



# Introducing the New G5 Benchmark

## ...the Gold Standard for Collaboration amongst Regulators

This paper outlines the new G5 Benchmark for collaborative regulation – based on data from more than 80 countries (mostly mature G4 countries), and presents initial findings. The G5 Benchmark is a powerful, straightforward tool for policy-makers and regulators. It enables you to track how regulatory frameworks are evolving in the digital economy and dives deep into policy trends. It enriches global policy debate and sets out new goals for regulatory excellence. The G5 Benchmark identifies policy and implementation shortcomings in pursuit of SDGs, and points to how collaborative regulation can remedy them. It constitutes the gold standard for collaboration amongst regulators, and for the design of digital policy and legal instruments that maximize digital transformation. The full dataset as well as in-depth analysis on the findings of this first G5 Benchmark will be published in the 2019 edition of the Global ICT Regulatory Outlook.

*The G5 Benchmark is based on data provided by ITU Member State Administrations through annual ITU surveys. Additional research was carried out to complement the dataset. The Benchmark is set to evolve and we invite ITU Members to provide their comments, views, suggestions or questions on its methodology and structure. We will continue the conversation beyond GSR19 and count on Members to provide contributions to enhance the tool.*

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## Collaborative regulation – key to unlocking digital transformation

The flood of digital change continues full spate – and digital transformation, while a reality for some, remains distant for many. A period of hope and aspiration buoyed by smartphones and increasingly accessible broadband has now darkened somewhat as misuse of profiling and data commercialization in this age of hyper-connectedness have come to light.

While some still plead for unconditionally liberal markets, others call for caution, increased regulation and a rules-based digital order. Still others are supporting a third way – a new deal which champions shared perspectives and common responsibility and which strikes a robust balance between people’s rights and the technology that impacts so much on our everyday lives. This new deal seeks to fast forward digital transformation for all – and that ‘deal’ is embodied in *collaborative regulation*.

## Industry and regulators charting a common future

ITU forged ‘collaborative regulation’ in 2016 and have tested it annually at every Global Symposium for Regulators (GSR) since. While the concept continues to evolve, it can best be cast in 2019 as a framework to discuss the evolution of regulatory pattern and policy while charting the way ahead for industry and regulators as one constituency, towards digital transformation.

### Box 1: Collaborative regulation: a forward-looking concept

Collaborative regulation or 5th generation regulation (G5) is a broad notion that ITU has defined based on the concept of generations of ICT regulation (see Figure 1). It marks a fundamental shift in the way regulation is executed and the stakeholders that it brings together – from policy-makers, single-sector and multi-sector regulators to market players of any size. Collaborative regulation puts consumer benefits and protection in its focus and leverages the resources of government institutions and industry to deliver them, through organic consultation, collaboration and conciliation. Collaborative regulation is driven by leadership, incentive and reward rather than by command and control schemes. The concept also refers to the set of new tools used by regulators to tackle the issues related to digital transformation and the data economy.

Source: ITU, [2018 Global ICT Regulatory Outlook](#)

## Why do we need collaborative regulation?

All roads point to more collaboration, better channels and more bandwidth. But while the case for collaboration is irrefutable, progress has been stalled by power battles, lack of resources and misconceptions. Good progress towards inclusive, collaborative regulation is needed for the good of all users of digital services, now and into the future – a need borne out by four fundamentals:

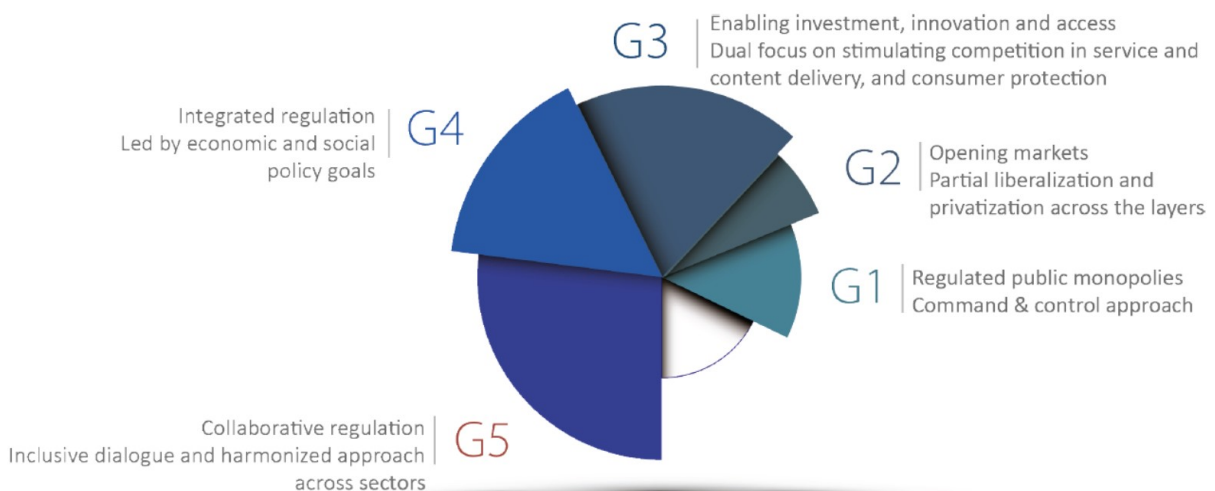
- **Digital transformation is a game changer**  
ICTs have moved far beyond the realm of simple ‘communications’. They have become the foundation for every economic sector and a sine qua non of business performance and national growth.

- **The new digital world needs a new take on regulation**  
ICTs can dramatically transform education, health care, environmental management, agriculture, trade and entrepreneurship, the provision of government services – and so much more. But enabling frameworks of policy and regulation, the right networks and services – all of these need to be put in place.
- **Holistic and harmonized approach can deliver greater impact**  
Silo-style ICT sector regulation isn't viable in the digital world. G5 regulation will mirror the interplay between digital infrastructure, services and content across industries and national borders. It will also harmonize rules and ensure consistent implementation of policy and regulatory frameworks that have evolved independently in many sectors over the years.
- **Development and inclusion have become a primary focus of regulation**  
Collaborative regulation is people-centred regulation – it looks at sustainability and long-term gains as opposed to industry profit maximization and exclusive economic growth. G5 champions are also engaged in connecting marginalized individuals, persons with disabilities, low-income communities, communities challenged by educational impoverishment, and remote or isolated populations which may also lack basic infrastructure such as electricity – so we need to be much more innovative and much more collaborative in our approach to policy-making.

[Generations of regulation: analysis tool and a roadmap for action](#)

The concept of ‘regulation generations’ helps us analyse the maturity of modern regulatory frameworks. The [ICT Regulatory Tracker](#) pinpoints changes taking place in the regulatory environment and tracks the progress of all countries’ regulatory oversight of telecommunication/ICT markets through generations one to four (see Figure 1).

**Figure 1: Generations of ICT regulation – conceptual framework**



Source: ITU

This new benchmark for fifth generation collaborative regulation complements and builds on the ICT Regulatory Tracker; it focuses on the G5 generation of regulation and identifies what is needed to

facilitate digital transformation across economic sectors. Both the Tracker and the G5 Benchmark correspond closely to guiding principles outlined in the ITU Best Practice Guidelines of GSR adopted by ICT regulators globally for close to two decades. These [Best Practice Guidelines](#) are considered to be the core of modern and future-facing ICT regulation. Table 1 below outlines the main characteristics and complementarities of the two metrics.

**Table 1: ICT Regulatory Tracker and G5 Benchmark side-by-side**

	<b>ICT Regulatory Tracker</b>	<b>G5 Benchmark</b>
<b>Focus</b>	Telecom/ICT regulation	Regulation for the digital economy
<b>Defines generations of regulation</b>	G1 through G4	G5
<b>Based on</b>	GSR Best Practice Guidelines	GSR Best Practice Guidelines & ITU research and analysis
<b>Number of indicators and maximum score</b>	50 (including 11 composite indicators); goalpost = 100	25 individual indicators; goalpost = 50
<b>Countries covered</b>	193	84 (G4 countries & top G3 tier)
<b>Structures</b>	4 pillars: - regulatory authority - regulatory mandates - regulatory regime - competition framework	3 tracks: - collaboration among regulators - policy design principles - G5 toolbox
<b>Data series</b>	2007-2018	2018/2019
<b>Data source</b>	ITU World Telecommunication/ICT Regulatory Survey + ITU research	ITU World Telecommunication/ICT Regulatory Survey + ITU research
<b>Data comparable over time</b>	Yes	Yes

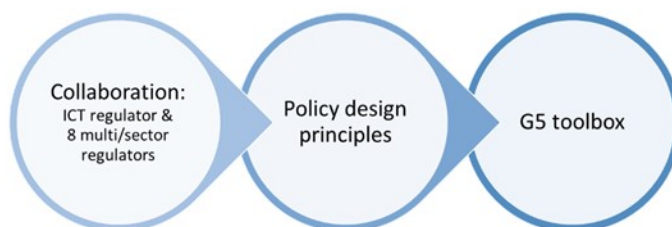
Source: ITU

### G5 Benchmark – fast-tracking collaborative regulation

We have identified the broad tracks for regulatory reform and have pinpointed how countries can work to leapfrog towards the next level – regulatory initiative and response.

The G5 Benchmark for collaborative regulation is built around 25 indicators. We expect its implementation to be pivotal in creating a digital market-place that is inclusive, sustainable and pro-development and a cornerstone of digital transformation. These indicators are clustered into three tracks: collaboration, policy design principles and G5 toolbox. The Benchmark builds further on the now established [ICT Regulatory Tracker](#).

**Figure 2: G5 Benchmark design**



Source: ITU

The G5 Benchmark occupies high ground, and affords perspectives on the regulatory road already travelled as well as on the pathways into the future. It:

- reflects how digital transformation is shifting regulatory perspective and patterns and the need for new tools;
- reveals regulatory gaps, and helps with building custom roadmaps for navigating the digital transformation;
- facilitates high-value debate on the future of markets and regulation, based on unbiased, non-judgmental evidence.

### The G5 Benchmark is needed – especially now

The G5 Benchmark arrives when regulators need it most. The following five elements explain why:

**1. Regulation is changing as digital markets mature**

Evidence suggests that digital development trajectories are shifting: economies in the course of digital transformation in this decade will follow a different path from those that did so earlier. The Benchmark is there to guide regulators through uncertain times – not to rank a country or calculate a score.

To borrow the emblem of ITU’s work on policy and regulation over the past 20 years, the fifth generation of regulation – and the G5 Benchmark – is like the lighthouse illuminating rough seas of digital technology phenomena and leading the way to a safe harbor for all.

**2. Existing metrics do not tell the whole story**

The Benchmark builds a shared and global perspective across all economic sectors and lays out clear regulatory tracks which ensure that digital markets thrive while achieving development goals.

**3. High-level policy design principles feature – for the first time**

The G5 Benchmark combines high-level principles and specific instruments, recognizing that G5 regulation is contextual, modular and multi-dimensional. Different layers of regulation are integrated to highlight the complexity of regulatory action in the digital age.

**4. Collaboration among sector/multi-sector regulators features – for the first time**

As set out in the Global ICT Regulatory Outlook 2018, collaboration among institutions is an essential ingredient for regulatory relevance, coherence and impact. The G5 Benchmark takes into account the breadth and depth of collaboration between the ICT regulator and sector-specific or multi-sector regulators.

**5. A benchmark is worth a thousand words**

The Benchmark is based directly on relevant indicators, enabling policy-makers easily to evaluate regulatory set-up and tools – comparing apples with apples. It facilitates the easy modelling of one country’s digital development experience in setting out strategy and decision-making for development and regulation.

## Looking ‘under the bonnet’ of the G5 Benchmark

We have identified three regulatory tracks which correspond to processes and practices facilitating digital transformation. For each track, metrics define the profile of digital regulation in G4 countries and in the upper G3 tier and will help them progress to G5 regulation. The three tracks are as follows:

1. **Collaboration** is the dominant element – the very watermark of G5 regulation. It measures the breadth and depth of cross-sector collaboration between the ICT regulator and her/his peers. This track factors in institutional set-up (agencies and their mandate) as well as practices around regulatory collaboration, formal and informal (see Table 2).

Digital regulation now occurs across a network of centres of expertise and enforcement. Shared focus and accountability among government agencies and stakeholders is replacing the ICT silo model, and the G5 Benchmark reflects this trend.

### Track 1: Collaboration

#### » Focus:

- Established sector or multi-sector government regulatory agencies for competition, consumer protection, finance, energy, broadcasting, spectrum management and Internet issues.
- Degree of regulatory collaboration between the ICT regulator and other regulatory agencies.

#### » Best-case scenario:

Combines the greatest number of agencies collaborating with the highest official status of collaboration.

2. **High-level principles:** as regulation shifts from rules to principles, the design of frameworks and what keeps them together have acquired especial importance. While rules will not disappear soon, principles are better suited for finding balanced, sound solutions, especially in complex areas. Today’s effective regulators will rely on sound policy principles, tried-and-tested institutional wisdom and a vanguard spirit – from infrastructure investment to consumer protection to data privacy, and any area where there are no good or bad responses.

### Track 2: Policy design

#### » Focus:

Policy design principles lay the foundation of collaborative regulation and define a new approach to market regulation, taking into account the broad economic and policy context.

» **Best-case scenario:**

The goalpost here is to have all nine high-level policy design principles enshrined in laws and regulatory decision through concrete tools that are:

- Forward-looking
- Holistic
- SDG-oriented
- Evidence-based
- Market-proof
- Incentive-based
- Innovation-based
- Inclusive
- Technology-neutral

3. **G5 regulatory toolbox:** to switch on the digital economy, regulators need new tools over and above the established instruments of modern regulation. Adapting old tools for use in digital markets which are leaping ahead is not sufficient. New consumer needs, business models and market dynamics call for retooling regulatory inventory and the development of coherent, outcome-oriented policy instruments.

Track 3: G5 toolbox

» **Focus:**

New market realities and the challenges they bring about require a new perspective and new tools. Policies that used to be ‘nice to have’ and formerly associated with developed countries have become a stepping-stone in leading the digital transformation.

» **Best-case scenario:**

The more these tools have been adopted and become functional, the greater the chances to create a safe place for digital experimentation and a safe experience for consumers.

The baskets of indicators corresponding to each of the three tracks are set out in Table 2.

**Table 2: Canvas for assessing countries’ readiness to leapfrog to the fifth generation of regulation**

<i>Track 1</i>	<b>Degree of collaboration between the ICT regulator and:</b>	
	1	Competition authority
	2	Consumer protection commission
	3	Data protection commission
	4	Spectrum agency
	5	Broadcasting regulator
	6	Financial regulator
	7	Energy regulator
	8	Internet agency
		<i>8 indicators/ max. score = 16 points</i>

<b>Track 2</b>	<b>Policy design principles</b>	
	9	Forward-looking * Digital strategy exists
	10	Holistic * Digital strategy spreads over multiple sectors
	11	SDG-oriented (or development in general) * Digital strategy SDG-oriented
	12	Evidence-based * Regulatory Impact Assessment (RIA)
	13	Market-proof * Regulatory space for digital experimentation such as sandboxes, pilots, new focus of regulation (AI, IoT, fintech)
	14	Incentive-based * Incentives for network operators
	15	Innovation-based * ICT Innovation policy
	16	Inclusive * Stakeholder input & engagement
	17	Technology-neutral * Spectrum licensing
		<i>9 indicators/ max. score = 18 points</i>
<b>Track 3</b>	<b>G5 toolbox: policies &amp; regulations</b>	
	18	Competition
	19	Data protection
	20	Cybersecurity
	21	e-Commerce/e-Transactions
	22	Digital financial services
	23	Accessibility
	24	Taxation of Internet services
	25	Infrastructure mapping
		<i>8 indicators/ max. score = 16 points</i>
<b>Total</b>		<i>25 indicators/ max. score = 50 points</i>

Note: The full methodological framework for the G5 Benchmark including indicator definitions is featured in Annex 1.

The G5 Benchmark encapsulates a vision where countries build their digital development path around their local and national priorities, and one where policy instrument configurations lead to the same goals. The Benchmark structure reflects the interplay of the three tracks – policy principles, tools and collaboration – with each track building on the others (see Figure 2 and Table 2). Overall, the Benchmark facilitates analysis of each country’s progress along the path towards the digital economy.



## G5 Benchmark – spotlighting the shifts in regulatory frameworks

Three features ensure the Benchmark has a laser focus on how regulatory frameworks are evolving: scope, clarity and objectivity.

- Its scope: it covers 80 economies from all regions and uses 2018-2019 data. These countries are on the glide path towards collaborative regulation. The Benchmark's uniquely wide scope and the ease with which it 'plugs in' to the ICT Regulatory Tracker make it a powerful tool to assess cross-sector regulatory frameworks and for conducting regulatory gap analysis.
- The Benchmark has a clear, straightforward methodology (see Annex 1). The 25 indicators at its heart are easily measurable, enabling policy-makers to check and update their country data and to run 'what-if' projections that measure policy impact. This ease-of-use also enables regulators to compare their level of maturity with peers, at similar and different levels of ICT development.
- The Benchmark is built on objective criteria and factual evidence, not on opinion, pundit commentary or other subjective data.

A snapshot of G5 Benchmark features is provided in Box 2.

The G5 Benchmark sifts through huge volumes of data to deliver an executive understanding of the digital regulatory landscape – and facilitates measured navigation through a landscape of fast-changing complexity. In particular it enables you to:

- **Monitor the evolution of regulation as digital markets mature**  
Monitoring policy and implementation ensures that countries promote a take-up of digital technologies that is broad-based and meaningful. Country profiles, together with regional and global trends, provide insight into how ready regulation is for the challenges of digital transformation – while gaps in policy and implementation are clearly visible. Building custom country roadmaps for collaborative regulation becomes easier.
- **Compare countries and analyse their paths towards regulatory maturity**  
The G5 Benchmark is unique in featuring high-level policy design and regulatory collaboration very much in a holistic, cross-sector context – essential for regulatory effectiveness. It becomes a valuable tool for benchmarking regulatory performance within and across countries. Together the three tracks enable you to look in-depth into a single track as well as looking at linkages across all tracks. You can also deconstruct each track to assess countries' strengths and areas for improvement, providing useful evidence on areas of priority for regulatory reform.
- **Construct complex models that explore the interplay between market take-up, regulation and development**  
The G5 Benchmark's holistic approach, its three digital regulation tracks and its modular structure, can be combined with other metrics to quantify the interplay between digitization and regulation, or the impact of regulatory decisions on market development. Such studies provide rich evidence to further inform policy-making in the digital age.

## Box 2: What's in a metric? A 360° overview of the Benchmark for collaborative regulation

### Structure & scores

The Benchmark for collaborative regulation and the ICT Regulatory Tracker are designed as complementary metrics to capture the transformation of regulatory frameworks.

The Benchmark therefore mirrors the scoring rationale of the Tracker and uses scores of 0 (absence), 1 (partial occurrence) and 2 points (presence of desired characteristic) for each indicator. Table 2 provides the scoring structure of the Benchmark.

**Table 2: Benchmark for collaborative regulation: structure and scores**

Track	Number of indicators	Maximum score (in points)
1. Collaboration	8	16
2. Policy design principles	9	18
3. G5 toolbox	8	16
Benchmark	25	50

### Countries and year

The dataset covers 84 countries (G4 and higher G3 tier), for 2018 (Track 1) and 2019 (Tracks 2 and 3).

### Data sources

The indicators come from two main sources:

- ITU World Telecommunication/ICT Regulatory Survey
- Desktop research based on official sources

### How to read the scores?

The Benchmark can be seen as a roadmap towards G5.

- Countries obtaining scores of 35 and higher (corresponding to 70 per cent of the reference frame goalpost) qualify as G5 regulatory champions.
- Countries obtaining scores of 25 to 35 points are the rising stars and are expected to join G5 next.
- Countries with scores lower than 25 need to continue enhancing and refining their regulatory frameworks, while turning to new tools and collaborative regulatory mechanisms.

### Going forward

The G5 Benchmark will be updated every two years to allow for tracking changes over time, both changes in absolute scores and changes in rankings relative to other economies. The future data series will provide a useful tool for measuring progress in narrowing the gaps in collaborative regulation between countries.

The full dataset as well as in-depth analysis on the findings of the first G5 Benchmark will be published in the 2019 edition of the Global ICT Regulatory Outlook.

Note: The full list of indicators and the detailed scoring rationale per indicator are available in Annex 1. The list of countries covered is in Annex 2.

Source: ITU

## G5 countries – movers, shakers... and some surprises

This first edition of the G5 Benchmark examines how mature ICT frameworks leverage cross-sector, collaborative regulation. While many ICT regulators have been watching how communication services have been reshaped by digital technologies and new business models, few have adapted to capture the benefits of digital flows in adjacent sectors – for example by expanding collaboration with other regulators, harmonizing rules or applying new policy design principles and tools. Nevertheless, we have identified sixteen G5 regulators forging ahead, demonstrating thought leadership and a holistic yet practical perspective (see Table 3) – and importantly, charting the route ahead for the many G4 and G3 regulators navigating towards collaborative regulation.

### Box 3: Understanding G5, a non-linear evolution of the regulatory approach from ICTs to digital

- Fifth generation or G5 regulation builds upon the solid foundation of G3 and G4 regulation; G5, however, isn't merely an upgrade of the G4 status.  
*G3 countries, along with G4, can leapfrog to G5.*
- G5 regulation is defined by more complex and diverse patterns. Tools and processes set G5 apart from previous generations, not the nature of its regulation.  
*In G1-G4, we assess the maturity of countries' competition frameworks for the ICT sector; in G5, the focus expands to competition in all sectors where digital underpins service delivery.*
- G5 is therefore seen as complementary to the previous generations – as a different paradigm – and G3 and G4 countries can join G5 for their outlook on digital markets.  
*G5 countries thus still belong under the G3 or G4 'brand' based on the maturity of their regulatory frameworks for the ICT sector, more narrowly.*

Some emerging insights are intuitive while others reveal more surprising trends across geographies, income groups and across countries at different levels of development (Table 3):

- Norway and Singapore lead the way to collaborative regulation with a score of 39 out of 50. Innovation and pro-active multi-stakeholder initiatives have paved their way to the top world spot.
- Europe performs strongly featuring ten of 16 G5 countries globally – not surprising as the region boasts the greatest number of G4 regulators. Europe is arguably the region with the highest level of regulatory harmonization across economies while a structured, coordinated traditional approach to policy-making is successful in shaping digital economies.
- Whilst G5 level countries mostly feature those transitioning from the G4 category, two previously G3 countries make it directly into G5. Japan achieves second highest world score in the G5 Benchmark despite its 106<sup>th</sup> rank in the ICT Regulatory Tracker. Albania comes 4th in the G5 Benchmark while ranking 69 on the Tracker. Both countries demonstrated innovation in boosting digital markets while retaining a traditional approach to ICT regulation.
- Of the world's top ten most mature ICT regulatory frameworks, only Norway and UK are G5. They have consistently built synergies between ICT regulation on the one hand, and digital services, on the other.
- While few of the most mature ICT regulatory countries have shifted to collaborative regulation, countries like Estonia and Kenya have been skillful in prioritizing regulatory reforms which benefit the broader digital economy, not the ICT sector alone.

- Six countries from outside Europe join the G5 group distinguishing themselves through regulatory initiatives enabling digital markets to deliver better services and higher value to consumers: Brazil, Canada, Japan, Kenya, Morocco and Singapore.

Table 3: G5 countries, by score, rank and compared to the ICT Regulatory Tracker

G5 Benchmark 2019				ICT Regulatory Tracker 2018	
	Country	Score	Rank	Tracker Rank	Gen
1	Norway	39	1	3	G4
2	Singapore	39	1	26	G4
3	Japan	37	2	106	G3
4	Estonia	37	2	47	G4
5	United Kingdom	37	2	4	G4
6	Canada	37	2	58	G4
7	Kenya	37	2	45	G4
8	Croatia	36	3	11	G4
9	Romania	36	3	23	G4
10	Spain	36	3	52	G4
11	Germany	36	3	16	G4
12	Albania	35	4	69	G3
13	Brazil	35	4	36	G4
14	Netherlands	35	4	19	G4
15	Sweden	35	4	33	G4
16	Morocco	35	4	36	G4

Source: ITU

### Breaking it down track by track – more surprising insights

The insights set out below help identify current trends and emerging patterns as regulation evolves, providing valuable evidence of best practice. These G5 Benchmark insights help build a canvas for evidence-based decision-making and for developing fit-for-purpose regulation for digital markets.

Different paths to collaborative regulation (Table 4) emerge as the G5 Benchmark examines the top-scoring countries track by track:

#### Collaboration

- The countries ranked as top three in this track represent three different regions – Africa, Asia-Pacific and Europe – underlining the universal value of collaboration in regulating digital markets.
- Many countries lack mechanisms that connect the ICT regulator with financial or data protection regulators (55 and 52 countries).
- The great majority of countries have collaboration mechanisms in place for spectrum management and broadcasting regulation (78 and 71 countries), followed by competition issues (60 countries).
- Formal collaboration occurs most often in broadcasting and spectrum management while informal collaboration more often occurs in relation to competition and consumer protection authorities.

**Policy design principles and their implementation:**

- 90 per cent of countries surveyed (73 countries) have adopted digital strategy. 51 countries’ strategies are holistic in scope and address interplay across digital markets. Only 16 countries have clear references to the SDGs and link development goals with global priority areas. While many strategies pre-date SDG adoption, incoherence across national and global frameworks will pose a challenge in harmonizing cross-border digital markets.
- Almost half of countries (41) have a space for digital experimentation, providing a testbed for new technologies and services before fully launching them commercially. In this group, we count regulatory sandboxes and pilot initiatives as well as regulation of new and emerging phenomena such as fintech, Artificial Intelligence and the Internet of Things.
- Around 30 countries are using targeted regulatory incentives for regulators; however only in half of these have such incentives been translated into concrete, targeted measures.

**G5 tools for holistic regulatory oversight:**

- Between 80 and 90 per cent of surveyed countries have adopted holistic policies for competition, mobile financial services and cybersecurity. This underlines the critical role these elements play in digital transformation.
- Most countries have introduced forward-looking competition policies and data protection laws, safeguarding both providers and consumers.
- Over recent years, many countries have adopted regulatory frameworks for ICT accessibility for persons with disabilities, a foundation for digital inclusion across the board. This is the case for three-quarters of surveyed countries.
- Despite a consensus on the importance of digital services, 45 countries still have taxes on Internet services, raising additional barriers to service provision and adoption. Taxation remains an area for scrutiny and regulatory action in many developing countries.

**Table 4: G5 Benchmark top countries, by track, 2019**

Rank	Collaboration	Score
1	Singapore	13
1	Botswana	13
3	Norway	12
3	United Kingdom	12

Max score: 16

Rank	Principles	Score
1	Kenya	17
2	Japan	17
3	Bulgaria	16

Max score: 18

Rank	G5 toolbox	Score
1	Canada	16
1	Spain	16
1	Romania	16
1	Germany	16
1	Greece	16
1	Ireland	16
1	Sweden	16

Max score: 16

Source: ITU

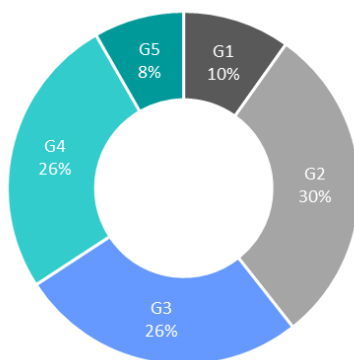
The G5 Benchmark allowed us to cover the full array from G1 through G5. The current snapshot of regulation maturity of regulation for ICT and beyond is highlighted in Box 4.

#### Box 4: Generations of regulation – where do we stand in 2019?

The Benchmark also allows us to draw a full picture of the current level of maturity of regulatory frameworks for the ICT sector and beyond, for the digital economy (Figure 3):

- While in the majority of countries worldwide, or nine out of ten countries, regulation still deals with ICTs as a separate economic sector, a lead group of 8 per cent now has holistic, forward-looking regulatory frameworks enabling digital transformation across the economy.
- One-third of all countries have achieved G4, integrated ICT regulation led by social and economic goals. These are the countries with the lowest proportion of unconnected population and have thriving markets for ICT services. The small group of G5 countries is also part of this group, embracing digital and taking their whole economies to the next level.
- One-quarter of countries are only half way through their journey, making steady progress in strengthening policy and regulatory frameworks while being unable to unlock the full potential of ICT markets.
- More than half of world's population is concentrated in G2 and G3 countries, poised to leapfrog to near universal digital inclusion and lead vibrant ICT markets.
- As many as 40 per cent of countries are still in G1 or G2, missing development opportunities and running the risk of remaining disconnected from global digitization and transformation of their economies.

Figure 3: Generations of regulation, breakdown, world, 2018



Source: ITU

#### Opportunity awaits regulators who embrace collaboration

Increasing numbers of countries are embracing the new approach to collaborative regulation. While opportunities associated with digital transformation are undeniable, most countries still face quite a journey in getting there. Such opportunities await those government regulators who sit down with peers from different economic sectors and embrace collaborative regulation, meeting the challenges ahead openly and holistically.

### Feedback loop and living Benchmark

The G5 Benchmark is based on data provided by ITU Member State Administrations through annual ITU surveys. Additional research was carried out to complement the dataset.

The Benchmark is set to evolve and we invite ITU Members to provide their comments, views, suggestions or questions on its methodology and structure. We will continue the conversation beyond GSR19 and count on Members to provide contributions to enhance the tool. Please contact us at [treg@itu.int](mailto:treg@itu.int).

Based on comments received and updates to the Benchmark, ITU will publish a full-fledged analysis on it in the 2019 Global ICT Regulatory Outlook.

## Annex 1: Note on methodology: G5 Benchmark composition and scoring rationale

Track	Indicators	Coding guidelines	Remarks
<i>Institutional collaboration</i>	Collaboration with competition authority	Memorandum of understanding or joint program/committee = 2 Semi-formal and informal collaboration = 1 No mechanism for collaboration/No data = 0	For spectrum, broadcasting and energy – when no separate regulator exists but the ICT regulator has explicit mandate to cover that area, score = 2
	Collaboration with consumer protection authority		
	Collaboration with data protection authority		
	Collaboration with spectrum agency		
	Collaboration with broadcasting authority		
	Collaboration with financial regulator		
	Collaboration with energy regulator		
	Collaboration with the agency in charge for Internet-related issues		
			<i>Max score: 16</i>
<i>Policy Design Principles</i>	Is there a digital strategy in place?	Yes = 2 Digital strategy is being planned, digital strategy is part of a broader development strategy, only specific plans such as e-government strategy existing or not clearly implemented = 1 No = 0	Is there evidence of a document containing a plan or strategy to develop the digital economy or sector?
	Is the digital strategy SDG-oriented?	Has a digital transformation/development strategy plan which explicitly mentions SDGs = 2 No explicit mention of SDGs = 0	Mention of SDGs in the digital strategy statement/document is required.
	Does the digital strategy include multiple sectors of the economy?	Yes = 2 Not clearly expounded = 1 No = 0	E.g. government, health, education, finance etc.
	Is there a formal requirement for Regulatory Impact Assessment (RIA) before regulatory decisions are made?	Yes = 2 No = 0	
	Are there mechanisms for regulatory experimentation?	Yes = 2 No = 0	Does the ICT regulator have a sandbox, allows pilots of or



		demonstrates awareness of emerging tech and exploring ways to regulate, e.g. AI, IoT, fintech?
Are there regulatory incentives targeted at network operators?	Regulatory incentives for all operators = 2 Regulatory incentives for specific operators = 1 No = 0	e.g., reduced regulatory fees, tax holidays, longer/cheaper licences
Is there an innovation policy for the ICT sector?	Yes = 2 Planned or not clearly implemented = 1 No = 0	
Does the regulator uses public consultations to guide regulatory decision-making?	Public consultation are required by law prior to major regulatory decisions, has clear timelines and process for undertaking public consultation, and the regulator incorporates results in their decision-making = 2 Public consultation is required by law prior to regulatory decisions but there is no requirement or it is not clear what the timeline and process is and whether the regulator incorporates results in their decision-making = 1 Public consultation is not undertaken or required by law/No data = 0	
Are spectrum licenses technology neutral?	Yes = 2 There are exceptions to which bands of the spectrum are technology neutral = 1 No = 0	
Is there a forward-looking competition policy applied to digital markets?	Yes = 2 No = 0	<div style="border: 1px solid gray; padding: 2px; display: inline-block;">Max score = 20</div> <p>Is competition policy being applied not only to telcos but also to other digital markets like content providers and digital platforms? This could be ex ante and ex post, such as merger approval and investigation.</p>

Are there data protection rules?	There is a general data protection law and a data protection agency has been established = 2 There is a data protection law but either: i) a data protection agency has not yet been established, ii) the data protection law is not yet implemented, or iii) the law covers only a limited number of activities = 1 No data protection law or regulations yet = 0	
Is there cybersecurity legislation or regulation?	Yes = 2 Partial coverage = 1 No = 0	
Are there policies and regulations for e-commerce/e-transactions?	Yes = 2 Rules at regional level (e.g., EU) but has not yet formulated national rules to match or no monitoring and enforcement of rules or has limited provisions = 1 No policies rules = 0	
Are there policies and regulations for digital financial services/electronic money?	Yes = 2 No policies or rules = 0	
Have you established a regulatory framework to ensure ICT accessibility for persons with disabilities?	Yes = 2 No clear evidence/enforcement or partial = 1 No = 0	
Are there specific taxes on Internet services?	Laissez faire/No taxes = 2 Yes = 0	Taxes can be interpreted as restrictions on Internet diffusion and innovation
Does an official register or a mapping exist in your country of all telecommunication/ICT infrastructure?	Yes = 2 Yes, but only for some infrastructure or evidence is not clear = 1 No = 0	
		Max score = 18
		Total score = 50

## Annex 2: List of countries in the G5 Benchmark 2019

	Country	Generation*
1	Albania	G3
2	Argentina	G4
3	Australia	G4
4	Austria	G4
5	Bahamas	G4
6	Bahrain	G4
7	Belgium	G4
8	Bosnia and Herzegovina	G4
9	Botswana	G4
10	Brazil	G4
11	Bulgaria	G4
12	Canada	G4
13	Chile	G3
14	China	G2
15	Colombia	G3
16	Costa Rica	G4
17	Croatia	G4
18	Cyprus	G4
19	Czech Republic	G4
20	Denmark	G4
21	Dominican Rep.	G4
22	Ecuador	G4
23	Egypt	G3
24	Estonia	G4
25	Finland	G4
26	France	G4

27	Georgia	G4
28	Germany	G4
29	Ghana	G4
30	Greece	G4
31	Honduras	G3
32	Hungary	G4
33	Iceland	G4
34	India	G3
35	Indonesia	G3
36	Iran (I.R.)	G3
37	Ireland	G4
38	Italy	G4
39	Jamaica	G3
40	Japan	G3
41	Jordan	G4
42	Kenya	G4
43	Korea (Rep.)	G3
44	Latvia	G4
45	Lithuania	G4
46	Malawi	G4
47	Malaysia	G4
48	Malta	G4
49	Mexico	G4
50	Moldova	G4
51	Monaco	G4
52	Mongolia	G2
53	Montenegro	G4

54	Morocco	G4
55	Netherlands	G4
56	New Zealand	G3
57	Nigeria	G3
58	Norway	G4
59	Oman	G4
60	Pakistan	G4
61	Panama	G4
62	Peru	G4
63	Poland	G4
64	Portugal	G4
65	Romania	G4
66	Rwanda	G3
67	Saudi Arabia	G4
68	Senegal	G4
69	Serbia	G4

70	Singapore	G4
71	Slovakia	G4
72	Slovenia	G4
73	South Africa	G3
74	Spain	G4
75	Sweden	G4
76	Switzerland	G4
77	Tanzania	G4
78	Thailand	G3
79	Trinidad and Tobago	G4
80	Turkey	G3
81	Uganda	G4
82	United Arab Emirates	G4
83	United Kingdom	G4
84	United States	G4

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