COLLABORATIVE REGULATION CASE STUDY

ROMANIA

ITU Regional Initiative for Europe on Broadband Infrastructure, Broadcasting and Spectrum Management

Final Draft

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- The Authority for the Digitalization of Romania (ADR)
- National Association of Mobile Operators (AOMR).

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1. Introduction

Economic backdrop: post-COVID-19 recovery

After recovering from the worldwide financial crisis of 2008, Romania demonstrated stable economic growth for almost a decade – it experienced the expansion of its economy by an average of 3.9 per cent annually during the period from 2011 to 2019.[1] The global pandemic of 2020, however, pushed the country into recession – the Romanian economy has contracted by 3.9 per cent.

The strength of its recovery will depend on many factors. According to a study by the International Telecommunication Union (ITU), countries with better broadband infrastructure and with broad use of ICTs among the population were able to mitigate part of the negative economic impact of COVID-19, allowing households, enterprises, and governments to continue their daily engagements during that time; these countries are also better equipped for the recovery phase.[2] In this regard, Romania is in an advantageous position post-COVID-19, having extensive high-quality digital infrastructure – including one of the highest penetration rates for ultra-fast broadband in the European Union (EU). Additionally, aspirations for fast recovery are linked to Romania's Recovery and Resilience Plan and significant financial support coming from EU funds.[3]

These components – accessibility and uptake of high-quality infrastructure, and availability of financial resources – not only create an opportunity for the country to recover quickly from the pandemic crisis[4] and to improve its standing in the EU Digital Economy and Society Index (DESI),[5] but, importantly, accelerate the growth of its digital economy. According to estimates, the digital economy in Romania could grow to represent 20 per cent by 2025, becoming a driving force and cross-cutting pillar for socio-economic development.[6] However, realizing this potential will require the joint efforts of a range of stakeholders: policy-makers and regulators will need to provide timely incentives and create a favourable eco-system for the adoption of digital technologies in both public and private sectors; the private sector must adopt digital tools to boost its productivity and reach of markets; and individuals will need to continuously upskill to take full advantage of the new digital environment.

G5 collaborative regulation: fast forwarding digital transformation for all

In the context of these all-encompassing changes, a new regulatory paradigm has emerged that seeks to fast forward digital transformation for all – and that paradigm is embodied in the concept of collaborative regulation. Collaborative regulation, or fifth generation (G5) regulation, is a broad notion that ITU has defined based on the concept of generations of ICT regulation (see **Box 2**). It marks a fundamental shift in the way regulation is executed with its holistic policy ground and the stakeholders that it brings together – from policy-makers, single-sector and cross-sector regulators to market players of any size. It also shifts

[1] GDP growth (annual %) - Romania | Data (worldbank.org)
[2] ITU, The Economic Impact of Broadband and Digitization through the Covid-19 pandemic - Econometric Modelling, 2021
[3] Recovery and Resilience Facility (europa.eu)
[4] The economy is projected to grow at around 5.1 per cent in 2021.
[5] Romania ranked 26th in 2020, according to the EC, DESI - Romania | Shaping Europe's digital future (europa.eu)
[6] https://www.mckinsey.com/featured-insights/europe/the-rise-of-digital-challengers-perspective-on-romania

the regulatory focus on behaviours and impact on markets and development. G5 regulation forces the reconsideration of existing institutional frameworks and the harmonization of policy priorities and regulatory rules in recognition of the interplay between digital infrastructure, services and content across industries and national borders. Romania is currently situated in the G4 regulation category. Many elements are in place that support a collaborative approach and digitalization of its economy yet a number of missing links remain. The objective of this paper is thus two-fold: i) to analyse Romania's current institutional and regulatory framework to understand how it reflects principles and nature of collaborative regulation; and ii) to highlight areas of strength and possible improvements in relation to its progression towards digital transformation and G5 collaborative regulation. It further proposes a series of six inter-related measures for Romania to consider that would unlock potential and allow for rapid gains on its journey toward these goals.

The analysis and results are based on publicly available information (reports, legal acts, studies) and information obtained during interviews with stakeholders from Romania's public and private sector (see **Box 1** and Annex 1). Gathering information from different perspectives has allowed us to spotlight strengths and opportunities for the country, while identifying areas for further consideration.

Box 1. ***Collaborative Regulation Case Studies: The methodology***

To better understand the role and impact of collaboration and collaborative governance, ITU has launched a series of Collaborative Regulation Case Studies. They focus on regulatory and institutional frameworks and on collaborative governance in countries across different regions. The case studies detail diverse experiences and varied policy and regulatory patterns, and set out challenges, new ideas and lessons learnt by regulators as they journey towards G5 collaborative regulation. Each case study follows a similar methodology, is tailored to each region's needs and has been achieved through close cooperation by all parties involved. Each case study is built on two components:

A 50-question survey on fifth generation regulation that explores collaboration across government agencies and ministries, the scope and patterns for collaboration, the involvement of other stakeholders and legal tools, policy tools and processes; and

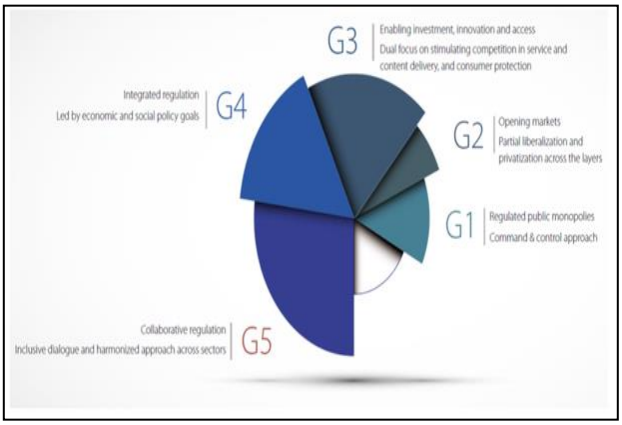
Multiple interviews with key national stakeholders – including representatives of the national regulatory authority, a relevant ministry, and a private sector player or consumer association. Interviews were flexible but structured to explore practical aspects of policy implementation and regulatory reform.

The case studies set out the current policy, regulatory and governance landscape in the country, with focus on current best practice and areas for future enhancement.

Section 2 of this study provides an overview of broadband market developments in Romania, while Section 3 analyses country's digital policies and strategies. Section 4 focuses on institutional framework and inter-agency collaboration and Section 5 briefly describes vertical collaboration (i.e. collaboration between public and private sectors). Section 6 provides recommendations for the country's progression towards digital transformation and collaborative regulation. Finally, the conclusion sums up key results.

Box 2. Collaborative regulation

The ability to successfully collaborate is one of the key building blocks of a digital economy, and a key marker of a fifth generation (G5) regulator. *Collaborative regulation* or G5 regulation is the ITU "generations of regulation" framework for the maturity of modern ICT regulatory regimes. The framework is based on a view of 1) collaboration; 2) high-level principles; 3) focus on digital development; and 4) the digital economy policy agenda. According to the ITU:



(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 that play a role in the digital economy;

(2) As regulation shifts from rules to principles, the design of frameworks and what keeps them together have acquired special importance. While rules will and should not disappear soon, in some instances, principles are better suited for finding balanced, sound solutions, especially in complex areas;

(3) New consumer needs, business models and market dynamics call for retooling regulatory inventory and the development of coherent, outcome-oriented policy instruments to support digital development;

(4) Through disruption of markets and the rise of new technologies, building an inclusive digital economy is a top goal on national policy agendas. The success of their implementation will have a multiplier effect on the digital transformation of economies and their sustainability in the future.

RATIONALE FOR GENERATIONS OF REGULATION

Source: ITU.

	1. Regulatory authority	2. Regulatory mandate	3. Regulatory regime	4. Competition framework
G1	• Consolidated with policy-maker and/or industry	• Business as usual	• Doing as we have always done	• State-owned monopoly
G2	• Separate agency	• First wave of regulatory reform	• Doing more	• Liberalization
G3	• Separate agency, autonomous in decision-making	• Advanced liberalization of ICT sector	• Doing the right things	• Partial competition
G4	• Separate agency with enforcement power	• Adjacent issues become core mandate	• Doing the things right	• Full competition
G5	• Separate agency as part of a network of partner regulators	• **Active collaboration across the board**	• Doing things together	• Intra-modal competition

Source: ITU

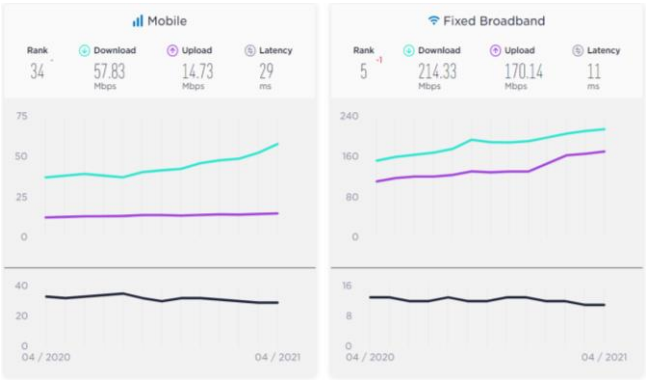
2. Broadband market developments

High quality communications networks are at the heart of the digital economy which strongly depends on networks' coverage, capacity, quality, and reliability. Digital transformation can only be realized if high quality networks are available at affordable prices. Therefore, it is important to understand the status of broadband developments in Romania in terms of availability, affordability and quality.

Coverage and penetration. Romania performs very well in terms of connectivity, with well-developed mobile and fixed broadband networks. According to data from the European Commission (EC), 4G mobile network coverage reached 100 per cent of households in 2020, while 3G mobile broadband networks covered all households years ago. Mobile broadband penetration, calculated as number of broadband subscriptions per 100 inhabitants, was 89.3 per cent at the end of 2020,[7] which is lower than the EU average (104 per cent[8]), but higher than the global average (75% per cent[9]). As per data from ANCOM, the mobile broadband market in Romania is shared between Orange – 38%, followed by Vodafone – 25 %, RCS&RDS – 19 % and Others – 18 % in June 2020.[10]

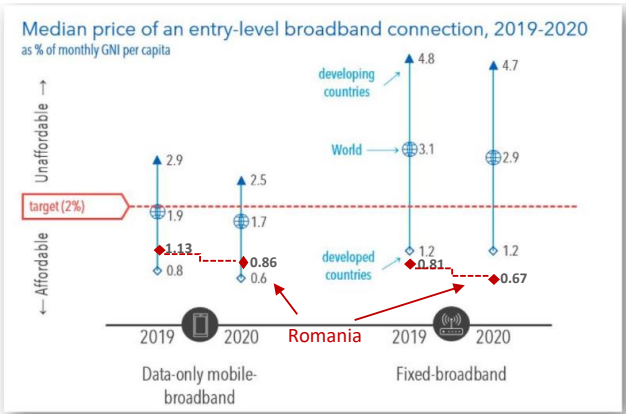
EC data also finds that fixed broadband coverage reached 90 per cent of total households in Romania and 87 per cent of households were covered by NGA networks in 2020.[11] Thirty-nine per cent of households in rural areas were covered by ultra-fast broadband, which largely outperforms the EU average of 20 per cent. The uptake of fixed broadband reached 67 per cent of households (26.4 per cent if calculated per 100 inhabitants), 49 per cent of Romanian homes subscribed to ultra-fast (at least 100 Mbps) broadband (the fifth highest figure in the EU) in 2020.[12] The incumbent operator faces strong competition from operators entered subsequently in the market. In 2020 new entrants' share in fixed broadband subscriptions (as % of fixed broadband subscriptions) reached 83 per cent and was the highest figure across the EU.

Figure 1. Romania's average speeds of mobile and fixed broadband, April 2021



Source: Speedtest Global Index

Figure 2. Median prices (as % of monthly GNI per capita) of broadband connections, 2019-2020



Source: ITU and the Alliance for Affordable Internet (A4AI), 2020

[7] Country ranking table, on a thematic group of indicators — Digital Scoreboard - Data & Indicators (digital-agenda-data.eu)
[8] Country ranking table, on a thematic group of indicators — Digital Scoreboard - Data & Indicators (digital-agenda-data.eu)
[9] ITU-D ICT Statistics
[10] https://statistica.ancom.ro/sscpds/public/files/217_ro (Fig. III.1.6.)
[11] Country ranking table, on a thematic group of indicators — Digital Scoreboard - Data & Indicators (digital-agenda-data.eu)
[12] DESI - Romania | Shaping Europe's digital future (europa.eu)

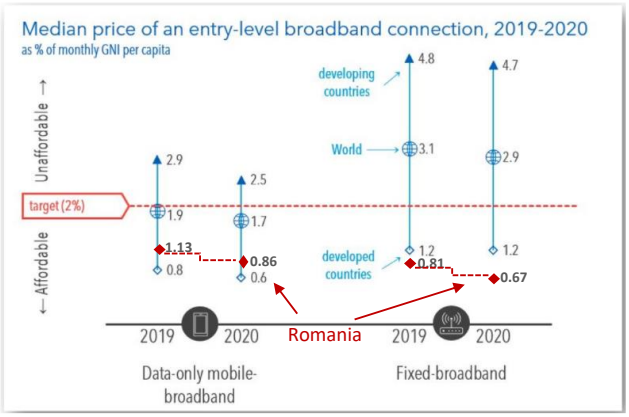
Average speed. Romania is one of the countries with the highest Internet speed globally (see). According to the Speedtest Global Index, which provides a monthly comparison of Internet speed data for a benchmark of 100 countries, Romania is ranked 34th in terms of mobile broadband speed with download speed of 58Mbps, compared to the global average of 53Mbps, and is ranked fifth in terms of fixed broadband speed, with download speed of 214Mbps – higher than the global average of 102 Mbps.[13]

Affordability. The competitive situation in the fixed and mobile broadband markets reflects in the affordability level of broadband services. According to data from ITU and the Alliance for Affordable Internet (A4AI),[14] prices of broadband connections in Romania are among the lowest worldwide (see *Figure 2*). Expressed as a percentage of median GNI per capita, prices for the data-only mobile-broadband basket in 2020 were 0.86 per cent of monthly GNI per capita in Romania, which is significantly below the 2 per cent affordability target of the Broadband Commission for Sustainable Development. The fixed-broadband basket was even more affordable with 0.67 per cent of monthly GNI per capita (unlike the global level, where fixed broadband is less affordable than mobile broadband).

Figure 1. Romania's average speeds of mobile and fixed broadband, April 2021

Source: Speedtest Global Index

Figure 2. Median prices (as % of monthly GNI per capita) of broadband connections, 2019-2020



Source: ITU and the Alliance for Affordable Internet (A4AI), 2020

While Romania is advanced on broadband network coverage – the country lags behind in digital skills[15] and use of Internet services indicators,[16] and has a weak performance in the digitization of businesses and in digital public services. Figure 3 shows that throughout 2019, less than 10 per cent of the population aged 16-74 had digital interaction with public authorities. This puts Romania in the lower tier among EU Member States when it comes to digitalization, confirming that access is necessary but not sufficient for further digital evolution.

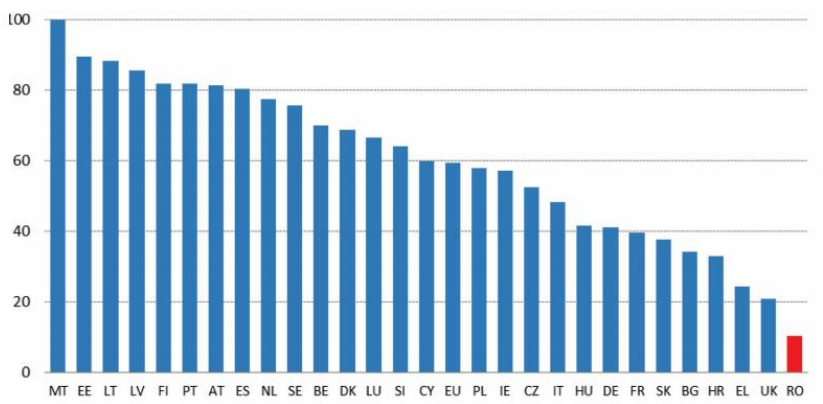
Figure 3. Individuals aged 16-74 (%) who have used the Internet in interaction with public authorities in the last 12 months, 2019

[13] Speedtest Global Index – Monthly comparisons of internet speeds from around the world

[14] https://www.itu.int/en/ITU-D/Statistics/Pages/ICTprices/default.aspx

[15] Less than one-third of people aged between 16 and 74 have at least basic digital skills, compared to the EU average of 58%; 35% of Romanians have at least basic software skills, against an EU average of 61%.

[16] Almost one-fifth of Romanians have never used the Internet (18%), or online banking (11%) and shopping (29%); Romania ranks the lowest among EU Member States for digitalization.



Source: Eurostat

International perspective. Romania ranks 49th in the **IMD Digital Competitiveness Index** Ranking 2020 (moving down from 46th in 2019).[17] Romania's competitive digital assets are measured by the speed of Internet in broadband (10th in the ranking), the share of graduates in science (13th), and the share of women in scientific research (15th in this ranking). Romania's competitive digital disadvantages are due to a number of reasons, including the shortage of public-private partnerships, insufficient knowledge transfer between companies, etc.[18]

Similar findings may be found in other international metrics, summarized in Table 1:

- ICT infrastructure is Romania's main strength and is usually highly ranked (demonstrating adequate availability, accessibility and affordability of broadband connectivity);
- Main indicators that lower Romania's position in comparison to other countries include: 1) lack of political stability and long-term vision in governmental decisions; 2) insufficient innovation capacity and an immature innovation ecosystem (e.g. R&D expenditure, growth of innovative companies); 3) mismatch of skills of current workforce; 4) lack of trust in digital technologies (e.g. low use of online banking); and 5) lack of trust in collaboration and partnership (e.g. shortage of public-private partnerships, university-industry cooperation).

Table 1. Romania's position in some international rankings

Index	Organization and year	Rank of Romania	Strengths	Weaknesses
Global Competitiveness Index 4.0[19]	An annual assessment of the drivers of productivity and long-term economic growth. The pillars, which cover broad socio-economic elements are: institutions, infrastructure, ICT adoption, macroeconomic stability, health, skills, product market, labour market, the financial system, market size, business dynamism and innovation capability.			
	WEF, 2019	51 of 141	ICT adoption (rank 32)	Government ensuring policy stability (rank 126); Government long-term vision (113); Skills of current workforce (106); Time to start business (123); Businesses attitude towards entrepreneurial risk (111)
5G Readiness Index[20]	Evaluates European countries' readiness to deploy and adopt 5G networks. The Index comprises six factor categories with 35 criteria in total within those categories.			

[17] IMD World Digital Competitiveness Ranking 2020
[18] IMD World Digital Competitiveness Ranking 2020
[19] http://www3.weforum.org/docs/WEF_TheGlobalCompetitivenessReport2019.pdf
[20] https://www.incites.eu/europe-5g-readiness-index

	inCITES Consulting, 2020	27 of 39	Country's profile (economic state of a country, competition in network services) Infrastructure and technology (existing fixed and mobile infrastructure, preparatory steps towards deploying the new technology)	Innovation landscape (R&D expenditure, growth of innovative companies, university-industry cooperation and etc.); Insufficient legal framework's adaptivity to digital business models and mismatch of skills
Network Readiness Index[21]	Index assess how countries are leveraging information technologies to be future-ready. Index is grounded in four fundamental dimensions: technology, people, governance and impact.			
	Portulans Institute, 2020	49 of 134	Mobile tariffs, e-commerce legislation, handset prices	Rural gap in use of digital payments; Socioeconomic gap in use of digital payments; and Investment in emerging technologies
E-Government Development Index[22]	Reflects state of E-Government Development. It is a composite of three dimensions of e-government, namely: provision of online services, telecommunication connectivity and human capacity.			
	UN, 2020	55 of 193	Telecommunications infrastructure index	Online service index
E-Participation Index[23]	Focuses on the use of online services to facilitate provision of information by governments to citizens ("e-information sharing"), interaction with stakeholders ("e-consultation"), and engagement in decision-making processes ("e-decision making").			
	UN, 2020	46 of 193	Qualitative evaluation, no details available	
UNCTAD B2C E-commerce Index, 2020[24]	The UNCTAD B2C E-commerce Index measures an economy's preparedness to support online shopping. The Index consists of four indicators that are highly related to online shopping and for which there is wide country coverage.			
	2020, UNCTAD	53 of 152	Postal Reliability Index	Account ownership at a financial institution or with a mobile-money-service provider (% of population age 15+)
Global Innovation Index[16]	Measures an economy's innovation performance.			
	2020 WIPO	46 of 131		
Global Cybersecurity Index[25]	Measures the commitment of countries to cybersecurity.			
	2018 ITU	72 of 175		
Corruption Perception Index[26]	Ranks 180 countries by their perceived levels of public sector corruption according to experts and the business community.			
	2020 Transparency international	69 of 180		

Source: ITU research

Overall, Romania is progressing towards the digitalization of its economy; however, progress has been slow as Romania has experienced several different governments over the last few years. The potential to accelerate growth – and benefit from the digital economy – is here (see **Box 3**); achieving this transformation will require the involvement and concerted efforts of all stakeholders (institutions, market players, individuals).

Box 3. *The city of Bucharest – the best city in the world for the remote working*

[21] https://networkreadinessindex.org/#nri
[22] https://publicadministration.un.org/egovkb/en-us/Data/Country-Information/id/140-Romania
[23] https://publicadministration.un.org/egovkb/en-us/Data/Country-Information/id/140-Romania
[24] https://unctad.org/system/files/official-document/tn_unctad_ict4d17_en.pdf
[25] https://www.itu.int/dms_pub/itu-d/opb/str/D-STR-GCI.01-2018-PDF-E.pdf
[26] https://www.transparency.org/en/cpi/2020/index/nzl

According to the Remote Working Index, which ranks 50 of the world's most popular cities for remote working, Bucharest is considered as the best city in the world to work from home because of its low cost of living, reliable and high-speed Internet, and a high percentage of remote working jobs.

	City	Country	Uber Eats	Deliveroo	Remote Working Jobs (%)	Cost of MacBook (£)	Internet Speed (Mbps)	Cost of Living (£)
1	Bucharest		✓	✗	4.33%	£1,444.52	52	£421.32
2	Houston		✓	✗	2.76%	£1,212.39	61	£710.12
3	Las Vegas		✓	✗	3.08%	£1,212.39	36	£714.98
4	Atlanta		✓	✗	2.84%	£1,212.39	45	£807.60
5	Budapest		✗	✗	2.33%	£1,552.09	41	£470.39

Source: The Best and Worst Cities for Remote Working | Broadband Deals

3. Overview of existing strategies and policies

Romania's vision for digital transformation

Romania's ICT vision is set out in the National Strategy on the Digital Agenda for Romania 2020; the National Plan for Next Generation Network infrastructure development; and the National Strategy for the Implementation of 5G.

In February 2015 Romania adopted its **National Strategy on the Digital Agenda for Romania 2020** setting out four areas of action[27]:

1. e-Government, Interoperability, Cyber Security, Cloud Computing and Social Media – which aimed to modernize the Romanian public sector by making it more efficient and fit for purpose;

2. ICT in education, culture and health –which aimed to support these technologies at the sectoral level;

3. ICT in e-commerce, and research, development and innovation in ICT – which aimed to increase Romania's competitiveness at the regional level, and foster growth in the private sector;

4. Broadband and digital infrastructure services – which aimed at ensuring inclusive connectivity across the country.

The Digital Agenda for Romania 2020 aimed at achieving coverage of 100 per cent of households with fixed broadband by 2020, 80 per cent of households with access to over 30 Mbps broadband and 45 per cent of households with subscriptions over 100 Mbps. It also established indicators for Internet usage and public services.[28] According to estimates from the Romanian Government, full implementation of the strategic vision was expected to generate a total investment of around EUR 2.4 billion until 2020, a significant increase in the country's GDP and number of jobs, and a decrease in administration costs.[29]

[27] Agenda Digitală pentru România 2020 – MCSI (gov.ro)

[28] - At least 35% of people use e-government systems;
- At least 60% of citizens use the Internet regularly;
- At least 30% of citizens make purchases online.

[29] The Romanian Government calculated that the direct and indirect impact on the economy could be GDP growth of 13%, increase in the number of jobs by 11% and a cut in administration costs by 12% during 2014-2020.

Within the framework of the Digital Agenda, a number of regulatory incentives were created to move closer to national goals (see **Box 4**).

Box 4. Tools and mechanisms to support digitalization in Romania

Coalitia Skills4IT (since 2013) – the National Coalition for Digital Skills and Jobs (Skills4IT) – is an open platform which gathers a range of stakeholders (policy-makers, ICT companies, associations, training providers and NGOs) with the goal of developing digital skills among citizens, including coding and IT classes in schools, organizing cybersecurity courses and educational events, and training to upgrade the digital skills of the labour force.

Start Industry 4.0 training sessions (since 2018) – through the Start Industry 4.0 initiative, 508 people operating in the industry sector can benefit from free-of-charge training sessions designed for managers at all levels, executives, human resources employees, as well as entrepreneurs. The sessions cover notions of introduction and adaptation to the fourth industrial revolution (Industry 4.0).

Start-up Nation programme (since 2017) – Romania supports the ecosystem of start-ups through this programme, including start-ups that produce innovations or integrate them into new product and service developments. The programme provides financial support (maximum amount around EUR 44 000) for new companies.

Digital HUBs (DIHs) – have been set up to support alignment at national level with European standards for digitalization, innovation and R&D. They are multi-partner one-stop-shops that help companies become more competitive through digital technologies. DIHs provide access to the latest knowledge, expertise and technology to support companies in piloting, testing and experimenting with digital innovations, as well as providing business support and funding to implement these innovations. There are currently three HDIs, one in Bucharest and two in Cluj-Napoca.

Tax incentives for IT – is the exemption from personal income tax for IT employees. Some categories of employees within the IT sector (e.g. programmer) have been benefiting from tax incentives since 2004. Government ordinance 2903/2016 also introduces the tax incentive for start-ups and increases eligible jobs for tax incentives.

R&D tax incentives (since 2010) – take the form of an R&D tax allowance and accelerated depreciation provision for R&D capital, i.e. companies can benefit from a deduction of 50% of the eligible expenses for their R&D activities and/or accelerated depreciation applied for devices and equipment used. Taxpayers that exclusively perform innovation and R&D activities on scientific research and technological development and related activities are exempt from profit tax for the first ten years of activity.

Objectives of the Digital Agenda were to be reached by 2020. The degree to which Romania has met its goals is unknown; some indicators may be tracked in general statistics, but no comprehensive report, evaluation or interim implementation reports are available. However, a manual for monitoring and evaluation of the National Strategy on the Digital Agenda for Romania 2020 is available.[30] There has been a lack of clarity regarding the institution responsible for reporting on implementation results.

The **National Plan for Next Generation Network infrastructure development,**[31] aligned with the objectives of the Digital Agenda, aims at improving broadband connectivity throughout the country. It

[30] https://www.comunicatii.gov.ro//wp-content/uploads/2016/02/Manual_Monitorizare_Evaluare_v2.0-BM.pdf

[31] Planul national de dezvoltare a infrastructurii NGN – MCSI (gov.ro)

prioritizes the development of fibre networks as close to the end user as possible. The Programme for implementation of the Plan envisages political and administrative measures to stimulate the development of NGN networks, including:

1. Encouraging access to existing passive infrastructure;
2. Improving transparency and coordination in relevant civil works;
3. Simplification of procedures for authorizing the construction of electronic communications networks;
4. Requirements regarding NGN infrastructure in new buildings;
5. Utilizing the potential of Next Generation Wireless technologies to accelerate the expansion of broadband infrastructure in rural areas.

The implementation report of the Plan and the Programme is not yet available. In 2015, Romania successfully introduced a state aid instrument for broadband development in rural areas called Ro-NET project,[32] that sought to build up backhaul broadband infrastructure in areas still uncovered (middle-mile funding) with the use of EU funds. By the end of September 2019, work was completed in 606 localities, while an additional 82 localities were in an advanced stage of completion.[33]During interviews, however, the private sector shared their experience of having to face challenges in cross-sectoral infrastructure sharing, lengthy and complex procedures for construction authorizations, indicating that the implementation of at least some of the measures is yet to be finalized.

The **National Strategy for the Implementation of 5G,**[34] adopted in 2019, aims for the timely launch of services (2020) and 5G coverage of all urban centres and mainland transport routes by 2025. Other objectives include boosting deployment of 5G networks, promoting new uses and fostering cooperation, and a set of actions are foreseen until 2025. The strategy was elaborated within an inter-institutional working group, which included representatives of ministries, public administration institutions, and the national defence. Representatives of associations of county councils, municipalities, towns and communes also contributed in drafting the document.[35] The 5G spectrum allocation auction was scheduled to take place in 2020 but was delayed due to issues related to the selection criteria for the equipment providers for the new networks. According to the National Authority for Management and Regulation in Communications of Romania (ANCOM), there are plans to organize the auction in the third-quarter of 2021.[36]

In addition, there are two draft laws that can also have a positive impact on digital transformation in Romania:

1. The draft **Emergency Ordinance for creating the National Cyber Security Directorate,** aiming at establishing the **Romanian National Cyber Security Directorate**, which is set to replace **CERT-RO.**[37] The new institution would firmly position Romania as a recognized leader in cybersecurity and help fulfil its commitments towards the EU and other international partners.

[32] Proiectul RO-NET – MCSI (gov.ro)
[33] Country information - Romania | Shaping Europe's digital future (europa.eu)
[34] Ancom - Strategia 5G pentru Romania
[35] Ancom - Strategia 5G pentru Romania, in consultare publica
[36] Ancom - Plan de actiuni
[37] Update concerning the state of play on the Romanian National Cyber Security Directorate (19th of March 2021) (cert.ro)

2. **Proposal for public policy in the field of e-government (E-government strategy**).[38] The document foresees the necessary steps Romania must take to reach a level of digitization of public services that meets the needs of citizens and is in line with the general goals of the EU.

Recently, the Government adopted a new 5G law "*on the adoption of measures regarding information and communication infrastructures of national interest and the conditions for the implementation of 5G*" which introduces an authorization regime whereby authorizations to use equipment in the ICT infrastructure of national interest (including 5G networks) is granted by decision of the Prime Minister based on the assent of the Supreme Council of National Defense, within 4 months from the date of request. A sanctioning mechanism for non-compliance with the framework is also foreseen by the new law.

To summarize, various elements of digital transformation are addressed in national policies and strategies. A collaborative approach is being used by the institutions in the preparation process of these documents (consultations, discussions, interactions with different stakeholders is a part of it). The main missing link, however, seems to be the lack of adequate monitoring of implementation of these strategies. A holistic and comprehensive strategy for digital transformation, potentially replacing the Digital Agenda 2020 for Romania, which could address this monitoring challenge, is yet to be formulated.

4. Institutional framework for ICT regulation

Changing national political landscape

The changing national political landscape has had an impact on the adoption – or not – of strategies, policies and regulations over the past few years. The institutions most affected by these multiple changes were the Ministry responsible for ICT and digital policy-making and the Digitalization Authority of Romania.

In 2020, the Ministry experienced significant changes at least twice. In January 2020, the Government decided to abolish the Ministry for Transport and the Ministry of Communications and Information Society and create the Ministry of Transport, Infrastructure and Communications.[39] In December 2020 the Government established a **Ministry for Research, Innovation and Digitization**, which takes over, amongst other, the activities, the staff and responsibilities concerning the communications field from the Ministry of Transportation, Infrastructure and Communications (that became the Ministry of Transportation and Infrastructure).

In February 2020, the Government empowered the **Authority for the Digitalization of Romania** to take over some of the Ministry of Communications and Information Society's activities and structures in the field of information technology, information society and the national interoperability framework.[40] It is being placed under the coordination of the Prime Minister, with the primary objectives of supporting and contributing to (i) the digital transformation of Romania's economy and society; (ii) implementing electronic governance in regard to Romanian public administration; and (iii) managing EU financial aid programmes.[41]

[38] Propunere de politică publică în domeniul e-guvernării, elaborată în cadrul proiectului "Stabilirea cadrului de dezvoltare a instrumentelor de e-guvernare", cod SIPOCA 20 – E-Consultare.gov.ro – Participă la decizia publică!

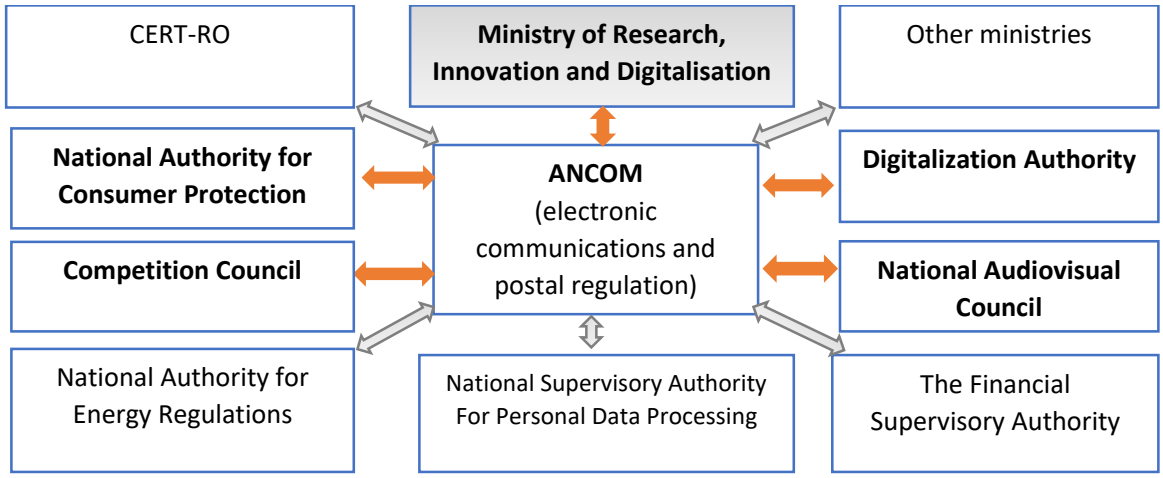
[39] https://www.oirbi.ro/wp-content/uploads/2021/01/40Ready_Raport-OIR_EN.pdf

[40] https://www.oirbi.ro/wp-content/uploads/2021/01/40Ready_Raport-OIR_EN.pdf

[41] https://rlw.juridice.ro/16520/romanian-digitalization-agenda-the-government-takes-one-step-forward-by-setting-up-the-authority-for-the-digitalization-of-romania.html

At the time of writing, the Authority has been moved back under the patronage of a new **Ministry for Research, Innovation and Digitization.** These changes result in a situation where the leadership over digital transformation is unclear. Understanding the mandate of core national institutions is needed to establish fruitful collaboration.

Figure 4. Institutional framework for ICT regulation in Romania



Note. ⟷ Formal collaboration (described by Law or MoU), ⟺ semi-formal or informal collaboration

Source: ITU

Throughout this period of political and institutional change, ANCOM, an independent, regulatory authority for the electronic communications and postal sectors in Romania, has remained a stable and reliable institutional partner. Established in 2009 as an autonomous public authority that reports directly to Parliament, ANCOM has an autonomous budget, approved annually by the Parliament[42] and is operationally independent of electronic communications and postal communications providers. It is a well-respected authority which is seen as effectively using its regulatory powers to contribute to the development of Romanian ICT and postal markets.

As summarized in Figure 4, the main institutions ANCOM collaborates with on a regular basis include:

1. **The Ministry for Research, Innovation and Digitization** – currently the Ministry in charge of policy formation in the field of electronic communications, audiovisual communications and postal services. Collaboration between the Ministry and ANCOM is established by law,[43] whereby ANCOM enforces the sectoral policy and strategy elaborated by the Ministry in the field of electronic communications, audiovisual communications and postal services. ANCOM also collaborates with the Ministry in areas such as policy and strategy formation, law making, and information sharing.
2. **The Competition Council**: Although ANCOM "promotes competition in the sector of electronic communications and of postal services," powers to apply the provisions of Competition Law reside with the Competition Council. Cooperation between the Competition Council and ANCOM is envisaged in law;[44] additionally the two authorities signed a

[42] https://www.ancom.ro/en/financial-sources-_1498
[43] https://www.ancom.ro/en/uploads/links_files/OUG_22_2009_ANCOM_en.pdf
[44] "In view of fulfilling its role and legal duties, ANCOM consults and collaborates with the Competition Council and with the National Authority for Consumer Protection, including by the mutual provision of information required in view of enforcing the

cooperation agreement in 2009.[45] Their relationship takes both formal (official letters, reports, inquiries) and informal (informal meetings, discussions) forms covering topics of mutual interest. Usually, formal collaboration takes place when institutions realize their mandates in *ex ante* (ANCOM) and *ex post* (Competition Council) competition regulation to reach a better-informed decision, or when providing feedback on draft legislation. A recent example of their collaborative approach to solve market problems focused on access to underground infrastructure in Bucharest. In 2019, ANCOM[46] took a decision to reduce tariffs and ensure non-discriminatory access conditions to the underground fibre optic network of Netcity Telecom in Bucharest. A year later, as part of an already ongoing investigation, the Competition Council decided to fine Netcity Telecom[47] for abuse of dominant position as the operator failed to make its infrastructure available on fair and transparent trading conditions to all telecom operators wishing to provide services in Bucharest. The above-mentioned decisions were taken independently, through the institutions' legal mandates, but tackling the same market problem. Close collaboration between institutions helps to take such informed decisions.

3. Collaboration with the **National Authority for Consumer Protection (ANPC)** is also envisaged in law,[48] additionally strengthened by a cooperation agreement, renewed in 2018 that seeks to enhance efficiency in solving complaints received from consumers.[49] ANPC coordinates and implements national strategy and policy in the area of consumer protection and takes action to prevent and combat practices that are harmful to the life, health, safety and economic interests of consumers, while ANCOM has limited competence related to consumer protection in the field of electronic communications.
4. The **National Audiovisual Council of Romania** is the regulatory authority of the audiovisual sector. Its main responsibilities include issuance of broadcasting licenses, control over the content of audiovisual programmes, and monitoring the legal compliance of audiovisual services. As ANCOM has regulatory and control attributes with regard to resources used for broadcasting and re-transmission of audiovisual services,[50] the two institutions signed a cooperation agreement in 2013 to establish how they collaborate, mainly concerning licensing procedures.
5. The **Authority for Digitalization of Romania** (ADR)[51] is a specialized institution responsible for carrying out and coordinating the implementation of public strategies and policies in the field of digital transformation and the information society. It provides e-government services by implementing information and communication systems at national level, and is also responsible for managing and administrating the EU's financial aid for digitalization. In this

provisions of the competition legislation, as well as of the provisions of the legislation in the field of electronic communications and of postal services." Government Emergency Ordinance No. 22/2009 establishing the National Authority for Management and Regulation in Communications, approved by Law No.113/2010, Article 4(2)(a).

[45] https://www.ancom.ro/colaborari-cu-alte-autoritati_4514

[46] https://www.ancom.ro/en/the-technical-and-economic-conditions-for-access-to-the-netcity-infrastructure-have-been-agreed_6070

[47] https://www.commsupdate.com/articles/2020/02/04/romanias-anti-trust-body-fines-netcity-telecom/

[48] "In view of fulfilling its role and legal duties, ANCOM consults and collaborates with the Competition Council and with the National Authority for Consumer Protection, including by the mutual provision of information required in view of enforcing the provisions of the competition legislation, as well as of the provisions of the legislation in the field of electronic communications and of postal services." Government Emergency Ordinance No. 22/2009 establishing the National Authority for Management and Regulation in Communications, approved by Law No.113/2010, Article 4(2)(a)).

[49] https://www.ancom.ro/colaborari-cu-alte-autoritati_4514

[50] https://www.ancom.ro/en/broadcasting_2803

[51] https://www.adr.gov.ro/

respect, ADR and ANCOM joined forces to set up a state aid scheme for NGN development.[52] ADR is also currently setting up support schemes for Romanian SMEs to engage in digitalization through Digital Innovation Hubs. It encourages the creation and development of digital innovation centres, which should complement the national efforts in the field of SME digitalization.[53] As functions related to the support to the private sector in the field of digitalization are relatively new to ADR, the institution is in search of effective tools to increase its collaboration with the private sector. One of them – the Digital Council, an advisory body to ADR with representatives from the private sector, academia, NGOs – was created in 2020.[54] Although results of this Digital Council are yet to be demonstrated, its establishment reveals intentions to intensify collaboration between different stakeholders.

Strengthening inter-agency cooperation and collaboration

Informal collaboration is established between ANCOM and the CERT-RO, the Financial Supervisory Authority, the National Authority for Energy Regulations, and the National Data Protection Authority, as well as with other ministries (mainly on an ad hoc basis). Even if formal agreements are not in place, basic collaboration between institutions is guaranteed by national legislation, stating that if one authority receives an inquiry it does not have the legal power to solve, then it must be handed to the competent authority. However, as indicated by the stakeholders during the interviews, it is normal practice across institutions to maintain informal collaboration with different administrations. The intensity of such collaboration varies depending on the dynamics in the different domains: institutions that have responsibilities in rapidly changing sectors will collaborate more than those whose activities are more settled.

ANCOM has made attempts to move towards more formalized collaboration with some of its counterparts. In 2017, ANCOM, the National Authority for Energy Regulations and the Competition Council announced their intention to set up the "Romanian Regulatory Network," a formal cooperation framework for the three public entities aiming at providing high quality regulatory services to energy and communications markets and, implicitly, to the providers and their users.[55] The current status of this intention is, however, unknown.

The need for closer cooperation between institutions comes from market demand for the sharing of physical infrastructures. Although cross-sector infrastructure sharing is not widespread in Romania, some small telecom operators are using energy incumbent's infrastructure for their networks' deployment. ANCOM's role here is to set the recommended tariffs of access for energy infrastructure operators. In addition, the underground sewers projects (with the attempt to put aerial telecom cables in the underground system) are ongoing in major towns across the country (see **Box 5**). ANCOM is responsible for setting up the access tariffs to this underground infrastructure as well. Furthermore, ANCOM is the designated dispute settlement body in disputes over access to physical infrastructure in Romania. In recent years, ANCOM was asked to solve several disputes related to access to the physical infrastructure belonging to energy distribution companies. This indicates that some of ANCOM's activities are of a cross-sectoral nature, and inter-agency collaboration becomes essential for well-informed decisions and their implementation. Therefore, strengthening collaboration between institutions might be reconsidered.

[52] Specified cooperation agreement was signed.
[53] https://www.oirbi.ro/wp-content/uploads/2021/01/40Ready_Raport-OIR_EN.pdf
[54] https://www.oirbi.ro/wp-content/uploads/2021/01/40Ready_Raport-OIR_EN.pdf
[55] https://www.ancom.ro/en/ancom-consiliul-concuren539ei-537i-anre-exploreaza-modalita539ile-de-colaborare-trans-sectoriala-_5734

Local (municipal) administrations are also important stakeholders in the infrastructure deployment process (often having their own visions, not necessary well aligned with central administrations), their engagement in the cross-institutional collaboration might be valuable.

Box 5. Netcity project in Bucharest

In 2006, Bucharest City Hall initiated a project of migrating aerial networks owned by telecommunication operators into an underground network with multiple safety benefits and an improved visual aspect of the city. The initiative was realized through open public tender and the concession contract for the development of the metropolitan fibre optic infrastructure for a period of 49 years was signed in June 2008.

Netcity Telecom was selected to design, build, manage and operate the Netcity underground infrastructure, with the guarantee of equal, transparent and non-discriminatory access to all companies and telecom operators that activate or want to provide services in Bucharest. During the contract term Netcity Telecom pays the Bucharest City Hall a royalty of 12% from revenues generated from basic services.

Currently, more than 23 000 buildings in Bucharest are connected to Netcity with continuous development of infrastructure.

Similar projects are ongoing in other major cities of Romania.

Source: Reteaua metropolitana de fibra optica a municipiului Bucuresti (net-city.ro)

5. Collaboration with the private sector

The concept of collaborative regulation covers not only inter-agency collaboration, but also other stakeholders, like academia, end-user associations, NGOs, and the private sector. The involvement of the private sector is particularly important as the country's economic development largely depends on the alignment and common vision between state administrations and the private sector.

Collaboration with the private sector is embedded in the legal framework of Romania. Some tools for engagement with private partners are in place:

- **Regulatory impact assessment (RIA)**, which contributes to public-private dialogue, is formally in place in Romania. While Law 24/2000[56] on drafting legal acts set out an initial obligation to identify the impacts of draft regulations, the requirements for RIA have been further refined in Government Decision No. 1361 issued in 2006.[57] According to these provisions, all regulations are required to be accompanied by an explanatory note, describing the rationale and assessing the impacts of the draft proposal. Some analyses reveal that RIA has not yet become a systematic tool in supporting evidence-based decision-making in Romania.[58]
- Romania has an established practice of **public consultations**. According to Law No. 52/2003[59] on transparency of decision-making in public administration, all ministries and central administrations have to publish all regulations for comments on their websites. Romania recently established a central consultation portal (http://e-consultare.gov.ro/) where all consultations of

[56] Machine Translation of "Law No. 24 Of 27 March 2000 On The Rules Of Legislative Technique For The Preparation Of Normative Acts" (Romania) (global-regulation.com)
[57] https://www.oecd.org/gov/regulatory-policy/indicators-of-regulatory-policy-and-governance-2019-romania.pdf
[58] https://www.worldbank.org/en/news/video/2017/06/12/romania-regulatory-impact-assessment
[59] Law-52-2003r1_en.pdf (gov.ro)

ministries and central administrations are listed. However, the minimum period for submitting comments is limited to ten days, and, currently, feedback on the outcomes of consultations is not provided to participants.[60] In practice, the private sector is only involved in the formal public consultation campaigns on draft legal pieces, and mechanisms for initial informal consultation during or ahead of their drafting are lacking – a situation that fails to incorporate market players' views in the core legal drafts. In effect, this leads to private sector players having limited possibility of providing their views on priority issues for markets, and reduced scope of influence on the direction of legal reforms; this results in diminished confidence in the effectiveness of public-private dialogue. Indeed, international best practice is in favour of evidence-based discussions from the inception of the reform processes through to the adoption of new legislative pieces, rather than relying on one-off procedural opportunities to provide feedback without the requirement to also: 1) organize public hearings; or 2) justify the choice of legal instruments and specific measures. Furthermore, according to the private sector, current consultation practices lack standardization, as consultation rules, procedures, deadlines differ across institutions. A universal methodology for consultation with all institutions at national level is desirable.

6. G5 regulation and digital transformation: Six key steps to unlock Romania's potential

Analysis of the institutional framework, policy formation and regulatory practices has identified the main areas that Romania may consider strengthening to enable its digital transformation. Following the main principles of collaborative regulation, identified in the Global Symposium for Regulators' (GSR) Best Practice Guidelines 2019,[61] six targeted steps have been identified that will help Romania make progress in its journey towards these goals.

i. Increase breadth and depth of inter-agency collaboration on regulation to make it more holistic

Although the institutional set-up at the policy-making level in Romania has gone through multiple changes over the past few years, its regulatory framework has remained stable, covering all relevant institutions, with adequate powers and clear roles, coupled with identification of areas where cross-sectoral collaboration is necessary. Romanian institutions understand the importance of a collaborative approach and are seeking to make it work. ANCOM has established formal collaboration agreements with all main institutions that directly concern its activities and which play a role in the digital economy. It also keeps other important peers close through informal collaboration. Therefore, the institutional framework in Romania has integrated effective collaborative mechanisms across national government agencies. However, to make policy implementation more holistic, closer collaboration with local authorities (not only central administrations) might be considered. Local authorities are important stakeholders in the process of infrastructure deployment and play a vital role in ensuring that all parts of the country can enjoy next-generation connectivity. Local authorities can facilitate network deployment by making their assets and land available to network providers. Therefore, the alignment between local planning policies and national plans of the roll-out of digital networks might bring substantial benefits in terms of cost and time.

Regulatory authorities (central and local) could benefit from closer collaboration if they operate as a national regulatory community. Some countries have created formalized networks of national regulators,

[60] https://www.oecd.org/gov/regulatory-policy/indicators-of-regulatory-policy-and-governance-2019-romania.pdf
[61] https://www.itu.int/en/ITU-D/Conferences/GSR/2019/Documents/GSR19BestPracticeGuidelines_E.pdf

where they solve existing problems, share best practices, develop common visions, and build institutional and human capacity. A similar process was initiated by ANCOM, as discussed in Section 4.

ii. Increase the quality of reporting and quantity of open data

Evidence matters for creating a sound understanding of the issues at stake, identifying options and their impacts going forward, while enhancing the quality of regulatory decisions. Enhancing **the use of data and evidence** in crafting policies and regulation, in implementation, monitoring and evaluation can help solve salient market issues and keep policy implementation on track. As international best practice suggests, ensuring smooth and outcome-oriented implementation of existing strategies becomes even more important than creating new ones. Authorities should regularly collect and publish reports on progress towards achieving national targets. Appropriate authoritative benchmarks and metrics can guide regulators in rule-making and enforcement, thus enhancing the quality of regulatory decisions, as well as providing the market and citizens with useful reference public information.

As our analysis revealed, adequate mechanisms and practices are lacking in monitoring implementation of existing strategies in Romania. Digital transformation, however, is a process and requires continuous revision, adjustment and flexibility to adapt to a constantly changing environment. Therefore, introducing an appropriate monitoring and evaluation framework for digital policies implementation gains additional value.

National data policies are also at the heart of the digital economy. They generally aim to increase the accessibility and ease of data-sharing among users for various purposes, including social, scientific and economic. Therefore, Romania may wish to re-consider the amount and quality of an open data approach where market players would also be able to access information collected by the regulator and other authorities. As of 2020, Romania ranks 22nd of 31 evaluated countries with regard to open data maturity.[62] Extending the open data initiative to local authorities would be a huge step forward – easing access to data not only fosters transparency, but also supports a culture of innovation at the local level. Access to information held by local authorities on physical infrastructure and its availability could also help operators better plan their investments, and further facilitate the deployment of digital infrastructures.

iii. Encourage digital skills, innovation and entrepreneurship

Another principle of collaborative regulation suggests that policy and regulation should **be incentive-based**. While infrastructure in the country is adequate, Romania is facing an insufficient innovation and entrepreneurship culture across society. The analysis of international metrics in Section 2 indicates that local businesses are reluctant to take entrepreneurial risks; instruments and funds encouraging innovations are insufficient; knowledge sharing between academia and business is insufficient; and, most importantly, there is a shortage of skills and knowledge where business innovation is concerned. This means, that there is a need for building an innovation culture at the national level to unleash the potential of digital access and services for social and economic good; the adoption of a national innovation strategy can go a long way towards achieving this objective.

A wide range of tools that encourage innovation are at hand for policy-makers and regulators. From traditional ones (e.g. tax incentives and tax breaks for adoption of digital technologies, R&D support, including R&D grants and tax credits, equity financing funds, special economic zones, science parks) to new ways of creating space for digital experimentation, such as regulatory sandboxes and innovation testbeds. Romania is successfully applying some of these tools (see ***Box 4***, Section 3); however, to make

[62] https://data.europa.eu/sites/default/files/country-factsheet_romania_2020.pdf

substantial progress, a more systematic approach is needed. Current measures are insufficient to tackle the problems affecting the research and innovation sector; addressing this will require significant regulatory and budgetary changes.[63]

As substantial changes require time, effort, and political decisions, the initial steps towards the facilitation of innovation in ICTs could be taken by the ICT regulator. For example, providing non-binding regulatory advice to innovators (i.e. helping innovators or businesses navigate the regulatory system, ensuring new products, services or business models align with existing regulations), or supporting experimentation and testing of innovations (by reducing or temporarily omitting regulatory or administration fees), as well as participation in innovation projects.

iv. Simplifying administrative procedures

A major element that slows the process of developing ICT infrastructure is the ambiguity of legislation authorizing construction projects, which leads to delays. As some commentators have noted, such a cumbersome authorization process could prove to be a serious bottleneck for the deployment of 5G infrastructure in Romania.[64] Simplifying the authorization regime for the construction of telecommunications infrastructure, depending on the type of network component, can ensure faster construction and adoption of new technologies. It would be in line with the objectives of the EU's Broadband Cost Reduction Directive revision. The EC has noted that since 2014 (when the Broadband Cost Reduction Directive was adopted), limited progress has been made in supporting the coordination of civil works, easing the process of applying for civil works permits, or facilitating access to buildings for the installation of in-building infrastructure across the EU – and additional measures should be taken to tackle the problems.[65] Policy and regulation should be **adaptive, balanced and fit for purpose**, therefore additional remedies to improve the situation may be required.

In parallel with streamlining legal proceedings, enhanced public consultation procedures in Romania can provide a sounding board for regulatory decisions and strengthen their relevance from the perspective of market players. As current consultation practices lack standardization (e.g. in terms of consultation rules, procedures, differing deadlines across institutions), a standardized methodology for consultation with all institutions at national level could enhance public-private dialogue in Romania.

v. Building trust by creating engaging dialogues

Regulatory frameworks for digital transformation should promote transparency, continuous dialogue, the sharing of perspectives and expertise, and provide opportunities for all participants to see how they are making an impact. The Policy Design Principles of collaborative regulation encourage regulators and policy-makers to intensify discussions with all stakeholders to come up with the best possible solutions. Trust is the foundation of the regulatory process, and continuously building trust in regulatory institutions and decisions is key to the growth of digital.

As existing collaboration and consultation mechanisms do not always deliver the expected results, and more engaged collaboration with private sector, academia and non-governmental institutions is needed, additional **stakeholder engagement vehicles –** such as public hearings, high-level roundtables, expert workshops, hackathons, etc. **–** could be considered as a step forward in more engaged collaboration. On

[63] R&D intensity of 0.51% of GDP in 2018, well below the 2020 national target of 2% and the EU average of 2.12%. Public R&D investment was 0.2% of GDP in 2018. Private expenditure on R&D was only 0.30% of GDP, below the EU average of 1.41%.
[64] DESI - Romania | Shaping Europe's digital future (europa.eu)
[65] Report on the implementation of the Broadband Cost Reduction Directive | Shaping Europe's digital future (europa.eu)

one hand, such engagement could complement existing collaboration practices between authorities; on the other hand, it could improve the private sector's perception of the effectiveness of public-private dialogue. A strong sense of co-creation could drive investment, innovation and inclusiveness.

Additionally, principles of collaborative regulation also encourage revisited regulatory approaches such as co-regulation and self-regulation, which have become common practice in many countries and can be strengthened in the case of Romania. According to industry representatives, ICT market players are usually willing to address the identified issues themselves, when proper indications are given by authorities. This is trust – formal regulation leaving sufficient space for self-regulation, hybrid and collaborative regulatory models would demonstrate its trust in markets and market players.

vi. Setting regulatory strategy for digital

As GSR-20 Best Practice Guidelines highlight,[66] regulators and policy-makers should articulate a clear rationale for how and why decisions are made, their goals, and time-bound targets. Strategic priorities should address short-to-medium term outlooks of national and global markets, with long-term strategies taking into account appropriate government policy; they should also ensure a coordinated approach among all stakeholders, while advancing regional development strategies where appropriate.

The formulation of a consensus-based long-term vision of digital transformation in Romania could be the first outcome of an improved consultative and collaborative approach. The majority of stakeholders interviewed for this research emphasized the importance of a common vision and strategy. As the Digital Agenda 2020 for Romania has already reached its targeted deadline, a new holistic[67] and comprehensive strategy for the country's digital transformation is needed. Such a compelling vision – formulated with the inclusion of all stakeholders – has better chances of being implemented. Finally, no strategy can be successful without strong leadership-driven implementation. As international best practice suggests, a single body with strong coordination powers may be in a better position to drive the process. Romania may also consider having a single authority for the coordination of the whole digital transformation process.

Conclusions

Our research and analysis have established that Romania's institutional and regulatory framework is built upon the collaborative mindset. Institutions have appropriate mandates and decision-making powers, understand the value of collaboration and are seeking to make it efficient. Some extra steps could be taken to improve collaboration with other stakeholders (private sector, academia, non-governmental organizations) to pave the way for principled engagement of all market stakeholders in the growth of the digital economy. The adoption of best practice regulatory principles and tools of collaborative regulation could enhance digital market outcomes, bringing Romania into the group of regional and global leaders. Romania has all the ingredients that would allow the country to capitalize on its digital potential in a relatively short amount of time.

[66] GSR-20_Best-Practice-Guidelines_Final_E.pdf (itu.int)

[67] https://www.itu.int/en/ITU-D/Conferences/GSR/2019/Documents/GSR19BestPracticeGuidelines_E.pdf

ANNEX 1. Interviews with stakeholders

During the period of March – April 2021, interviews with the following stakeholders were conducted:

1. The National Authority for Management and Regulation in Communications of Romania (ANCOM);
2. The Competition Council;
3. The Authority for the Digitalization of Romania (ADR);
4. The National Association of Mobile Operators (AOMR).

Five main topics were discussed during the interviews with stakeholders:

1. **Description of the existing institutional situation**, i.e. a place of an organization in the general institutional framework, its accountability and involvement in the regulation of electronic communications and/ or digital markets.

2. **Elaboration on the existing collaboration**: the depth and breadth (i.e. main counterparts and topics) of existing collaboration, forms of collaboration (e.g. official letter, requests, formal or informal meetings), main outcomes (in term of new initiatives, new pieces of regulation, etc.).

3. **Reflection on stakeholders' experiences**: challenges and lessons learned through the collaboration process with other stakeholders.

4. **Evaluation of existing regulatory framework and institutional governance**: Is the country ready for digital transformation, in terms of its policy, regulatory framework and institutional governance? How could it evolve/change over time, bearing in mind the growing importance of digital markets?

5. **Expectations for the future collaborative governance:** What are the fundamental elements of modern regulation and what are the most important actions that could be taken in moving towards such regulation?