

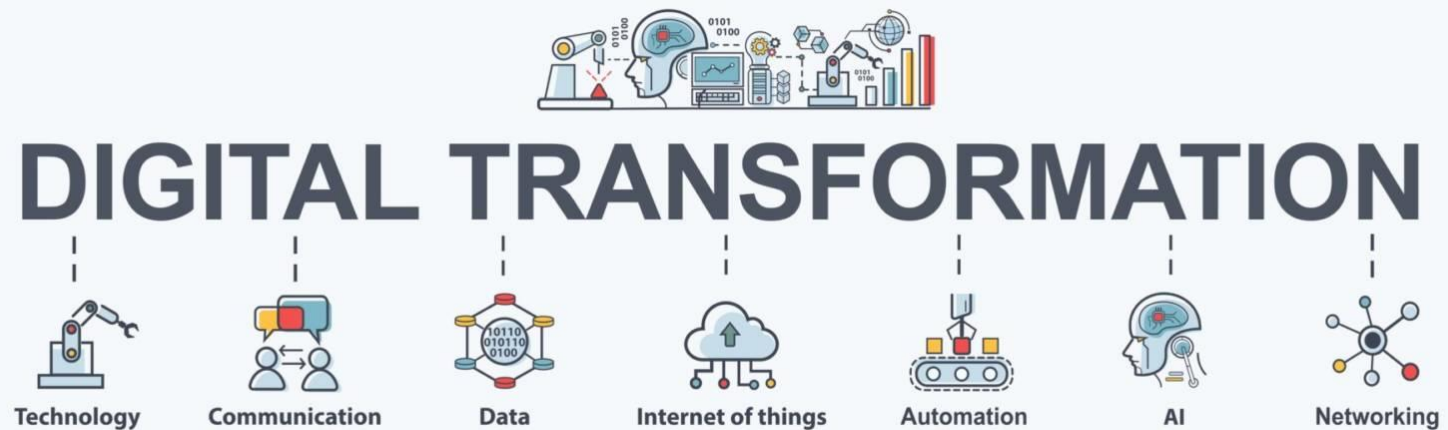
Towards a Sustainable Digital Transformation with International Standards

Dominique Würges, Chairman
ITU-T Study Group 5



What is Digital Transformation?

Digital transformation is the process of integrating digital technology into all aspects of a sector in order to better connect with people, improve efficiency, and create new opportunities. It is a critical strategy to stay competitive in the digital age.



Why is Digital Transformation Important For Sustainability?

Make our economies circular by closing the loops of material and energy flows



Help achieve net zero targets



Empower consumers to make more informed decisions about their lifestyles and consumption choices

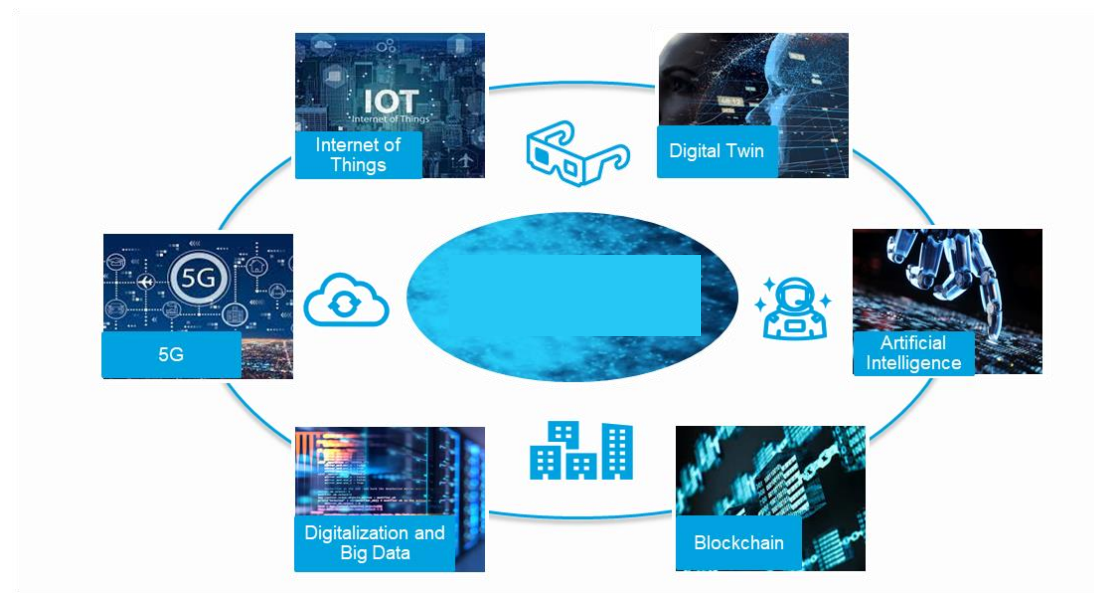


Increase energy efficiency and build a clean energy future



Reduce environmental impacts by optimizing resource use and reducing waste

Digital Transformation Important For the SDGs



Sustainable Digital Transformation and Standards



International standards represent the amalgamation of knowledge contributed by experts from around the world!



For cities and governments

- Reduce carbon emissions
- Achieve a sustainable digital Transformation
- Improve uptake of green energy
- Achieve targets set in the Paris Agreement and SDGs



For ICT Sector

- Technical guidance to implement green energy solutions
- Provide measurement tools to evaluate progress
- Bring low-cost connectivity to rural areas
- Reach net-zero

How Standards Support Sustainable Transformation



International Telecommunication Union (ITU)



The **International Telecommunication Union (ITU)** is the United Nations specialized agency for information and communication technologies (ICTs)



193 Member states

+700 Companies / organizations

+160 Academia members

How ITU Supports Sustainable Digital Transformation



Connect 2030



1

ITU:
International Telecommunication Union –
the UN specialized agency for ICTs

2

ITU-T Study Group 5:
EMF, environment, climate action, sustainable digitalization,
and circular economy

FG-AI4EE: Focus Group on Environmental
Efficiency for Artificial Intelligence & other
Emerging Technologies

ITU-T Study Group 5 Standards Development Areas



**Electromagnetic compatibility,
resistibility and lightning
protection**



**Soft error caused by particle
radiations**



**Human exposure to
electromagnetic fields**



**Circular economy and e-waste
management**



**ICTs related to the
environment, energy efficiency,
clean energy and sustainable
digitalization for climate
actions**

Study Group 5 Key Topics: EMC, Lightning Protection, EMF

Protection, Reliability, Safety and Security



- **ITU-T K.120** “Lightning protection and earthing of a miniature base station”
- **ITU-T K.134** “Protection of small-size telecommunication installations with poor earthing conditions”
- **ITU-T K.151** “Electrical safety and lightning protection of medium voltage input and up to ± 400 VDC output power system in ICT data centres and telecommunication centres”

Lightning Protection



- **ITU-T K.120** “Lightning protection and earthing of a miniature base station”
- **ITU-T K.134** “Protection of small-size telecommunication installations with poor earthing conditions”
- **ITU-T K.151** “Electrical safety and lightning protection of medium voltage input and up to ± 400 VDC output power system in ICT data centres and telecommunication centres”

EMF



- **ITU-T K.44** “Resistibility tests for telecommunication equipment exposed to overvoltages and overcurrents - Basic Recommendation”
- **ITU-T K.91**, “Guidance for assessment, evaluation and monitoring of human exposure to radio frequency electromagnetic fields”

Electromagnetic Compatibility



- **ITU-T K.136** “Electromagnetic compatibility requirements for radio telecommunication equipment”
- **ITU-T K.137** “Electromagnetic compatibility requirements and measurement methods for wireline telecommunication network equipment”

Study Group 5 Key Topics: Towards a Sustainable Digital Transformation

Environmental efficiency of digital technologies



- **ITU-T L.1317** “Guidelines on energy efficient blockchain systems”
- **ITU-T L.1331** “Assessment of mobile network energy efficiency”

Power feeding and energy storage



- **ITU-T L.1210** “Sustainable power-feeding solutions for 5G networks”
- **ITU-T L.1221** “Innovative energy storage technology for stationary use - Part 2: Battery”

Sustainable Data Centres



- **ITU-T L.1304** “Procurement Criteria for Sustainable Data Centres”
- **ITU-T L.1305** “Data centre infrastructure management system based on big data and artificial intelligence technology”

Smart Energy Solutions



- **ITU-T L.1380:** Telecom Sites
- **ITU-T L.1381:** Data Centre
- **ITU-T L.1382:** Telecommunication Room
- **ITU-T L.1383:** City and home applications

Study Group 5 Key Topics: Towards a Sustainable Digital Transformation

Sustainable buildings



- **ITU-T L.1370** “Sustainable and intelligent building services”
- **ITU-T L.1371** “A methodology for assessing and scoring the sustainability performance of office buildings”

Sustainable management of E-waste and Supply Chain



- **ITU-T L.1015** “Criteria for evaluation of the environmental impact of mobile phones”
- **ITU-T L.1035** “Sustainable Management of Batteries”
- **ITU-T L.1060** “General principles for the green supply chain management of information and communication technology manufacturing industry”

Circular Economy



- **ITU-T L.1022** “Circular Economy: Definitions and concepts for material efficiency for Information and Communication Technology” (tentative)
- **ITU-T L.1023** “Assessment method for circular scoring”

Climate Actions towards Net Zero



- **ITU-T L.1450** “Methodologies for the assessment of the environmental impact of the ICT sector”
- **ITU-T L.1470** “GHG trajectories for the ICT sector compatible with the UNFCCC Paris Agreement”
- **ITU-T L.1471** “Guidance and criteria for ICT organizations on setting Net Zero targets and strategies”

Circular and sustainable cities and communities



- **ITU-T L.Suppl. 46:** “Definitions and Recent Trends in Circular Cities”

Strengthening Collaboration and Implementation of Standards



Collaboration with other SDOs



Collaboration Across UN Agencies



Towards COP Outcomes

Conference of the Parties (COP 27)



- At COP 27, the commitments of countries to keep the Paris agreement and therefore the contributions of companies will be discussed.
- ITU helps member states and the ICT sector to meet the targets of the commitments
- Example: ITU-T L.1470

COP of the CBD (Convention on Biological Diversity)



- Biodiversity is included in the new mandate of ITU-T SG5
- ICT importance and role on biodiversity

Advancing Sustainable Digital Transformation

Study Group 5 – Leading on Key Topics

ICT safety



The environmental aspects of digital technologies



E-waste, the circular economy and supply chain management



ICT and the net-zero challenge



ICT impacts on biodiversity



Becoming a circular city



Thank you!

Questions? Interested in learning more?
Let us know!



Email

tsbsg5@itu.int
dominique.wurges@orange.com



Website

[SG5: Environment, climate
change and circular economy](#)