



Towards a new ITU index

Draft for discussion, 25 March 2020

Introduction and background

Based on the discussions that took place with Member States in Geneva on 10 February 2020, and in view of the consensus gathered around the idea of launching a new ITU index, linking digital technologies to the Sustainable Development Goals (SDGs) in order to assess how digital transformations may impact the ability of countries to achieve the SDGs, the present document has been produced to present progress in the development of a draft conceptual framework for such an index.

This framework elaborates on the objectives and value added of the index, and includes a mapping of SDG targets to the pillars of the framework as well as a discussion on the role of digital technologies to achieve those targets.

As recalled in the background paper prepared by the ITU Secretariat for the Expert Meeting of 10 February 2020¹, the Plenipotentiary Conference of the ITU provided indications for how to make the measurement tools of ITU more relevant. Resolution 131 (rev. Dubai, 2018) recognises that an ITU index is important for measuring the information society and the extent of the digital divide in international comparisons and stipulates that such an index should reflect the real development of the ICT sector, taking into consideration different levels of development and national circumstances as well as ICT trends, in application of the WSIS outcomes. Moreover, resolution 71 (rev. Dubai, 2018) states the mission of the ITU as *“(t)o promote, facilitate and foster affordable and universal access to telecommunication/information and communication technology networks, services and applications and their use for social, economic and environmentally sustainable growth and development.”*

An index that reflects the real development of the ICT sector, takes into account ICT trends and the WSIS outcomes and is faithful to the ITU mission at the same time, should have a broad focus, taking into account social, economic and environmental aspects. A framework with that scope already exists in the form of the 17 SDGs adopted by the Heads of State and Government and High Representatives, meeting at United Nations Headquarters in New York in September 2015.² The 2030 Agenda for Sustainable Development was a universal call to action to end poverty, protect the planet and ensure that all people enjoy peace and prosperity by 2030.

¹ See the [background document](#) and [summary](#) of the meeting.

² See

<https://sustainabledevelopment.un.org/content/documents/21252030%20Agenda%20for%20Sustainable%20Development%20web.pdf>.

Objectives and value added of the new index

Digital technologies are an important catalyst to enable progress towards achieving the SDGs. This is recognised in the 2030 Agenda, which states that *“the spread of information and communications technology and global interconnectedness has great potential to accelerate human progress, to bridge the digital divide and to develop knowledge societies.”* Digital change will have impacts – some of them helpful, others detrimental – on every single SDG, ranging from poverty alleviation to resource efficiency, from governance to energy and mobility systems, from employment to transnational partnerships. Digital technology is speeding up fundamental societal and economic change.³

Within the United Nations system, specific efforts have been launched and will be pursued by specialized agencies in each and every one of the key areas identified by the SDGs: WHO on health, UNESCO on education, etc. Many UN institutions (for instance the UN Regional Commissions) will be expected to make multiple contributions, as warranted by their respective mandates. The mandate of ITU is not linked to any specific SDG, as digital technologies are a potential enabler of all of the SDGs. For many of them, the process of digital transformation is a key dimension to be considered (negatively or positively) when assessing the world’s collective ability to reach specific objectives. This is the case, for example, for SDG 8 (Decent Work and Economic Growth), where digital technology has disrupted labour markets while raising new issues about the ‘future of work’.

By offering a new index focusing on the relationship between digital technologies on the one hand and SDGs on the other, ITU fulfills an important mission, which can be summarized in five points:

1. Enhance the ability of the world community to identify ways in which digital technologies may affect our collective ability to reach the SDGs;
2. Empower decision makers (public and private) to make better decisions about how they invest resources to provide better living conditions to their employees, customers and citizens in a global digital economy;
3. Provide a fact-based knowledge resource to inform the complex international and national debates arising from perceived competition between specific SDGs, or national priorities regarding the adoption and use of digital technologies;
4. Help identify possible ‘best practices’ by which digital transformation can be harnessed for common good and sustainable development; and
5. Help elevate the importance of ICT for development by bringing it to the attention of heads of government and other key stakeholders.

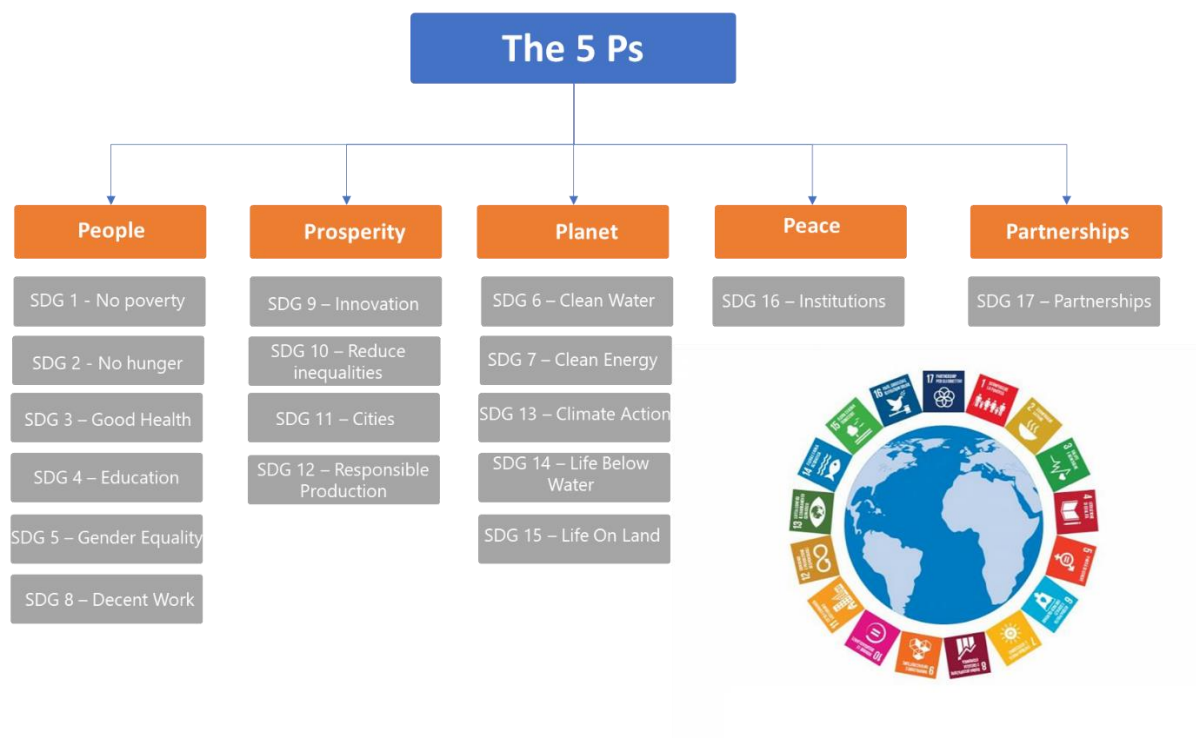
³ See https://irp-cdn.multiscreensite.com/be6d1d56/files/uploaded/190830-Six-Transformations_working-paper.pdf.

Digital societies and SDGs: mapping a complex relationship

Mapping a new ITU model and index to specific SDG targets

The 17 Goals of the 2030 Agenda for Sustainable Development, which are regrouped under the ‘5 Ps’: People, Prosperity, Planet, Peace and Partnership, provide a natural point of departure for the construction of such an index (see Figure 1).

Figure 1: Mapping SDGs to the five Ps



These five themes offer an intuitive, multi-dimensional measurement framework for gauging in a comprehensive way how digital transformation contributes to countries’ capacities to meet the different SDGs. While digital technologies affect all of the SDGs, it is useful to generalize their main role in each of these themes:

- *People* includes goals largely related to improving lives. Here digital technologies play an enabling role by enhancing opportunities for increasing income (e.g. easier access to productive information, devices for increasing agricultural production), improving health (e.g. drones delivering medical supplies), expanding educational opportunities (e.g. distance education), accessing public services (e.g. birth certificates) and facilitating female employment via flexible ICT-enabled options that balance work and family.
- *Prosperity* covers goals largely relating to the economy. Here digital technologies play a role in transformational diversification to a digital economy. Digital technologies enhance productivity and create opportunities for new ways of organizing and carrying out economic activities, transforming industries from transportation (e.g. ride hailing, online ticket ordering) to manufacturing (e.g. Industry 4.0) and tourism (e.g. home sharing) to retail (e.g. e-commerce) and trade in services. At the same time, the possession of digital skills creates opportunities for quality employment.

- *Planet* consists of goals largely relating to the environment. Digital technologies can make important contributions to improve the efficient use of resources in such areas as transport, energy and water. They also play a crucial role in earth monitoring, sharing climate and weather information, forecasting and early warning systems, using satellites, drones or sensors.
- *Peace* includes just one SDG. Here, the most important contribution of digital technologies is transparency and citizen engagement. Whether it means open data sets or online public services, the overarching consideration is that transparency and participation are increased, and corruption likely reduced. Open data provides free and public information about government operations allowing users to scrutinize the figures. Online transactions and digital IDs reduce the scope for corruption.
- *Partnership* also includes just one SDG. In the 2030 Agenda, the focus is on Global Partnership. In the current context, however, co-operation among stakeholders within countries is more relevant. Online tools that foster co-operation and collaboration among citizens, businesses and governmental agencies are the prime area of interest in this regard.

Further work is currently being developed to identify specific ICT-related indicators/variables that could be linked to as many as possible of the 169 SDG targets. Since the purpose of this initial document is to offer a broad view of the main areas to be included in an ‘SDG Digital Technology Index’, and to illustrate what such a mapping could look like, only a few illustrations will be provided. Even at the still high level of abstraction proposed at this stage, it is clear that, under each of the ‘five Ps’ strong linkages can already be identified with ICT-related priorities and areas of activity, and how each of them could contribute to realizing or accelerating the achievement of SDGs. Table 1 below suggests how such a mapping could be shaped vis-à-vis a subset (22) of these 169 targets.

Table 1: Mapping SDG targets to the five Ps

PILLAR	SDG TARGET
People	Target 1.4: Ensure that all men and women have equal rights to resources and services
	Target 4.3: Ensure equal access for all women and men to affordable and quality education
	Target 4.4: Substantially increase the number of youth and adults who have relevant skills
	Target 5.b: Promote the empowerment of women through use of technology
	Target 9.c: Increase access to ICT
	Target 10.3: Ensure equal opportunity and reduce inequalities of outcome
	Target 11.1: Ensure access for all to adequate, safe and affordable housing and basic services
Prosperity	Target 2.3: Double the agricultural productivity and incomes of small-scale food producers
	Target 2.c: Ensure the proper functioning of food commodity markets and their derivatives and facilitate timely access to market information
	Target 8.2: Achieve higher levels of economic productivity through diversification, technological upgrading and innovation

	Target 8.3: Promote development-oriented policies that support productive activities, decent job creation, entrepreneurship, creativity and innovation, and encourage the formalization of enterprises
	Target 9.1: Develop quality, reliable, sustainable and resilient infrastructure
	Target 9.a: Facilitate sustainable and resilient infrastructure development in developing countries
	Target 17.8: Innovation capacity-building for LDCs, including enhance the use of enabling technology
Planet	Target 11.b: Integrated policies and plans towards inclusion, resource efficiency, mitigation and adaptation to climate change in cities and human settlements
	Target 12.4: Achieve the environmentally sound management of chemicals and all wastes throughout their life cycle
	Target 12.5: Substantially reduce waste generation through prevention, reduction, recycling and reuse
	Target 12.8: Ensure relevant information and awareness for sustainable development and lifestyles in harmony with nature
	Target 13.1: Strengthen resilience and adaptive capacity to climate-related hazards and natural disasters in all countries
Peace	Target 16.6: Develop effective, accountable and transparent institutions at all levels
	Target 16.7: Ensure responsive, inclusive, participatory and representative decision-making at all levels
	Target 16.10: Ensure public access to information and protect fundamental freedoms
Partnerships	Target 17.8 Enhance the use of enabling technology, in particular information and communications technology

Note: In each target's number, the first digit refers to the relevant SDG. For example 'Target 12.8' relates to SDG 12.

There are numerous ways in which digital technologies can support the achievement of the identified SDG targets and, more generally, contribute to growth and sustainable development. In some instances, the access and use of ICTs are even part of the definition of the target or the associated indicator. This is, for example, the case with SDG targets 1.4 and 4.4, where the former is partly concerned with access to ICT services and the latter deals with ICT skills.⁴ In other instances, digital technologies can have a clear and positive impact on achieving the target. The positive effects of mobile phone use and connectivity to agricultural productivity is one well-known example,⁵ as is the impact of digital transformation on energy efficiency.⁶ In the end, what these and other examples illustrate, is that digital technologies are – often for better, sometimes for worse – deeply interwoven in the fabric of today's societies and economies and, as such, are a critical factor in the achievement of the SDGs.

The aforementioned February 10 background document prepared by the ITU includes additional examples of the role of digital technologies in achieving the SDGs.⁷

⁴ See <https://unstats.un.org/sdgs/metadata/files/Metadata-01-04-01.pdf> for target 1.4 and <https://unstats.un.org/sdgs/metadata/files/Metadata-04-04-01.pdf> for target 4.4.

⁵ See, for instance, <http://www.fao.org/3/ca4887en/ca4887en.pdf>.

⁶ See, for instance, <https://www.iea.org/reports/digitalisation-and-energy>.

⁷ See primarily the Annex of the [background document](#).

Proposed structure and conceptual framework of the new index

Overall philosophy of the new index

As mentioned in the February 10 background document, *'in observation of Resolution 71 and Resolution 131, the ITU Secretariat is proposing to develop a composite index that will provide a monitoring tool for governments to assess how digital transformations may impact our ability to achieve the SDGs. The index will embody a move beyond the often technical world of digital technologies to a more human side touching on well-being and sustainability by addressing all of the SDGs.*

Thus, one of the guiding principles of the index proposed is to go beyond the mere benchmarking of telecommunication infrastructure towards a more multi-dimensional, human-centric composite index. This will not only include measures of access, use and skills of digital technologies, but will also take into account the role of digital technologies in human development and include dimensions such as health, education, business, government, employment, food and agriculture, gender, and poverty.

Moreover, the new index should be readable (i.e. simple enough to be easily understood), actionable (i.e. it should be a tool to help countries to improve their abilities to pursue, accelerate and reach SDGs), and adaptable (i.e. as new data and priorities emerge in the future, the index should have the flexibility to include them).

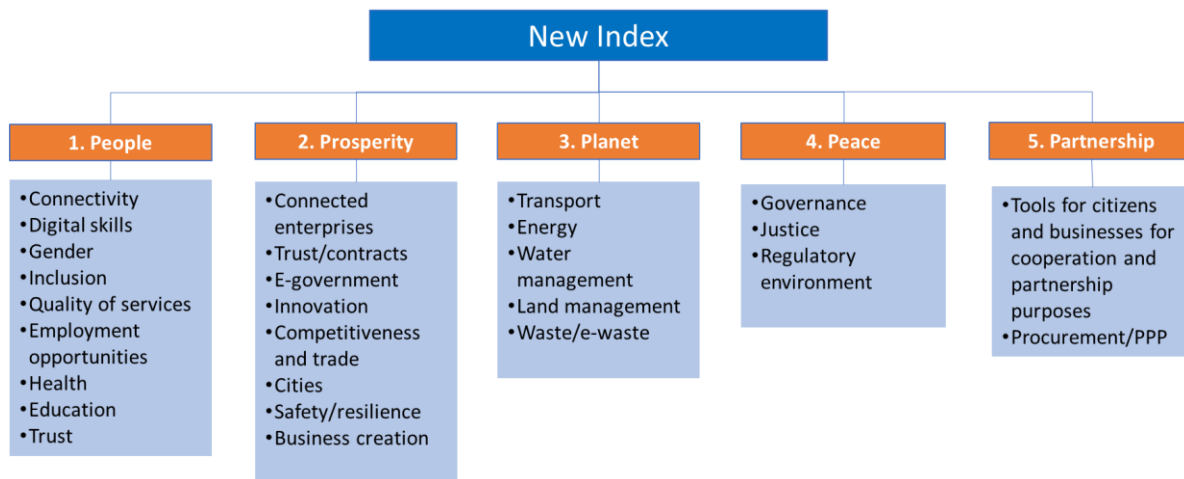
Last but not least, the new index should not be seen as a tool to promote a broader or deeper use of digital technologies. It should be a tool to enhance countries' ability to organize their digital transformation in a way that maximizes its benefits to the national economy, and to the global community. It is hence important that the new index should also include the potential negative effects of digitization, on the environment (e.g. through e-waste), on employment (e.g. through the replacement of human workers by machines or algorithms), or on gender (e.g. through possible cognitive biases in AI), to mention only a few examples.

Underlying model and structure

The new index should not just be a benchmarking instrument, but also a tool for action. In other words, it should help decision makers and analysts to have a better understanding of where capacities are, and how well they are used, as well as to identify best practices, roadblocks and how lessons can be learned from the global experience of countries around the world.

The model that is proposed for the new index is visually presented in Figure 2. Its basic structure rests on five pillars drawn from the five critical areas (5 Ps) highlighted in the 2030 Agenda: People, Prosperity, Planet, Peace and Partnership (see Figure 1 above). Under each of these pillars, a certain number of measurement areas' to be considered have been listed as bullet points. The formulation of these bullet points is intentionally high-level in order to help differentiate the discussion on the conceptual framework of the new model (which is the purpose of the present document) from the discussion on specific indicators/variables to be used (which will be developed at a subsequent stage).

Figure 2: Proposed 'SDG Digital Technology Index' (Conceptual Framework)



There are three clear benefits with the proposed model:

- First, it is simple and intuitive, while - at the same time - comprehensive and takes into account the cross-cutting nature of digital technologies in the society, economy and environment.
- Second, it provides a direct link between the work and mandate of the ITU and the achievement of the SDGs.
- Third, it allows countries to, on the one hand, assess their availability of ICT tools and, on the other, measure the usage and impact of digital technologies on their development, and better leverage digital technologies as a strategic tool to achieve specific SDG targets.

Next steps

Mapping specific indicators to specific SDGs

Once the conceptual framework is finalized, work will commence to check the availability and quality of potential indicators that could be included in the new index. This will be done in close consultation with other UN agencies and work is already ongoing in this regard.

On the basis of available data and feedback from those agencies, a precise mapping of indicators to specific SDGs and pillars will be produced, leading to a more precise structure of the index (sub-pillar and data levels). Progress will be presented during an Expert Group Meeting with Member States on 17 April 2020.⁸

Collecting data and producing the new index

Subsequently, the methodology will be finalized, the new index will be calculated, a sensitivity analysis will be conducted, and the final results computed. The new index could be launched in the second half of 2020. The full proposed schedule is in Table 2 below.

⁸ See <https://www.itu.int/en/ITU-D/Statistics/Pages/events/2ndegmITUindex2020/default.aspx>.

Table 2: Proposed way forward

28 January 2020	Brainstorming with potential partners	✓
10 February 2020	Expert Meeting with Member States to discuss new proposal	✓
February - March 2020	Finalizing conceptual framework Initial checking of data availability and description of quality profile of available indicators	in progress
17 March 2020	Second brainstorming with partners	✓
25 March 2020	Present concept at TDAG Web Dialogue (remote participation)	
March - May 2020	Methodology preparation, data collection/compilation, preliminary indicators testing	
17 April 2020	Expert Meeting with Member States to present and discuss the draft index framework/methodology (half day, remote participation) (relevant document will be shared with Member States in advance)	
June - July 2020	Calculation of the index, sensitivity analysis, finalization of indicators, data and results	
June 2020	Present draft index methodology to Council for discussion (relevant document will be shared with Member States in advance)	
July – September 2020	Drafting/analysis	
Second half 2020	Launch of the new Index	
1-3 December 2020	17 th World Telecommunication/ICT Indicators Symposium (WTIS)	