approaches: prioritizing material efficiency, promoting the reuse of equipment, and implementing circular economy principles. These strategies minimize the environmental impact of digital infrastructure by reducing the demand for new resources. The circular economy approach emphasizes designing ICT products for durability, repairability, and recyclability, thereby extending product lifecycles and reducing waste. Furthermore, international collaboration is essential for developing sustainable e-waste management systems that ensure proper collection, refurbishment, recycling, and environmentally sound disposal of electronic devices. These combined strategies support a more sustainable and resilient global ICT sector while reducing both resource consumption and emissions.

Global Commitments:

Regulatory approaches globally have begun to address environmental impacts through various measures including mandatory emission reporting requirements, energy consumption monitoring, voluntary climate data disclosure programs, and market reforms to encourage renewable energy investments in the telecommunications sector.

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| **Modifications proposed to Paragraph 5.3** **China proposal to modify paragraph 5.3**A true green digital transformation requires a few ~~three~~ key approaches: energy efficiency promotion, digital carbon management, prioritizing material efficiency, promoting the reuse of equipment, and implementing circular economy principles.**UK and Germany proposal to modify paragraph 5.3:**A true green digital transformation requires three key approaches: prioritizing material efficiency, promoting the reuse of equipment, and implementing repairability ~~circular economy principles~~. |

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| **Modification proposed to text box:** **China proposal to modify the global commitments box:** Note: Modifications to BOX “Bridging the gap”: to reflect the concrete contributions of ITU in this field.~~Regulatory~~ Governance approaches globally have begun to address environmental collectively impacts through ~~various~~ regulations on ICTs as well as measures on enabling vertical industries ~~measures~~ including mandatory emission reporting requirements, energy consumption monitoring, voluntary climate data disclosure programs, and market reforms to encourage renewable energy investments in the telecommunications sector, developing methodology on the assessment of ICT enabling effect to other sectors, and establishing AI-enabled smart control platforms for green transitions, etc. |

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| **Addition proposed after paragraph 5.3:****Bahamas proposes adding the following text after paragraph 5.3:** Note on the addition:* To highlight unique challenges and opportunities for tourism-dependent economies
* To address implementation barriers specific to developing countries
* To provide additional practical strategies for green digital transformation
* To emphasize the connection between economic constraints and environmental initiatives

5.3.1 Economies in transition face specific challenges in meeting Paris Agreement targets and facilitating green digital transformation:* Many developing countries are limited in their ability to attract necessary investment levels to implement Paris Agreement targets
* Recent research by UNCTAD has revealed that 3.3 billion persons live in countries that spend more on servicing public debt than on public health or educational services
* For emerging and developing countries, interest payments outpace climate-related investments, thus retarding climate change adaptation and mitigation efforts
* This leaves limited capacity for public funding of critical ICT initiatives

5.3.2 For developing countries whose economies are primarily dependent on tourism, the impact of full implementation and embracing of the circular economy cannot be overemphasized. "Circularity represents an opportunity for tourism businesses to increase innovativeness for sustainability, and consequently their competitiveness, thus contributing to the long-term health and resilience of tourism activities and of the sector."5.3.3 In addition to the three green digital transformation strategies outlined in this Draft Report, consideration should also be given to:* Promoting infrastructure sharing, where technically and economically feasible, to reduce redundant infrastructure, minimize resource consumption, and lower energy usage
* Responsible communications tower site selection and deployment to help minimize disruption or destruction of sensitive ecosystems and wildlife habitats
* Ongoing research on the potential impacts of electromagnetic fields on wildlife
* Establishing the necessary policies, regulations, facilities, and mechanisms to encourage the recycling of ICT equipment and the environmentally sensitive disposal of e-waste
* Creating and enhancing digital marketplaces and e-commerce platforms to support the exchange of second-hand goods and refurbished products

This approach would align green digital transformation with both environmental and economic sustainability goals while addressing the specific challenges faced by tourism-dependent economies. |

5.4 Some key aspects to consider in this respect are international partnerships that focus on promoting sustainable development and climate action through technological innovation, support mechanisms for developing countries through targeted assistance and knowledge sharing, development of industry best practices to examine how telecommunications/ICTs can reduce negative environmental impacts across sectors.

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| **General comments related to paragraphs 5.1-5.4:** **The Bahamas proposes the following for considering in the modification of paragraphs 5.1-5.4:** * Many developing countries struggle to meet Paris Agreement targets due to inadequate systems and limited investment capacity
* Digital transformation offers modernization opportunities, particularly in tourism-dependent economies where circular economy principles can enhance sustainability and competitiveness
* Current industry practices create barriers to sustainable ICT product lifecycle management, with e-waste issues particularly affecting developing countries
* The 2024 IGF calls for extended producer responsibility and prioritization of repair/recyclability in product development
* Infrastructure sharing, responsible tower deployment, and research on electromagnetic field impacts on wildlife should be considered in the draft report alongside existing green transformation strategies
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Bridging the gap:

The lack of comprehensive, country-based data on emissions remains a significant gap in the ICT sector. Effective management requires standardized data on emissions and energy usage, transparent data disclosure and analysis, inclusive technology transitions, and revised regulations with intensified cooperation between ICT and energy sectors.

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| **Modification proposed :** **China proposal to modify the “Bridging the Gap” box:** Note: Modifications to BOX “Bridging the gap”: to reflect the concrete contributions of ITU in this field.Bridging the gap:The lack of comprehensive, ~~country-based~~ data on emissions remains a significant gap in the ICT sector. ~~Effective management requires standardized data on emissions and energy usage, transparent data disclosure and analysis, inclusive technology transitions, and revised regulations with intensified cooperation between ICT and energy sectors.~~ Approaches, including raising awareness, developing knowledge, contributions and investments, best practices sharing and capacity building are critical to achieving green digital transformation towards climate change mitigation and environmental sustainability. Especially, Recommendations and informative deliverables from ITU provide industries with vital tools for achieving the SDGs. |

5.5 Given these global developments in regulatory approaches, industry commitments, and collaborative initiatives, several critical questions emerge regarding how to accelerate and expand the technology sector's contribution to environmental sustainability:

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| **Modification proposed to paragraph 5.5:** **UK and Germany propose to modify paragraph 5.5:** Given these global developments in regulatory approaches, industry commitments, and collaborative initiatives, several critical questions emerge regarding how to accelerate and expand the telecommunications/ICTs ~~technology~~ sector's contribution to environmental sustainability |

5.5.1 What actions can ITU take to build and contribute to international partnerships that promote use of green digital transformation for sustainable development and climate action?

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| **Modification proposed to question 5.5.1:** **UK and Germany propose to modify question 5.5.1:** **5.5.1** What actions can ITU take to build and contribute to international partnerships that promote use of green digital transformation for sustainable development and climate action? |

5.5.2 How can telecommunications/ICTs help developing countries achieve green digital transformation?

5.5.3 What are the good practices of telecommunications/ICTs in reducing the negative impact of industries on the environment?

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| **Modification proposed to question 5.5.3:** **India proposes to modify question 5.5.3:** What are the good practices of telecommunications/ICTs in reducing the negative impact of industries on the environment including the development of common standards? |

5.5.4 How can international standards assist governments and the ICT sector in reducing the environmental impact of telecommunications/ICTs, while also enabling them to leverage ICT solutions to drive positive environmental impacts within the ICT sector and beyond?

5.5.5 How can policymakers help to reduce the environmental impact of telecommunications/ICTs, including energy consumption, and support sustainability?

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| **Modification proposed to question 5.5.5:** **China proposes to modify question 5.5.5:** 5.5.5 How can policymakers help to reduce the environmental impact of telecommunications/ICTs, and to facilitate ICT’s contribution to sustainability and climate action ~~including energy consumption, and support sustainability?~~  |

5.5.6 Leveraging existing efforts like Green Digital Action, how can governments, industry, UN agencies, academia and civil society fast-track industry-wide commitments to addressing climate challenges and put digital solutions at the forefront of climate action?

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| **Modifications proposed :** **UK and Germany propose to modify question 5.5.6:** 5.5.6 Leveraging existing efforts like Green Digital Action, how can governments, industry, ~~UN agencies~~ civil society, the technical communities, academia and UN agencies ~~fast track~~ encourage industry-wide commitments to addressing climate challenges and ~~put~~ embed digital solutions ~~at the forefront of~~ within climate action?**India proposed to add the following to question 5.5.6**Leveraging existing efforts like Green Digital Action, how can governments, industry, UN agencies, academia and civil society fast-track industry-wide commitments to addressing climate challenges and put digital solutions at the forefront of climate action, ensuring that the benefits of green digital transformation are shared equitably among all stakeholders, including vulnerable and marginalized communities? |

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| **Addition proposed:** **India proposes to add the following questions after question 5.5.6**5.5.7 How can policymakers identify the most promising innovations and technologies that support green digital transformation, including clean tech, sustainable materials, and circular economy solutions? Additionally, how can these innovations be effectively promoted for their development and deployment?5.5.8 How can policy makers monitor and evaluate the effectiveness of green digital transformation strategies and policies, including the development of metrics and indicators for measuring progress, including how to address the challenges in doing so?5.5.9 How can policy makers identify most significant data gaps and research needs in the area of green digital transformation, and how can it be addressed through international cooperation and knowledge sharing? |

# 6 Building Resilient Telecommunication/ICT Infrastructure and Services

6.1 The resilience of global telecommunications networks depends on multiple factors. Resilient telecommunication/ICT Infrastructure and Services must be understood through various technologies: terrestrial networks, submarine cables through which over 99% of global internet traffic passes, satellite systems providing critical redundancy and reach, and the cybersecurity frameworks that protect this infrastructure.[[4]](#footnote-4)

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| **Modification proposed to paragraph 6.1****UK and Germany proposal to modify paragraph 6.1:** Resilient telecommunications/ICTs are capable of predicting, responding to, and withstanding multiple forms of disruption. The resilience of global telecommunications networks depends on multiple factors such as infrastructure, the availability of relevant skills within the economy, public awareness, early warning systems, cybersecurity measures and mitigations against the impact of climate change. ~~terrestrial networks, submarine cables through which over 99% of global internet traffic passes, satellite systems providing critical redundancy and reach, and the cybersecurity frameworks that protect this infrastructure.[[5]](#footnote-5)~~ |

6.2 New and emerging technologies are transforming the approach towards digital resilience. Advanced capabilities such as AI and machine learning are being utilized for real-time risk detection and predictive maintenance of critical infrastructure. Low Earth Orbit (LEO) satellite networks are expanding connectivity to remote regions. Edge computing and digital twins are enabling faster decision-making and improved system modelling to predict and mitigate vulnerabilities. However, these technologies, while offering new capabilities, also introduce new considerations for security management and technical expertise requirements.

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| **Modification proposed to paragraph 6.2****UK and Germany proposal to modify paragraph 6.2:** New and emerging technologies are transforming the approach towards telecommunications/ICTs ~~digital~~ resilience. Advanced capabilities such as AI and machine learning are being utilized for real-time risk detection and predictive maintenance of critical infrastructure. Low Earth Orbit (LEO) satellite networks are expanding connectivity ~~to~~ options for remote regions. Edge computing and digital twins are enabling faster decision-making and improved system modelling to predict and mitigate vulnerabilities. ~~However, these technologies~~, While offering new capabilities, these technologies also introduce new considerations for security management ~~and~~ technical expertise requirements, and the sustainability of new telecommunication/ICTs. |

Case Study: Submarine Cable Resilience

Recognizing the critical importance of submarine cables to global connectivity and the digital economy, ITU has established an [International Advisory Body for Submarine Cable Resilience](https://www.itu.int/en/digital-resilience/submarine-cables/Pages/default.aspx). This initiative responds to the increasing vulnerability of submarine infrastructure to service outages and aims to enhance the safety, redundancy, and protection of submarine cables through international multistakeholder collaboration. The Advisory Body brings together governments, regulatory authorities, and industry leaders to develop best practices, improve technical frameworks, and strengthen policy approaches for submarine cable protection.

6.3 Recognizing this, the following key considerations are offered for a holistic approach to this issue:

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| **Modification proposed to paragraph 6.3****UK and Germany proposal to modify paragraph 6.3:** Original text: Recognizing this, the following key considerations are offered for a holistic approach to this issue:New text: Recognizing this, a comprehensive approach to this issue should be adopted that recognises that the resilience of telecommunication/ICTs cuts across many kinds of issues, including climate-related ones, cyber incidents, and non-malicious technical breakdowns. It should also acknowledge that the resilience of telecommunications/ICTs is achieved through the development of wider non-technical initiatives, including public awareness raising and risk-management planning. A holistic approach also promotes the following key considerations: |

6.3.1 Infrastructure resilience across terrestrial, submarine and space-based networks requires coordinated technical frameworks. Emerging technologies and advancements in these areas could enhance capabilities of comprehensive protection and rapid recovery.

Case Study: Network Resilience Through Standards

To strengthen these global cooperation mechanisms, ITU has been developing international standards (recommendations) for enhancing network resiliency. They include protection switching, performance monitoring, fault management, network element management functions for various transport technologies such as optical transport network (OTN), Ethernet, MPLS-TP. Protection switching function pre-assigns some capacity between nodes so that the original traffic can be carried using this capacity in case of a failure on the original route.

6.3.2 Policy and regulatory approaches must address resilience holistically across all infrastructure layers, from physical protection to cybersecurity.

6.3.3 Capacity building and skills development are essential for operating, maintaining and protecting complex, multi-layered communication systems.

6.3.4 International cooperation mechanisms strengthen global telecommunications infrastructure resilience through information sharing and coordinated response.

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| **Modification proposed to paragraphs 6.3.1 – 6.****UK and Germany propose modifying the text in section 6.3.1 – 6.3.4:** 6.3.1 Infrastructure resilience requires coordinated technical frameworks across terrestrial, submarine and space-based networks ~~requires coordinated technical frameworks~~. Collaborative work must continue to analyse these advances and identify how emerging tech could enhance capabilities of comprehensive protection and rapid recovery. ~~Emerging technologies and advancements in these areas could enhance capabilities of comprehensive protection and rapid recovery.~~6.3.2 Policy and regulatory approaches must address resilience ~~holistically~~ across all infrastructure layers, ~~from physical protection~~ early-warning detection to cybersecurity.6.3.3 Capacity building and skills development are essential for operating, maintaining and protecting complex, multi-layered communication systems.6.3.4 International cooperation mechanisms strengthen global telecommunications infrastructure resilience through sharing of best practice. ~~through information sharing and coordinated response.~~ |

6.4 Given the urgency of these issues in the face of an ever-evolving landscape of complex and multifaceted challenges, the following questions are intended to guide policymakers and stakeholders toward meaningful and productive tools to help build resilient telecommunication and ICT infrastructure and services:

6.4.1 How can emerging technologies and innovations improve the resilience of telecommunications and ICT infrastructure and the interdependence with other critical sectors like energy, health, and transportation to mitigate cascading failures during disasters?

6.4.2 What policy and regulatory frameworks are needed to foster resilient telecommunications/ICT systems?

6.4.3 How can public awareness and preparedness contribute to telecommunications/ICT resilience?

6.4.4 What capacity building and skills development initiatives are needed to support telecommunications resilience?

6.4.5 How can international cooperation and collaboration strengthen telecommunications/ICT resilience?

6.4.6 How can networks, including NRENs (National Research and Education Networks), leverage existing infrastructure, technologies, and community assets to enhance the resilience of telecommunications and ICT services?

6.4.7 How can ICT infrastructure and services be strengthened to ensure reliable performance in times of crisis, including natural disasters, supporting timely response and recovery efforts?

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| **Addition proposed:** **India proposes to add the following question after 6.4.7**6.4.8 How can policymakers create framework for monitoring and evaluating the resilience of telecommunication/ICTs, including the development of metrics and indicators for measuring resilience? |

# 7 Space Connectivity

7.1 Space connectivity has become fundamental to achieving global digital inclusion. Satellite technologies have a transformative role in providing universal connectivity, particularly for unserved and underserved areas.

7.2 The space connectivity landscape is evolving rapidly through the deployment of Very-High-Throughput Satellites in Geostationary Orbit (GSO), advances in Low-Earth Orbit (NGSO) satellite constellations, and innovative business partnerships between satellite and terrestrial telecommunications providers.

Understanding the space arena:

The space economy demonstrates significant growth potential, with forecasts indicating it will reach USD 1.8 trillion by 2035, growing at an average of 9% per year. Notably, at least 40% of the SDGs rely on Earth observation, remote sensing, and global navigation satellite systems, underscoring the critical role of space technologies in sustainable development.

*Source: “Space: The $1.8 Trillion Opportunity for Global Economic Growth.” World Economic Forum, April 2024*

7.3 The integration of satellite and terrestrial networks is creating new possibilities for connectivity. These technological advances are particularly significant as they enable cost-effective and reliable communications in areas where terrestrial infrastructure has been technically challenging or economically unfeasible to deploy.

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| **Modification proposed to paragraph 7.3** **China proposal to modify paragraph 7.3:** The integration of satellite and terrestrial networks is creating new possibilities for connectivity. These technological advances are particularly significant as they enable cost-effective and reliable communications in areas where terrestrial infrastructure has been geophysically ~~technically challenging~~ or economically ~~unfeasible to deploy~~ challenging~~.~~ |

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| **Modification Proposed:** **China proposal to modify the “Understanding the space arena” box:** Note: Modifications to BOX “Understanding the space arena”: to quote the relevant conclusion from report “Space: The $1.8 Trillion Opportunity for Global Economic Growth”, especially the reference to communications.Understanding the space arena: The space economy demonstrates significant growth potential, with forecasts indicating it will reach USD 1.8 trillion by 2035, growing at an average of 9% per year. This growth will largely be built upon space-based and/or enabled technologies such as communications; positioning, navigation and timing; and earth observation. ~~Notably, at least 40% of the SDGs rely on Earth observation, remote sensing, and global navigation satellite systems, underscoring the critical role of space technologies in sustainable development.~~*Source: “Space: The $1.8 Trillion Opportunity for Global Economic Growth.” World Economic Forum, April 2024* |

7.4 Countries are increasingly adopting forward-looking regulatory frameworks that address several aspects including:

– streamlined authorization processes for both GSO and NGSO systems, mechanisms to encourage investment in space infrastructure,

– requirements for security and data protection provisions for industry partnerships and collaborations

– measures to protect existing networks while enabling new technologies.

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| **Modifications proposed to paragraph 7.4:** **China proposal to modify paragraph 7.4:** 7.4 Countries are increasingly adopting forward-looking regulatory frameworks that address several aspects including:– studies on ~~streamlined~~ authorization processes for both GSO and NGSO systems, mechanisms to encourage investment in space infrastructure, **UK and Germany proposed to modify paragraph 7.4:** 7.4 Countries are increasingly adopting forward-looking regulatory frameworks that address several aspects including:– streamlined authorization processes for both GSO and NGSO systems, mechanisms to encourage investment in space infrastructure,– requirements for security and data protection provisions for industry partnerships and collaborations – measures to ~~protect~~ protect and sustainably optimise existing terrestrial networks while enabling new connectivity-related telecommunications/ICTs ~~technologies.~~ |

7.5 Advancements must be balanced with considerations of space sustainability to ensure long-term accessibility of orbital resources.

Case Study: Space Sustainability Forum

The Forum convened top leaders and subject matter experts from the satellite and space industries, space and telecom agencies, governments and other space stakeholders that are committed to the responsible use of the space. The Forum provided a platform to discuss and dive deeply into the policies, best practices, guidelines and strategies to ensure space remains accessible and sustainable for the future space activities envisioned today and in the future.

7.6 As the space connectivity sector continues its rapid evolution, several important aspects emerge for consideration at the intersection of technological advancement, universal access, and sustainable space operations:

7.6.1 Emerging trends and developments in space connectivity focus on creating innovative solutions for inclusive and sustainable digital futures.

7.6.2 Bridging the digital divide [~~bridging~~ through space-based connectivity can help to addresses the needs of [Deletion by India] ~~historically~~ unserved and underserved communities.

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| **Modification proposed paragraph 7.6.2:** India proposes to delete the word historically from the sentence.  |

7.6.3 Enabling policy and regulatory frameworks support the responsible deployment and use of space-based connectivity systems

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| **Modification proposed to paragraph 7.6.3:** **China proposed modification to 7.6.3:** ITU plays a crucial role in regulating outer space activities, and administrative department of Member States play the decisive role in regulation and information security. Enabling policy and regulatory frameworks support the responsible deployment and sustainable usage of space-based connectivity systems. |

7.6.4 Complementarity between different space-based systems and terrestrial networks creates opportunities for enhanced connectivity solutions.

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| **Addition proposed:** **India proposes to add the following paragraphs after paragraph 7.6.4**7.6.5 The spectrum and orbits being limited; it is necessary to use it optimally with equitable access to all country specially underdeveloped countries.7.6.6 Public private partnership and economic incentive by governments can accelerate the deployment of space technologies which can accelerate access to connectivity in underserved and unserved regions.**Tanzania proposes to add the following paragraphs after paragraph 7.6.4**7.6.5 Affordable access to satellite infrastructure, including satellite manufacturing and launches, is critical to enable broader participation in space activities, particularly for developing and least developed countries. Reducing costs and fostering collaboration can help make space more accessible to all nations7.6.6 With the increasing number of satellites in orbit, effective Space Traffic Management (STM) is essential for protecting orbital slots and maintaining long-term sustainability of space activities. 7.6.7 Fair regulatory treatment between terrestrial and space-based services (particularly IMT) is crucial to prevent the distortion of existing terrestrial broadband market by emerging space-based services. Ensuring that both services are equitably regulated promotes innovation while protecting terrestrial markets, allowing balanced growth across both industries.7.6.8 Unlike GSO, LEO satellite mega constellations are becoming less reliant on in-country ground stations to relay relevant country traffic to the internet. This shift raises concerns regarding data sovereignty, security, and safety, as countries may have less control over data flow and potential vulnerabilities in their communications |

7.7 Given these critical considerations in space connectivity and sustainability, policymakers and stakeholders must address the following questions to ensure responsible development of space-based telecommunications/ICT technology and services:

7.7.1 What challenges, trends and developments in space-based connectivity contribute to an inclusive, sustainable, resilient, affordable and innovative digital future? How can governments, industry, and civil society each build upon these developments?

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| **Modification proposed to paragraph 7.7.1:** **UK and Germany proposed modification to 7.7.1:**7.7.1 What challenges, trends and developments in space-based connectivity contribute to an inclusive, sustainable, resilient, affordable and innovative digital future? How can ~~governments~~ the public sector, ~~industry~~ the private sector, and civil society each build upon these developments? |

7.7.2 How can space connectivity bridge digital divides and contribute to sustainable development, particularly in communities historically unserved and under-served by legacy connectivity services?

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| **Modifications proposed to paragraph 7.7.2:** **UK and Germany proposed modification to 7.7.2:**7.7.2 How can space connectivity bridge digital divides and contribute to sustainable development, particularly in [Replacement from the UK and Germany] historically unserved and underserved communities~~communities historically unserved and under-served by legacy connectivity services?~~**China proposed modification to 7.7.2:** 7.7.2 How can space connectivity bridge digital divides and contribute to sustainable development, particularly in communities historically unserved and under-served by legacy connectivity services while ensuring information security? |

7.7.3 How can administrations at the national, regional, and international levels create an enabling policy and regulatory environment for the deployment and use of space-based connectivity?

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| **Modifications proposed to paragraph 7.7.3:** **UK and Germany proposed modification to 7.7.3:**7.7.3 How can administrations act at the national, regional, and international levels create an enabling policy and regulatory environment for the deployment and use of space-based connectivity? **China proposed modification to 7.7.3:** 7.7.3 How can administrations at the national, regional, and international levels create an enabling policy and regulatory environment for the deployment and use of space-based connectivity, while improving regulation to mitigate the information security risks that may arise from the rapid deployment of the GSO/NGSO satellite system? |

7.7.4 How can complementarities among different space-based connectivity systems and between space-based connectivity systems and terrestrial networks contribute to an inclusive and innovative digital future?  How can policymakers help enable viable business models that evolve from these complementarities?

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| **Additions proposed:** **India proposes to add the following questions after question 7.7.4**7.7.5 How can international coordination be improved to manage the allocation and use of radio frequency spectrum for space-based services, ensuring minimal interference and optimal usage?7.7.6 How can governments foster effective public-private partnerships to accelerate the deployment of space-based connectivity solutions, particularly in unserved and underserved regions?7.7.7 What economic incentives can be provided to encourage investment in space-based connectivity technologies, and how can these incentives be balanced with the need for fair competition?7.7.8 How can every country and region have equitable access to space resources such as satellite orbits and spectrum? How can the ITU’s regulatory framework be strengthened to ensure fair distribution of satellite orbits and spectrum? What planning procedures can be implemented to guarantee future access to orbit/spectrum resources for all countries?7.7.9 How can the environmental impact of satellite launches and operations be minimized, and what regulations are needed to ensure environmentally sustainable practices in the space industry? What policies can be implemented to address the growing issue of space debris, and how can international cooperation be enhanced to ensure sustainable space operations?7.7.10 How can policies ensure that space-based connectivity services are accessible and affordable to all, particularly in low-income and remote communities?7.7.11 What policies can support ongoing innovation and research in space connectivity technologies, and how can these policies ensure that advancements benefit all sectors of society?7.7.12 What frameworks can be established to enhance international collaboration on space connectivity projects, and how can these frameworks address geopolitical challenges? How can regulatory frameworks be harmonized across different countries to facilitate the seamless deployment and operation of space-based connectivity systems?7.7.13 What policy and regulatory measures should be taken to ensure the security and privacy of data transmitted via space-based networks, and how can these measures be standardized internationally?**Saudi Arabia proposes to add the following questions after question 7.7.4**7.7.5 How can environmental risks, like space debris, impact the sustainability of space operations? and what innovative approaches are being considered to mitigate these challenges?*Note on the contribution from Saudia Arabia: The questions presented in the second draft effectively cover critical aspects of space connectivity but would benefit from the addition of a question that addresses the challenge of environmental risks, in particular space debris, that affect the improvement of space connectivity around the world.***Tanzania proposes to add the following questions after question 7.7.4**7.7.5 How can the cost of satellite infrastructure, including manufacturing and launches, be reduced to make space-based services more accessible to developing and least developed countries?7.7.6 What measures can be implemented to encourage international collaboration and partnerships to lower the barriers to entry for these countries?7.7.7 What regulatory frameworks need to be established to ensure effective Space Traffic Management (STM) and prevent overcrowding in orbit?7.7.8 How can countries collaborate to develop and implement space traffic coordination systems that ensure the safety and sustainability of space activities?7.7.9 What regulatory mechanisms can be put in place to prevent space-based services from distorting the terrestrial broadband market?7.7.10 How can both services be integrated in a way that fosters innovation while maintaining fair competition and protecting existing terrestrial networks market?7.7.11 How can countries ensure data sovereignty, robust data security and privacy protections are in place when using space-based services for communication? |

# 8 Strengthening ICT-centric Innovation Ecosystems and Entrepreneurship

8.1 Technology-centric entrepreneurial ecosystems are essential to drive sustainable development while increasing inclusion, providing economies of scale, and bridging digital divides.

Case Study: Digital Innovation Profiles and ITU Acceleration Centres

ITU collaborates with countries to provide accurate assessments of the health of their digital innovation ecosystems. This helps them develop strategies to inform national policies and initiatives. The ITU has delivered assessments to numerous countries, offering a comprehensive roadmap for ecosystem-driven innovation strategies.

ITU has supported countries in establishing new ecosystem acceleration centers that provide a coordinated implementation and governance framework for their digital ecosystems, helping them achieve national goals.

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| **Modification proposed to paragraph 8.1:** **UK and Germany proposed modification to 8.1:**~~Technology-centric~~ entrepreneurial ecosystems are essential to drive sustainable development while increasing inclusion, providing economies of scale, and bridging digital divides. |

8.2 However, there is a growing digital innovation divide among countries that inhibits access to equitable benefits for all.

8.3 Supportive policies and regulations are key to enable innovation and support Micro, Small and Medium-sized Enterprises (MSMEs), as well as enhanced collaboration efforts among key stakeholders, including policymakers, industry and academia.

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| **Addition proposed after paragraph 8.3:****The Bahamas proposes adding the following text after paragraph 8.3:** Note on the addition:* To provide concrete examples of barriers facing MSMEs in developing countries
* To highlight specific challenges in commercializing innovation
* To demonstrate the relationship between business climate and technology adoption
* To illustrate the importance of government support mechanisms

8.3.1 The barriers to MSMEs participation in ICT innovation in The Bahamian context, which may also be applicable to other developing countries, are multifaceted and include:* Limited local intellectual property protection with respect to the design and configuration of integrated systems
* Limited ability to commercialize technological innovation and investment in the domestic market due to the conservative local business climate and lack of willingness of businesses to adopt new technologies
* Limited support from the government for entrepreneurs in the sector (e.g., limited funding, creation of incubators, etc., compared to other markets with similar ICT penetration)
* Weak but improving enabling environment to provide feeders into the ICT/innovative sector. Despite ITU's estimated universal connectivity indicator scores of 99.4 for internet users and 93.2 for households with internet in The Bahamas, many local small businesses do not accept digital payments, have no web presence, and operate in a paper-based environment.
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8.4 Given the importance of the role of innovation as a driver of sustainable development and the growing innovation divide between developing and developed countries, several important considerations require attention:

8.4.1 Trends research readiness: Adapting to the fast-changing digital environment requires countries to be ahead of the curve and make sense of the evolution of technology, policy and innovation dynamics. This requires new thinking and approaches, such as equipping countries with foresight capabilities and strategic research.

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| **Modification proposed to paragraph 8.4.1:** **UK and Germany proposed modification to 8.4.1:**Trends research readiness: Adapting to the fast-changing digital environment requires countries to be ahead of the curve and make sense of the evolution of technology, policy and innovation dynamics. This requires new thinking and approaches, such as equipping ~~countries~~ institutions with foresight capabilities and strategic research. |
| **Comment from the UK and Germany on section 8.4.2**Might need to clarify that “open tech innovation” and “open innovation in tech” are two different things. |

8.4.2 Open technology innovation: Harnessing technological know-how for competitive digital economy value chain, embracing open innovation and multistakeholder mechanisms, accelerating access to emerging technology for all. Promoting collaboration and synergies that scale digital innovations and achieve cross-cutting sectoral value for a competitive digital economy.

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| **Comment from the UK and Germany on section 8.4.3** This might be better as two separate issues: one on the diversity and number of enterprises and another on inclusive enablement from underrepresented backgrounds. Worth clarifying each part. |

8.4.3 Entrepreneurship and MSMEs growth: Accelerating the uptake of digital innovation-driven entrepreneurship and opportunities for talent to achieve socio economic inclusion in their communities need renewed focus.

Case Study: ITU Academy Innovation Ecosystem Curriculum

ITU has been developing a curriculum for building the innovation capacity of countries, which includes many relevant courses, including Ecosystem 101, Strategic Foresight, and Ecosystem Initiative Development, among others. These courses are part of competency framework developed for ensuring countries have the skills and knowhow to engage in bridging the digital innovation divide and are available on [the ITU Academy](https://academy.itu.int/) platform.

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| **Addition proposed after paragraph 8.4.3:****The Bahamas proposes adding the following context regarding barriers to MSMEs in section 8.4:*** The barriers to MSMEs participation to ICT innovation in The Bahamian context, which may also be applicable to other developing countries, are multifaceted and include:
* Limited local intellectual property protection with respect to the design and configuration of integrated systems
* Limited ability to commercialize technological innovation and investment in the domestic market due to the conservative local business climate and lack of willingness of businesses to adopt new technologies
* Limited support from the government for entrepreneurs in the sector compared to other markets with similar ICT penetration
* Weak but improving enabling environment to provide feeders into the ICT/innovative sector
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8.4.4 Policy Acceleration: Developing agile policies that provide stakeholders with safe space for experimentation, encouraging innovation and attracting investment in the digital ecosystem. International cooperation is key to facilitate knowledge sharing, capacity building, and standardization efforts.

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| **Modifications proposed to paragraph 8.4.4:** **UK and Germany proposed modification to 8.4.4:**8.4.4 Appropriate policy: ~~Policy Acceleration:~~ Developing agile policies that provide stakeholders with safe space for experimentation, encouraging innovation and attracting investment in the digital ecosystem. International cooperation is key to facilitate knowledge sharing, capacity building, and standardization efforts.**China proposed modification to 8.4.4:**8.4.4 Policy Acceleration: Developing agile policies that ~~provide stakeholders with safe space for experimentation~~, encourage innovation and attract investment in the digital ecosystem. International cooperation is key to facilitate knowledge sharing, capacity building, and standardization efforts. |

8.5 To address these challenges in innovation ecosystems, from barriers to leverage entrepreneurship, to innovation policy, special initiatives and programs for a favorable environment, and international cooperation, several critical questions require consideration, particularly regarding the role of MSMEs in driving digital transformation:

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| **Modification proposed to paragraph 8.5:** **China proposed modification to 8.5:**8.5 To address these challenges in innovation ecosystems, ~~from barriers to leverage entrepreneurship, to innovation policy, special initiatives and programs for a favorable environment, and international cooperation,~~ several critical questions require consideration, particularly regarding the role of MSMEs in driving digital transformation: |

8.5.1 What are the barriers for MSMEs to innovate and to contribute to ICT innovation ecosystem and to make use of the digital transformation?

8.5.2 How can policy makers help MSMEs to adapt to digital transformation, making their digital transformation of the entire value chain "affordable, useful, scalable and profitable" and to integrate digital tools and technologies into ICT innovation ecosystems and support them in collaboration with large enterprises?

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| **Modifications proposed to questions 8.5.1, 8.5.2****The UK and Germany propose the following modifications to questions 8.5.1, 8.5.2:**8.5.1 What are the barriers for MSMEs to innovate and contribute to ICT innovation ecosystem ~~and to make use of the digital transformation~~?8.5.2 How can policy makers help MSMEs digitally transform ICT innovation ecosystems  ~~to adapt to digital transformation, making their digital transformation of the entire value chain "affordable, useful, scalable and profitable" and to integrate digital tools and technologies into ICT innovation ecosystems~~ and support them in collaboration with large enterprises? |

 8.5.3 How can policy makers help MSMEs innovate, grow and integrate into the ICT innovation ecosystem more efficiently?

8.5.4 How can ITU assist policy makers to work with relevant stakeholders to invest in ICT research and development for new innovative products and services for MSMEs?

8.5.5 How can ITU assist policy makers to bring intellectual property developed by MSMEs to market and to the ICT innovation ecosystem?

8.5.6 How can policy makers, universities, research institutes, innovation hubs and enterprises in the ICT innovation sector promote, invest, support and develop entrepreneurship and enhance the supply of digital talents for enterprises?

8.5.7 How can policy makers promote competition and improve access to open markets to foster entrepreneurship?

8.5.8 How can the ITU and international cooperation support MSMEs and assist policy makers by providing platforms for building cooperation networks for knowledge and capability sharing, for evaluation and training, for bringing ICT innovations into standardization, for regulatory toolkits and sandboxes?

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| **Modifications proposed to question 8.5.8:****China proposes the following modification to question 8.5.8:** Note on the modification: “to reinforce the theme for section 8 --innovation and entrepreneurship.”8.5.8 How can the ITU and international cooperation support enhancing ICT-centric innovation and entrepreneurship ~~MSMEs and assist policy makers~~ by providing platforms ~~for~~ such as building cooperation networks for knowledge and capability sharing, for evaluation and training, for bringing ICT innovations into standardization, for regulatory toolkits and sandboxes? |

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| **Additions proposed: The UK and Germany propose the following new questions:** 8.5.9 How can reducing regulatory barriers to market entry enable innovation with telecommunications/ICTs?8.5.10 What capacities do public bodies need to support an innovative telecommunications/ICT sector and to anticipate emerging issues? |

Annex: [PLACEHOLDER] DRAFT OPINIONS FOR THE SEVENTH WORLD TELECOMMUNICATION/INFORMATION AND
COMMUNICATION TECHNOLOGY POLICY FORUM 2026

CURRENT STATUS OF POTENTIAL DRAFT OPINIONS

Contributions on possible Draft Opinions received from members of the IEG-WTPF-26 for the second meeting on 7-8 October 2024 are listed below in the order in which they were received. Members were requested by the Chair to consolidate similar contributions so that the Group can focus on a manageable number of draft Opinions and work towards a consensus.

## DRAFT OPINIONS

1. Draft Opinion on bridging digital divides, particularly on gender and age as well as skills and connectivity

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| Draft Opinion on bridging digital divides, particularly on gender and age as well as skills and connectivity. ***Document ITU-SG WTPF-26-IEG-1/2*** *(*[*Contribution submitted by India*](https://www.itu.int/md/S24-WTPF26IEG1-C-0002/en)*), Submitted 2024-08-27*Draft opinion on building digital transformation, climate, and environmental sustainability; resilience of telecommunication; and bridging digital divides, particularly on gender and age as well as skills and connectivity. ***Document ITU-SG WTPF-26-IEG-1/7*** [(Contribution submitted by Rwanda)](https://www.itu.int/md/S24-WTPF26IEG1-C-0007/en), Submitted 2024-09-24Multicountry contribution - Draft Opinion on Bridging Digital Divides, Particularly on Gender and Age as well as Skills and Connectivity. ***Document ITU-SG WTPF-26-IEG-2/8*** *(Contribution submitted by United Kingdom & Germany),* Submitted 2025-02-13Contribution by China - Draft opinions for the WTPF 2026. **Document ITU-SG WTPF-26-IEG-2/6** [(Contribution submitted by China)](https://www.itu.int/md/S25-WTPF26IEG2-C-0006/en), Submitted 2025-01-13 |

1. Draft Opinion on green digital transformation: climate change and environmental sustainability

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| Draft opinion on building digital transformation, climate, and environmental sustainability; resilience of telecommunication; and bridging digital divides, particularly on gender and age as well as skills and connectivity. ***Document ITU-SG WTPF-26-IEG-1/7*** [(Contribution submitted by Rwanda)](https://www.itu.int/md/S24-WTPF26IEG1-C-0007/en), Submitted 2024-09-24Multicountry contribution - Draft Opinion on green digital transformation: Climate change and environmental sustainability. **Document ITU-SG WTPF-26-IEG-2/11** [(Contribution submitted by United Kingdom, France, and Germany)](https://www.itu.int/md/S25-WTPF26IEG2-C-0011/en), Submitted 2025-01-13 |

1. Draft Opinion on Inclusive and Sustainable Space Connectivity

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| Considerations for WTPF discussion of space connectivity. **Document ITU-SG-WTPF-26-IEG-1/4** [(submitted by Amazon.com Services, LLC)](https://www.itu.int/md/S24-WTPF26IEG1-C-0004/en) Submitted 2024-08-28Draft Opinion on accelerating an inclusive and sustainable space connectivity. **Document ITU-SG WTPF-26-IEG-1/8** [(Submitted by Saudi Arabia , Bahrain , Egypt , South Africa)](https://www.itu.int/md/S24-WTPF26IEG1-C-0008/en) Submitted 2024-09-25Contribution by China - Draft opinions for the WTPF 2026. **Document ITU-SG WTPF-26-IEG-2/6** [(Contribution submitted by China)](https://www.itu.int/md/S25-WTPF26IEG2-C-0006/en), Submitted 2025-01-13 |

1. Draft opinion on Resilience of telecommunication/ICTs

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| Draft opinion on building digital transformation, climate, and environmental sustainability; resilience of telecommunication; and bridging digital divides, particularly on gender and age as well as skills and connectivity. ***Document ITU-SG WTPF-26-IEG-1/7*** [(Contribution submitted by Rwanda)](https://www.itu.int/md/S24-WTPF26IEG1-C-0007/en), Submitted 2024-09-24Draft Opinion on strengthening resilience global telecommunications/ICT systems. **Document ITU-SG WTPF-26-IEG-1/9** [(Contribution submitted by Saudi Arabia , Bahrain , Egypt , South Africa),](https://www.itu.int/md/S24-WTPF26IEG1-C-0009/en) Submitted 2024-09-25Multicountry contribution - Draft opinion on the resilience of telecommunications/ICTS. **Document ITU-SG WTPF-26-IEG-2/9** [(Contribution submitted by United Kingdom, Germany),](https://www.itu.int/md/S25-WTPF26IEG2-C-0009/en) Submitted 2025-01-13 |

1. Draft Opinion on Inclusive and Sustainable Space Connectivity

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| Considerations for WTPF discussion of space connectivity. **Document ITU-SG-WTPF-26-IEG-1/4** [(submitted by Amazon.com Services, LLC)](https://www.itu.int/md/S24-WTPF26IEG1-C-0004/en) Submitted 2024-08-28Draft Opinion on accelerating an inclusive and sustainable space connectivity. **Document ITU-SG WTPF-26-IEG-1/8** [(Submitted by Saudi Arabia , Bahrain , Egypt , South Africa)](https://www.itu.int/md/S24-WTPF26IEG1-C-0008/en) Submitted 2024-09-25Contribution by China - Draft opinions for the WTPF 2026. **Document ITU-SG WTPF-26-IEG-2/6** [(Contribution submitted by China)](https://www.itu.int/md/S25-WTPF26IEG2-C-0006/en), Submitted 2025-01-13 |

VII. Draft opinion on strengthening ICT-centric innovation ecosystems and entrepreneurship

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| Contribution by China - Draft opinions for the WTPF 2026. **Document ITU-SG WTPF-26-IEG-2/6** [(Contribution submitted by China)](https://www.itu.int/md/S25-WTPF26IEG2-C-0006/en), Submitted 2025-01-13Multicountry contribution - Draft opinion on strengthening ICT-centric innovation ecosystems and entrepreneurship. **Document ITU-SG WTPF-26-IEG-2/10** [(Contribution submitted](https://www.itu.int/md/S25-WTPF26IEG2-C-0009/en) [by](https://www.itu.int/md/S25-WTPF26IEG2-C-0010/en) [United Kingdom, Germany),](https://www.itu.int/md/S25-WTPF26IEG2-C-0009/en) Submitted 2025-01-13 |

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1. In the same way that the GDC links commitments to specific SDGs. [↑](#footnote-ref-1)
2. WTSA Resolution 2 (Rev. New Delhi, 2024) on “Scope and mandate of the ITU Telecommunication Standardization Sector study groups” [↑](#footnote-ref-2)
3. “Press Release,” ITU, accessed November 18, 2024, https://www.itu.int:443/en/mediacentre/Pages/PR04-2020-ICT-industry-to-reduce-greenhouse-gas-emissions-by-45-percent-by-2030.aspx. [↑](#footnote-ref-3)
4. *Did You Know ITU Develops Submarine Cable Standards?*, 2024, https://www.youtube.com/watch?v=EVkpxsPceuk. [↑](#footnote-ref-4)
5. *Did You Know ITU Develops Submarine Cable Standards?*, 2024, https://www.youtube.com/watch?v=EVkpxsPceuk. [↑](#footnote-ref-5)