



MORE BYTE FOR YOUR BUCK HELPING DELIVER DIGITAL INFRASTRUCTURE –A SURVEY OF INVESTOR PERCEPTIONS



“The methodology relied on building an accurate picture from the outputs of the sector itself alongside the policy, legal and regulatory environment for investors, service providers and consumers.”



BACKGROUND

The EBRD’s Legal Transition Programme (LTP) has focused part of its work on assessing the state of legal, policy and regulatory transition in a number of sectors in the economies where the EBRD invests.¹ These assessments benchmark the sector developments in each country against recognised international best practices, providing analysis of the existing legislative framework, a comparison of that framework with best practice and the identification of gaps and legal and regulatory reform needs.

As part of that work, the Bank, through the LTP, has carried out regular assessments (in 2008, 2012 and 2016) of the information communications technology (ICT) sector in the economies where it invests. The LTP’s approach was to study key characteristics of the market, in terms of output metrics (for example broadband penetration, eGovernment and eCommerce world rankings) alongside a comparison of the legal and regulatory framework and best practice in the sector. That methodology relied on building an accurate picture from the outputs of the sector itself alongside the policy, legal and regulatory environment for investors, service providers and consumers.



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¹ See <http://www.ebrd.com/where-we-are.html>

A NEW APPROACH

For 2020-21, the LTP's survey takes a different approach, one based on investors' immediate concerns regarding which factors in each country contribute most to decisions on whether to invest or not. The results therefore identify the countries that have the most attractive markets and policies for encouraging investment, particularly for digital infrastructure and broadband connectivity. The survey outputs, in the form of a ranking of investment attractiveness and a listing of the key investment risk factors, are intended not only to inform investors about relative investment climates, but also to prompt policymakers to consider reforms that would improve investment conditions in their countries.

THE SURVEY'S OBJECTIVE

The overall objective of the survey is to inform investors, policymakers, regulatory and other influencers of investment so that they can make decisions that will increase the impact and effectiveness of sector investments and thereby improve digital infrastructure and broadband connectivity coverage, quality and capacity.

COUNTRIES INCLUDED IN THE SURVEY

The countries intended to be included in the 2020-21 survey are:

- from the southern and eastern Mediterranean (SEMED) region: Egypt, Jordan, Lebanon, Morocco and Tunisia
- from the south-eastern European countries (SEE) region: Albania, Bosnia and Herzegovina, Croatia, Kosovo, Montenegro, North Macedonia and Serbia
- from the eastern Europe and the Caucasus (EEC) region: Armenia, Belarus, Georgia, Moldova and Ukraine
- from the Central Asia (CA) region: Kazakhstan, the Kyrgyz Republic, Mongolia and Tajikistan.

The SEMED and SEE country reports were published during the course of 2020² and the remaining country reports, from EEC and CA, will be published during 2021.

METHODOLOGY

The survey records directly the views of a wide range of existing and potential stakeholders in investment in broadband connectivity, including finance providers, telecommunications network and service operators, broadband and internet service providers, analysts and other market stakeholders. "Broadband investment" embraces digital infrastructure and connectivity (fixed and mobile networks) and the digital services (both retail and wholesale) that are delivered over these networks (voice, internet, data or media). This definition is used within the context of the key purpose of this survey – to promote digital infrastructure investments.

Respondents were asked to make a separate response for each country with which they are familiar. Their knowledge of the country could be either from their existing presence, or by their having studied the market for possible investment in the sector in that country. The survey sought opinions on the market for broadband investment from several overall viewpoints:

- market attractiveness – what is perceived about the market size, potential and attractiveness for investments?
- investment risk factors – including sector policies, the general and specific legal and regulatory frameworks, public and private sector cooperation, availability and quality of input resources including spectrum, labour and rights of way, taxation, trade policies and political stability
- best practice potential – what level of confidence do investors have in the country moving towards best practices for the sector?



¹ See www.ebrd.com/cs/Satellite?c=Content&pagename=EBRD%2FContent%2FContentLayout&cid=1395292756036 for country reports, individually and regionally grouped.

COUNTRY OUTCOMES

Applying the above approach and methodology to individual countries and regional groupings, detailed conclusions were drawn and recommendations offered to overcome any identified impediments. These conclusions and recommendations are reported in detail in the full survey reports, 12 of which have been published on an individual country basis and as two regional groupings.³

Herewith a summary of the conclusions and recommendations for the two regional groupings.

Table 1 shows that Egypt is the largest market by population and is also forecast to be the fastest-growing market for broadband services, from the lowest current base. Morocco is the second-largest market by population, with the second-best forecast broadband growth rate, also from a low base. All five countries have relatively low positions in the overall world rankings for ICT development, although Jordan and Lebanon appear to have made some progress in improving their position.

Survey analysis and conclusions – the southern and eastern Mediterranean region

Table 1: Main market benchmark indicators in the SEMED countries

Market indicator	Egypt	Jordan	Lebanon	Morocco	Tunisia
Population (million)	100	10.1	6.9	36.5	11.7
Penetration of fixed broadband per 100 population	5.4	4.7	21	3.9	8.8
Penetration of mobile broadband per 100 population	50	104	57	58	81
% of population using the internet	45	67	78	65	64
ICT Development Index (world ranking)	103rd	70th	64th	100th	99th
Average download speed per fixed broadband user (Mbps)	26.52	50.53	8.10	18.52	9.12
Average download speed per mobile broadband user (Mbps)	16.89	17.74	46.69	33.57	25.32
Forecast overall broadband market growth up to 2023 (% compound growth per annum)	17	3.4	5.8	13	6.0

Source: United Nations, ITU, Speedtest Global Index, Fitch Solutions.

Table 2: Market attractiveness - the SEMED countries

Market attractiveness factors	Egypt	Jordan	Lebanon	Morocco	Tunisia
Overall size of the market, in population terms and relative spending power					
Growth potential of the market, in terms of demand for broadband services					
Efficiency of the markets in terms of fair competitive conditions					
A clear national ICT market strategy for the country with stated ambitions and goals, for example targets for broadband coverage and take-up					

Source: United Nations, ITU, Speedtest Global Index, Fitch Solutions.

● Good ● Medium ● Poor

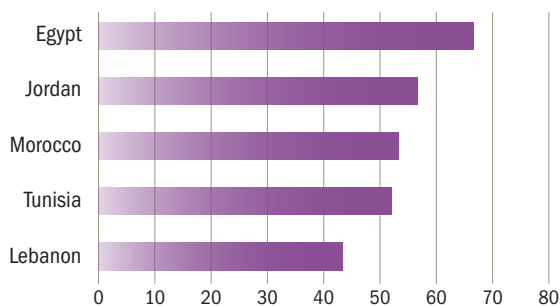
² <http://www.bso.am/> (last accessed 15 January 2021).

³ *Ibid*

Jordan and Lebanon are relatively small markets, but with relatively high standing in internet usage. Jordan already has high mobile broadband penetration, while its relatively expensive fixed broadband prices contribute to relatively low fixed broadband penetration. Jordan's forecast for broadband growth remains the lowest of the five countries. The average broadband speed test results show that the highest users are Jordanian fixed broadband subscribers, followed by Lebanese mobile broadband users. Relatively low speed usage is recorded by fixed broadband subscribers in Tunisia and Lebanon. The countries with the highest average download speeds also have the lowest fixed broadband penetration, showing that in these markets, the big users are purchasing fixed broadband.

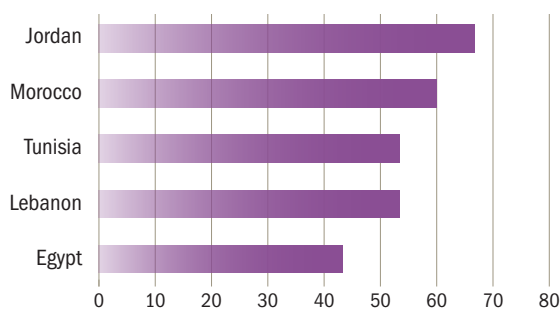
Based on the respondents' views (see Chart 1), Egypt is the most attractive of the SEMED broadband markets and Lebanon the least attractive. For this component, the survey participants were asked to rate only the pure

Chart 1: SEMED Broadband Market Attractiveness Index



On the comparative scale, zero would indicate a perception that the broadband market had no attraction. A score of 100 would indicate a perception that the market potential was perfect. Source: EBRD

Chart 2: Best Practice Index - SEMED countries



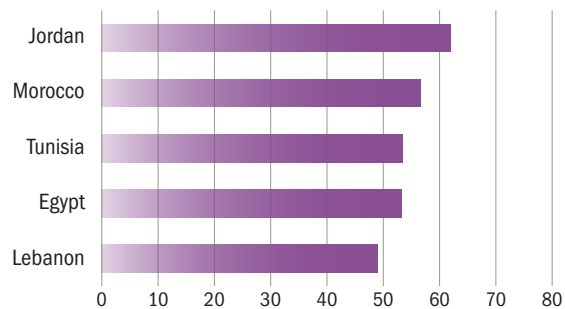
A value of zero would indicate that the country had no best practices relating to broadband investment conditions. A score of 100 would indicate that the country had already adopted all relevant best practices. Source: EBRD

market potential, disregarding any investment risk factors, which are only taken into account in the next component. Both the market attractiveness and the risk factors are combined to calculate the Overall Broadband Investment Index.

Jordan appears to be the fastest at adopting best practices for lowering investment barriers (Chart 2). Its legal and regulatory framework has followed the main liberalising steps already adopted by the European Union (EU). Jordan's current policy is to continue to harmonise with the EU's more investor-friendly laws and regulations.

Morocco and Tunisia have the same overall harmonisation aims but are slower to implement the required steps.

Chart 3: Overall Broadband Investment Index – SEMED countries



On the comparative scale, zero would indicate a perception that the investment climate was very poor. A score of 100 would indicate a perception that the overall conditions were perfect for investment. Source: EBRD

Lebanon is currently deadlocked by policy and regulatory inaction.

Respondents have the lowest confidence in Egypt's adoption of best practice adoption by the sector.

The Overall Broadband Investment Index is a composite index and has been compiled from the scoring in the components set out in the preceding sections, namely:

- market attractiveness
- investment risk
- confidence towards adopting best practices.

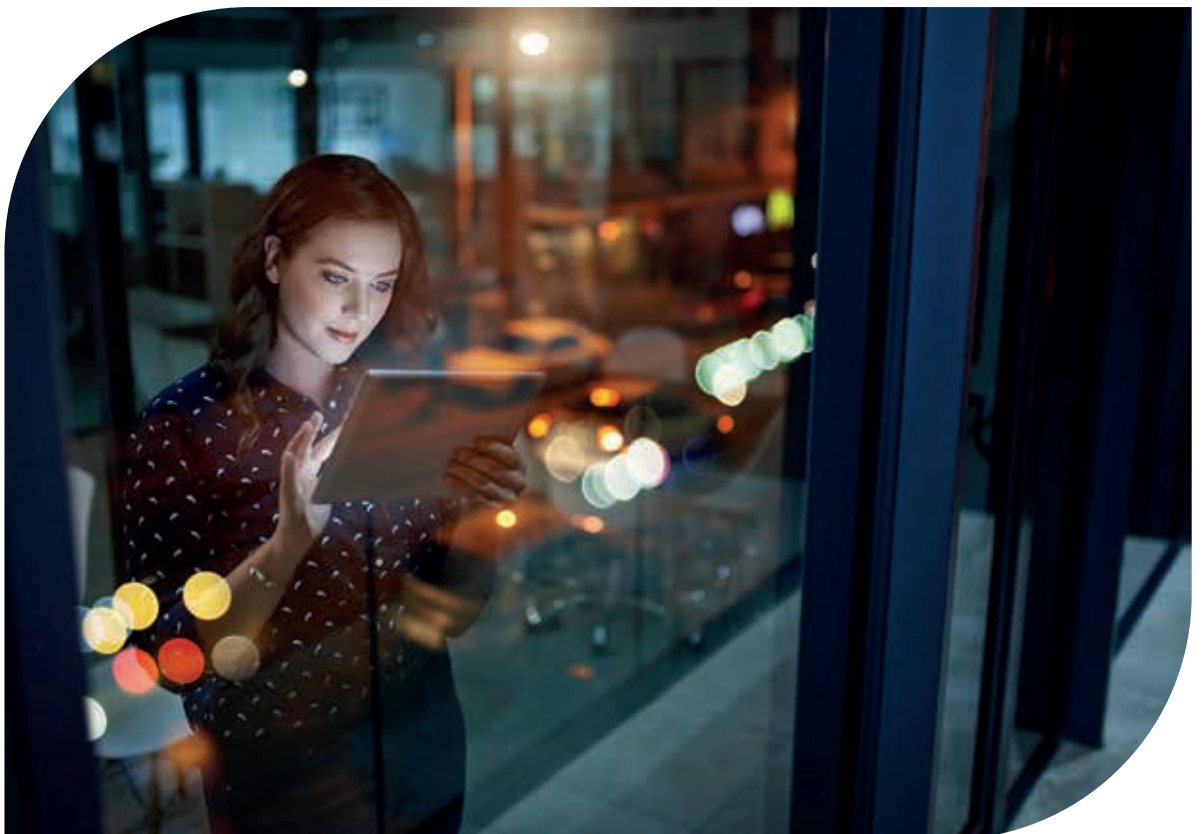
Chart 3 shows that in all SEMED countries, conditions are a long way short of what respondents would ideally wish for.

Table 3: SEMED countries - recommended priorities for action

Investment risk factors	Egypt	Jordan	Lebanon	Morocco	Tunisia
Taxation generally or targeted at the sector	⚠️	⚠️	⚠️	⚠️	⚠️
Access to spectrum resources	⚠️	⚠️	⚠️	⚠️	⚠️
The legal and regulatory framework specific to electronic communications and broadband investments	⚠️	⚠️	⚠️	⚠️	⚠️
The country's overall legal system, predictability and process	⚠️	✅	⚠️	⚠️	⚠️
State participation in the sector	⚠️	✅	⚠️	✅	⚠️
State assistance and funding schemes	⚠️	✅	⚠️	✅	⚠️
Certainty in construction permits or wayleaves	⚠️	✅	✅	⚠️	⚠️
Trade barriers	⚠️	✅	✅	✅	⚠️

Source: United Nations, ITU, Speedtest Global Index, Fitch Solutions.

● Low priority
 ● Medium priority
 ● High priority



Survey analysis and conclusions – the south-eastern Europe region

Table 4: Main market benchmark indicators in the SEE countries

	Albania	Bosnia and Herzegovina	Croatia	Kosovo	Montenegro	North Macedonia	Serbia
Population (million)	2.9	3.3	4.1	1.8	0.7	2.1	7.0
Penetration of fixed broadband per 100 population	16	22	34	38	25	22	26
Penetration of mobile broadband per 100 population	45	51	90	72	55	63	91
% of population using the internet	72	70	73	77	72	79	73
ICT Development Index (world ranking)	89th	83rd	38th	Not available	61st	69th	55th
Average download speed per fixed broadband user (Mbps)	33.2	32.1	35.7	46.2	30.3	46.4	50.0
Average download speed per mobile broadband user (Mbps)	49.6	33.6	61.5	28.8	49.3	41.3	43.4
Forecast overall broadband market growth up to 2023 (% annual compound growth)	6.2	1.6	0.9	6.8	2.6	1.1	0.8

Table 5: Market attractiveness factors

Market attractiveness factors	Albania	Bosnia and Herzegovina	Croatia	Kosovo	Montenegro	North Macedonia	Serbia
Overall size of the market, in population terms and relative spending power							
Growth potential of the market, in terms of demand for broadband services							
Efficiency of the markets in terms of fair competitive conditions							
A clear national ICT market strategy for the country with stated ambitions and goals, for example targets for broadband coverage and take-up							

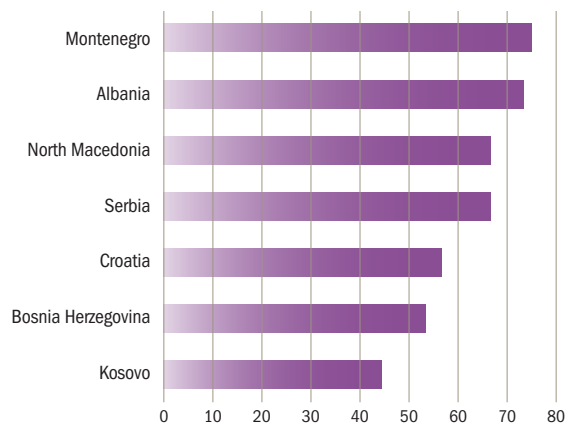
● Good ● Medium ● Poor

Serbia (see Table 4) is the largest market in population terms but is also forecast to be the slowest-growing market for broadband services. Croatia is the second-largest market by population and also has a low forecast broadband growth rate. The highest forecast growth rates are in Albania and Kosovo. Croatia has the highest global ranking for ICT development, benefiting from its EU membership.

Kosovo, Montenegro and North Macedonia are relatively small markets, but with relatively high standing in internet usage together with some potential to grow their broadband markets.

Based on the respondents' views, Montenegro is the most attractive of the SEE broadband markets and Kosovo is the least attractive (Chart 4). For this component, the survey participants were asked to rate only the pure market potential, disregarding any investment risk factors (which are only taken into account in the next component). Both the market attractiveness and the risk factors are combined to calculate the Overall Broadband Investment Index.

Chart 4: SEE - Broadband Market Attractiveness Index



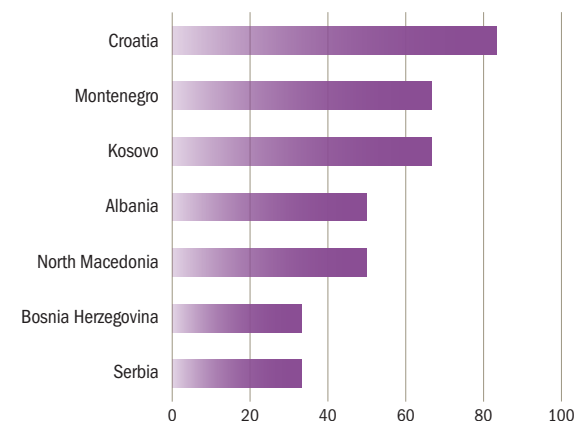
On the comparative scale, zero would indicate a perception that the broadband market had no attraction. A score of 100 would indicate a perception that the market potential was perfect. Source: EBRD

All the SEE markets surveyed have problems in the adoption of best practices, creating significant barriers to investments including time delays and inconsistently applied procedures. The most common example across the region is the problem experienced by investors in obtaining permissions for constructing civil infrastructures. This includes building mobile transmission towers, laying cables and ducts, getting access to public and private properties and for installing specialist equipment. In many of the markets there are bureaucratic delays, multiple levels of decision-making and inconsistently applied rules.

Best practice would be in place if the necessary applications could be made online via a one-stop-shop procedure, with all the layers of permission granting following the same effective procedures and timescales. Even in Albania, Croatia, North Macedonia and Serbia, where the introduction of new procedures for permission-granting has begun, there are still significant problems experienced by network operators.

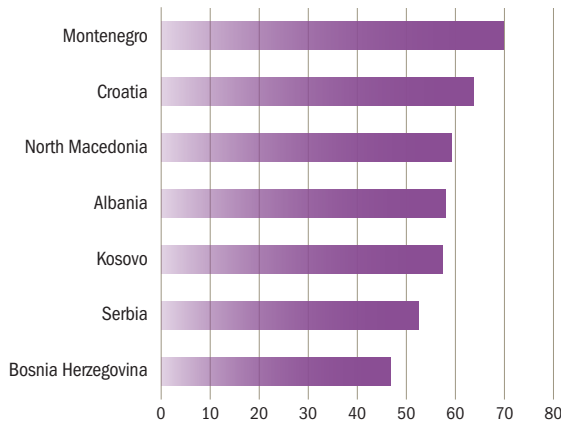
Croatia is the market where there is most confidence that best practice policies, legislation and regulatory practices will be applied to the sector (Chart 5). This arises from its membership of the EU. In the other markets, confidence varies, especially in the way that geographical municipalities apply the various legally defined procedures. The lowest confidence is in Serbia, where private investors feel particularly disadvantaged in competing against the state-owned incumbent operator.

Chart 5: Best Practice Index - the SEE countries



A value of zero would indicate that the country had no best practices relating to broadband investment conditions. A score of 100 would indicate that the country had already adopted all relevant best practices. Source: EBRD

Chart 6: Overall Broadband Investment Index – SEE countries



The Overall Broadband Investment Index is a composite index and has been drawn from the scoring in the components set out in the preceding sections, namely:

- market attractiveness
- investment risk
- confidence towards adopting best practices.

The chart shows that in all the markets, the investment conditions are less than what respondents would ideally wish for.

On the comparative scale, zero would indicate a perception that the investment climate was very poor. A score of 100 would indicate a perception that the overall conditions were perfect for investment. Source: EBRD

Table 6: SEE markets - Recommended priorities for action

Investment risk factors	Albania	Bosnia and Herzegovina	Croatia	Kosovo	Montenegro	North Macedonia	Serbia
Certainty in construction permits or wayleaves	⚠	⚠	⚠	✅	⚠	⚠	⚠
Availability of labour especially with digital skills	⚠	⚠	⚠	⚠	⚠	⚠	⚠
State participation in the sector	⚠	⚠	⚠	⚠	✅	⚠	⚠
Taxation generally or targeted at the sector	⚠	⚠	⚠	✅	⚠	⚠	✅
Political stability, security, criminality, terrorism	⚠	⚠	✅	⚠	✅	✅	✅
Corruption generally or applied to the sector	⚠	⚠	⚠	⚠	✅	✅	⚠
State assistance and funding schemes	⚠	⚠	⚠	✅	✅	⚠	✅
The country's overall legal system, predictability and process	⚠	⚠	⚠	⚠	✅	✅	✅
Access to spectrum resources	✅	⚠	✅	⚠	✅	⚠	✅
Legal and regulatory framework for broadband	⚠	⚠	✅	✅	✅	✅	⚠
Quality of databases and access to information	⚠	⚠	⚠	⚠	✅	⚠	⚠
Labour regulations, militancy, disruptions	⚠	✅	✅	✅	⚠	✅	⚠

Source: United Nations, ITU, Speedtest Global Index, Fitch Solutions.

• Low priority • Medium priority • High priority

Recommendations for each country are given in more detail in the full survey reports which can be found [here](#).

COVID-19 CONSIDERATIONS

Some of the analysis for the survey took place before the advent of the Covid-19 virus, so no account has been taken of the subsequent impact of the pandemic. The forecasts of fixed and mobile broadband growth are based on 2019 data and cover the period up to 2023. These forecasts are likely to be affected by the pandemic, typically arising from a greater demand from personal and business users for social and work-related networking.

Although the impact of Covid-19 is likely to vary from market to market, the overall relative growth rates should remain consistent. For example, the relatively high growth rates for broadband services in Egypt and Morocco (17 per cent and 12 per cent per year, respectively) are likely to be maintained as broadband coverage improves. The relatively lower growth rates in Lebanon, Jordan and Tunisia (from 3 per cent to 6 per cent per year, respectively) will continue to reflect the greater relative level of saturation already achieved in those markets. Similarly, the relatively high growth rates for broadband services in Albania, Kosovo and Montenegro (around 3 per cent to 7 per cent per year) are likely to be maintained because the fundamentals of their competitive market growth remain unchanged. The relatively low growth rates in Croatia and Serbia (around 1 per cent per year) will continue to reflect the greater level of saturation already achieved in those markets.

Broadband speeds appear to be affected⁴ for example in Albania, where average mobile broadband download speeds have decreased by 9 per cent while fixed broadband speeds have increased by 1 per cent. In Montenegro, fixed and mobile broadband speeds have increased by 3 per cent and 13 per cent, respectively while in North Macedonia these have both decreased slightly. Similarly, fixed broadband speeds in Jordan have increased by 44 per cent and Tunisia by 30 per cent. Mobile broadband speeds have reduced in Morocco and Tunisia while in Jordan mobile broadband speeds have risen by 7 per cent and in Lebanon by over 100 per cent. The inconsistency of these changes will add further uncertainty to investment conditions.

Several SEMED countries adopted measures to cope with the increasing demand for communications services during the Covid-19 outbreak. For example, governments in Egypt and Tunisia requested operators to provide free internet packages and to offer free access to e-learning and healthcare platforms. In Egypt, the cost of the additional data packages and free browsing was financed by the state. The regulator in Jordan temporarily granted telecommunications operators additional spectrum to increase network capacity.

This report makes both general and detailed recommendations based on the analysis of respondent views given before the coronavirus outbreak. These recommendations will still apply and in many instances their relevance will be brought more into focus by the new situation. The case for further investment in broadband infrastructure has increased, now with even more attention on more reliable and universal broadband services.

At a policy and regulatory level there will also be greater focus on the collaboration between government investments and private sector investments. This is particularly relevant in areas such as policy consultation, the use of public funds, achieving universal broadband coverage and the need for greater investment efficiencies to achieve cost reductions and greater network resilience.



⁴ <https://www.speedtest.net/insights/blog/tracking-covid-19-impact-global-internet-performance/#/> (last accessed 22 January 2021).