Chapter 10.

Digital society in South East Europe

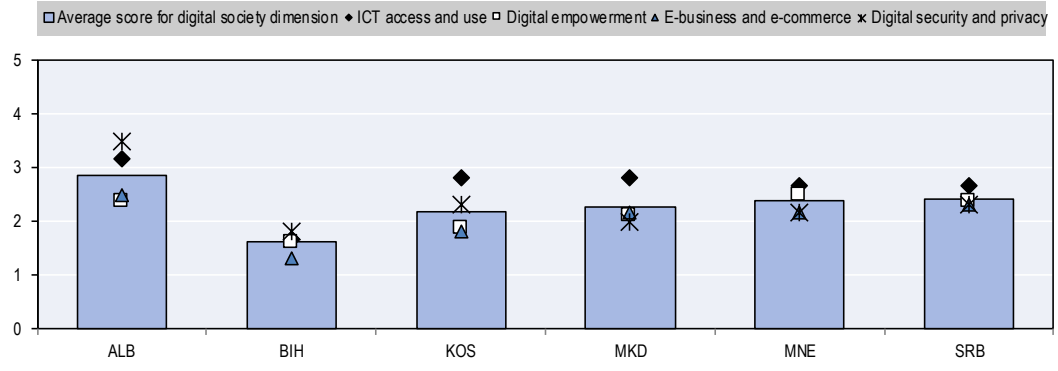
This chapter on the digital society assesses the policy settings, strategies, processes and institutions in six South East European economies. It begins with a brief overview of trends and performance in developing the inclusive use of information and communications technology (ICT), including the importance of digital ICT imports and exports of goods and services, Internet access, broadband penetration and the use of e-commerce. It then focuses on four key sub-dimensions. The first sub-dimension, ICT access and use, examines the legislative and institutional framework to foster ICT access. The second, digital empowerment, gauges the establishment of policy and institutional frameworks to maximise the benefits of digitalisation for the economy and society. The third, e-business and e-commerce, assesses the promotion of ICT adoption by small and medium-sized enterprises, e-commerce legislation, and the safeguarding of e-commerce consumers. Finally, the digital security and privacy sub-dimension examines the legal framework for and implementation of personal data protection, digital risk management and e-authentication. The chapter includes suggestions for enhancing policies in each of these sub-dimensions in order to improve access to and use of digital technology and participation in Europe's envisaged Digital Single Market, which in turn would foster the competitiveness of these economies.

Main findings

Digitalisation[1] can bring great benefits to society and the economy. However, it tends to progress unevenly; while new technology can create opportunities for businesses and citizens, it can also be disruptive, displacing workers, creating new digital divides and worsening inequality (OECD, 2017a). Thus, cross-sectoral national digital strategies are focused on enabling the positive economic and social conditions necessary for boosting countries' competitiveness, economic growth and social well-being (OECD, 2015a). The six SEE economies – Albania, Bosnia and Herzegovina, the Former Yugoslav Republic of Macedonia, Kosovo,* Montenegro and Serbia – have adopted a Multi-annual Action Plan (MAP) which includes digital integration as its fourth component. It stresses the importance of implementing far-reaching interventions and actions such as future-proof digitalisation strategies, an updated regulatory environment, improved broadband infrastructure, and strategies for access and digital literacy in order to open up the digital economy more widely and to integrate the economies into the pan-European digital market (MAP, 2017).

The digital society dimension assesses policies for an inclusive and competitive digital society in the six SEE economies. Together they score on average 2.5 out of 5 (Figure 10.1). This score implies that SEE governments have adopted policies and legal frameworks to develop the digital society and are in the initial stages of policy implementation. While each economy's performance is partly related to its stage of development, it is clear that progress is directly linked to the importance governments place on information and communications technology (ICT) in their vision for future growth, and to their commitment to implementing their digital society policies. Albania and Kosovo have made the most progress since the previous assessment cycle (OECD, 2016b). Both of these governments have enhanced intragovernmental co-operation, emphasised the cross-cutting character of ICT in their development strategies, and allocated resources to implement their digital strategies.

Figure 10.1. **Digital society: Dimension and sub-dimension average scores**



Note: See the methodology chapter for information on the *Competitiveness Outlook* assessment and scoring process.

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* This designation is without prejudice to positions on status, and is in line with United Nations Security Council Resolution 1244/99 and the Advisory Opinion of the International Court of Justice on Kosovo's declaration of independence.

Serbia and Montenegro have continued the smooth implementation of their digital strategies, strengthening aspects of their support for the ICT industry and e-business development. The Former Yugoslav Republic of Macedonia, on the other hand, has slowed down the implementation of activities in some domains since 2015. In a positive development, Bosnia and Herzegovina adopted both electronic communications and information society policies in the first half of 2017, laying the foundations for better performance in the future.

On average, the SEE economies perform better in the area of ICT access and use, facilitating broadband development effectively. They also perform well in digital security and privacy, propelled by digital public administration reform policies and e-government development. They are weaker in e-business and e-commerce, mainly due to challenges in consumer protection and promotion of digital business, while the weakest domain is digital empowerment, particularly e-inclusion. Overall, they need to enhance their monitoring, evaluation and readjustment of policies in almost all areas.

Comparison with the 2016 assessment

The digital society assessment framework was profoundly revised for this edition due to the rapid evolution of the field which forced an update of the way policies are assessed. Direct comparison with the 2016 assessment is thus not possible or may be misleading. The 2016 framework for this dimension included three sub-dimensions – ICT readiness and intensity, ICT in education, and e-business and e-commerce – and only three qualitative indicators are directly comparable between the two editions. Nonetheless, a qualitative comparison can be made based on achievements and challenges identified in the previous edition.

Since 2016, the six SEE economies have taken positive steps to adopt and implement cybersecurity policies, while the development of e-business and e-commerce has remained at the same level. Their regulatory reforms and broadband development have also progressed smoothly, with Kosovo making impressive improvements since 2016. Both Albania and Kosovo have made significant progress in implementing their digital strategies. Montenegro and Serbia have maintained a similar score on average over the two assessment cycles, while Bosnia and Herzegovina's recent adoption of new digital society policies is reflected in a slight performance improvement, although the legal framework is not yet in place and no significant changes have yet been delivered. On the other hand, while the Former Yugoslav Republic of Macedonia received a very positive assessment for ICT in education and e-accessibility in 2016, it has not performed so well in the current broader assessment, which covers e-skills development and e-inclusion. Although the economies have made progress since 2016 in adopting e-accessibility regulations, they have not been fully implemented in public websites and portals, and wider e-inclusion remains a challenging policy area.

Achievements

The six SEE economies have taken positive steps to facilitate broadband development and to align their regulatory frameworks with the European Union (EU) *acquis*. Most of the SEE economies have adopted European broadband policies and regulatory frameworks that allow for palpable improvements in the coverage and speed across communications infrastructures. Most have also set targets such as providing basic broadband to all citizens, using satellite broadband to extend coverage to 100% of the

population and enabling investments in next generation networks to deliver 30 Mbps (megabits per second) by 2020.

Most of the SEE economies have adopted cross-cutting digital strategies to support the development of ICT across all sectors. Most of the SEE economies have also recognised the important role of the ICT sector and have adopted strategies to support its development in co-operation with the information technology (IT) industry.

The six economies have taken steps to strengthen their e-business and e-commerce legal frameworks. They have aligned their sectoral legislation and regulations with the European E-Commerce Directive (2000/31/EC) and have made efforts to address non-legal bottlenecks to e-business take-up, such as building awareness and capacity among small and medium-sized enterprises (SMEs).

Most of the SEE economies have established national Computer Emergency Response Teams (CERTs) and made progress in adopting cybercrime strategies and legislation. Most of them have defined critical information infrastructure (CII), and CERTs or similar teams are in place in a variety of government institutions. The SEE economies, apart from Bosnia and Herzegovina, and the Former Yugoslav Republic of Macedonia, have already adopted policies and legislation relating to digital security matters.

Most of the SEE economies have adopted e-authentication frameworks and improved their e-authentication schemes. Most have adopted updated e-signature legislation, and in some cases they have revised their technology selection to promote the wider use of e-authentication. They are gradually aligning their e-government services with their national interoperability frameworks.

Remaining challenges and key recommendations

- **Enhance the use of ICT for teaching and learning, as well as for developing e-skills for students and professionals**. All six economies have included relevant strategic objectives in their ICT or education sector policies, but none have managed to really transform education by using ICT to take learning to the student and worker, adapt teaching to the learner's needs or adopt multi-device and 24/7 learning approaches. Their competency frameworks are largely outdated, the ICT industry suffers from skills gaps, and schools often lack IT equipment, connectivity and e-curricula. The SEE economies should therefore co-ordinate their education and digital strategies and inject more resources to fund equipment purchases and connection upgrading.
- **Prioritise the inclusion of underprivileged groups in digital strategies.** Policies for e-inclusion are scarce and incomplete. While progress has been made in adopting e-accessibility regulations, there is little enforcement of them for public-sector websites and e-services, and in some cases they are optional. The SEE economies could make the implementation of e-accessibility mandatory and strengthen the relevant capacities in the public sector.
- **Take steps to systematically respect privacy and data protection, especially in social media.** While all six SEE economies have legal frameworks and authorities for personal data protection, online privacy and data abuse issues are still not clearly understood by data controllers in the public and private sector. The SEE economies should increase their public awareness campaigns and enforce

mandatory training for professionals in the private and public sector, following OECD recommendations on privacy and personal data (OECD, 2013c).

- **Promote the adoption of digital technology by SMEs.** Although all of the SEE economies have included some relevant measures in their digital strategies, their activities and programmes have not had any substantial impact on SMEs and should be revised and allocated specific resources. The SEE economies could consider wider campaigns to promote the adoption of e-business and e-commerce and look at the legal and non-legal barriers to increased take-up.

Context

The continuous migration of all kinds of social and economic activities to the Internet has increased the potential for information and communications technology to foster a knowledge society and to strengthen competitiveness. Furthermore, the use of ICT spurs innovation, which in turn can boost productivity and competitiveness (OECD, 2016a). ICT can reduce trading inefficiencies and transaction costs and affect competitive positioning, thereby contributing to rising productivity and economic growth. ICT also has great potential to promote social inclusiveness and to increase citizens' overall well-being. Well-designed digital policies can help the economies of South East Europe (SEE) to seize the huge potential offered by the digital economy within the European Digital Single Market for boosting economic growth and inclusion.

Analysis of the digital society in SEE reveals significant links with other policy areas. ICT plays an increasingly important cross-cutting role, enabling growth and innovation in all sectors. Digitalisation affects all policy domains to some extent, including tourism and culture, transport, access to finance, tax, anti-corruption, agriculture, energy and the environment. However, this chapter has particularly close links to the following chapters in this publication:

- **Chapter 7. Education and competencies** are intertwined with the development of a digital society, while digital technologies can transform teaching and learning inside or outside school. The competitiveness of the SEE ICT industry is reduced by a shortage of skills. In order to seize the opportunities created by digital technologies, individuals have to develop the right set of skills to use the new technologies and to perform new tasks associated with them. This challenges existing skills-development systems, including formal and non-formal education, and training (OECD, 2016e).
- **Chapter 8. Employment policy** includes skills gap analysis, adoption of digital tools for recruitment and matching, and measures for developing a skilled workforce which is in high demand in the ICT industry. The development of the digital economy is expected to boost innovation and start-ups, creating thousands of new jobs. In the near future, 90% of jobs will require some level of digital skills (EC, 2016a).
- **Chapter 9. Science, technology and innovation** in all sectors of the economy are driven by ICT. Digitalisation is the enabling tool for the major changes in scientific practices that can be aggregated under the umbrella of open science (OECD, 2015a). In most OECD countries, ICT accounts for the largest share of business expenditure on research and development (R&D), between 20% and 25%, representing between 0.2% and 0.3% of gross domestic product (GDP) (OECD, 2014).

- **Chapter 16. Public services** that are efficient include e-government services which foster the development of a digital society. Effective e-services require appropriate infrastructure and legislation to enable data exchange and the interoperability of information systems, while ensuring a good balance between access to public information on the one hand and privacy and data protection on the other.

Digital society assessment framework

This chapter analyses digital society development in the six reviewed SEE economies (Albania, Bosnia and Herzegovina, the Former Yugoslav Republic of Macedonia, Kosovo, Montenegro and Serbia) in four broad sub-dimensions:

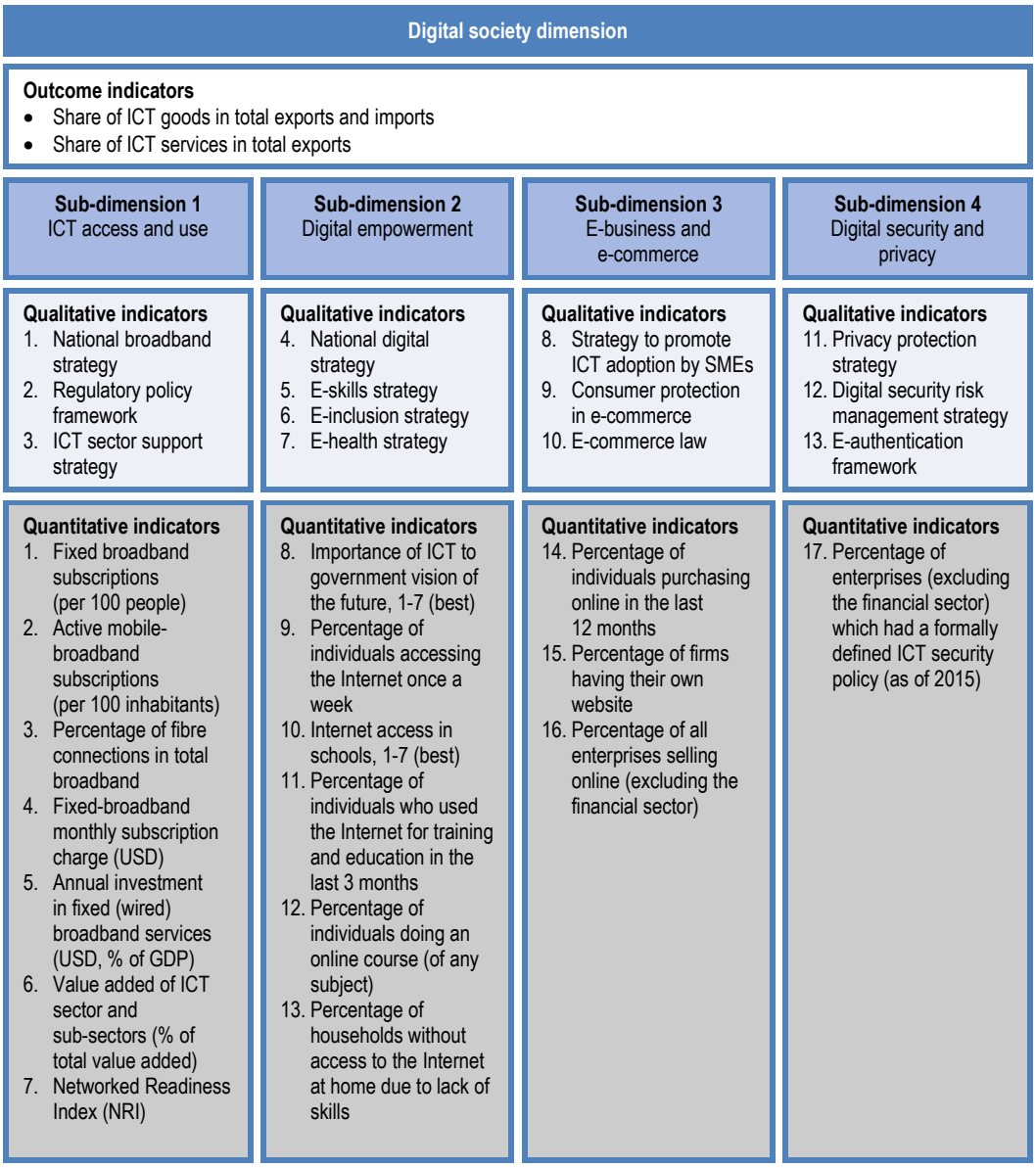
1. ICT access and use: is a strategy in place to develop broadband infrastructure further and has it been implemented? Is the regulatory framework appropriate to foster competition in the ICT sector? Is there a strategy under implementation to support the growth of the ICT sector?
2. Digital empowerment: is a national digital strategy adopted, effectively implemented and monitored? Is there a framework for e-skills development for professionals and students? Is there a policy in place for promoting the e-inclusion of the entire population? Is e-health development part of the digital society agenda?
3. E-business and e-commerce: how actively is the adoption of ICTs by SMEs promoted across all sectors? What measures are taken to promote e-business? Does the framework for consumer protection effectively cover e-commerce transactions? Is the legal framework for e-commerce complete and fully implemented?
4. Digital security and privacy: is a privacy protection strategy being implemented? Has a digital risk management framework been adopted and are institutional capacities in place to implement it? Is e-authentication promoted and are e-services developed on a functional interoperability framework?

Figure 10.2 shows how the sub-dimensions and their constituent indicators make up the digital society assessment framework. Each sub-dimension is assessed through quantitative and/or qualitative information. The OECD collected the qualitative and quantitative data for this dimension with the support of the SEE governments and their statistical offices. Quantitative indicators are based on national or international statistics. Qualitative indicators have been scored in ascending order on a scale of 0 to 5, and are summarised in Annex 10.A1.[2] For more details on the methodology underpinning this assessment please refer to the methodology chapter.

Digital society performance in SEE economies

The proportion of imports of ICT goods as a share of all imports is a gauge of how well ICT has been absorbed into society and the sophistication of its use. Imports of ICT goods have remained stable over time and are uniform across the six SEE economies at 3-4% (World Bank, 2017b). This is about half the European Union (EU) average (7.9%) and significantly lower than the 9% average for Central Europe and the Baltics (CEB)[3] (World Bank, 2017b). This shows that while CEB countries are catching up with Western Europe through increased imports, for the SEE economies the overall gap seems to be widening.

Figure 10.2. **Digital society assessment framework**

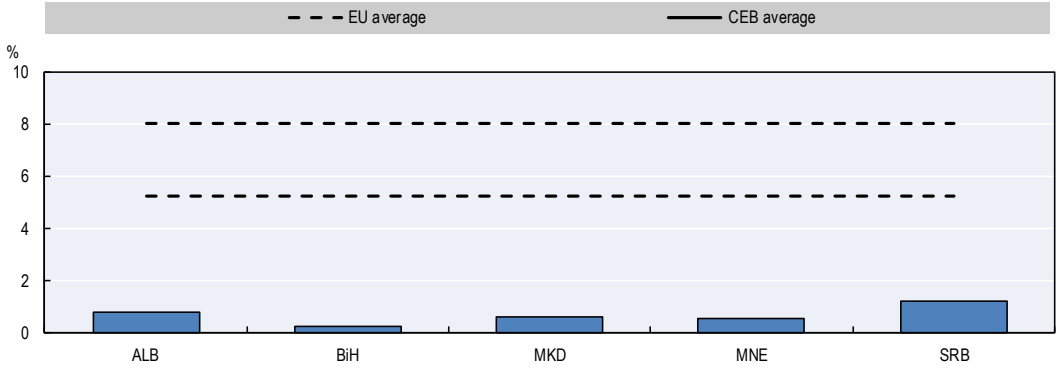


On the other hand, a closer look at exports of ICT goods and services in 2015 (Figures 10.3 and 10.4) reveals that the competitive strength of the ICT sector varies across the SEE economies. Serbia has the greatest proportion of ICT goods exports, but at 1% of overall goods exports this is still significantly below both the EU and CEB averages. Serbia also has the greatest proportion of ICT services exports, reaching the EU average of 35% of all services exports, followed by the Former Yugoslav Republic of Macedonia at 22%, which is very close to the CEB average of 25%. The share among the other four SEE economies ranges between 8% and 12%, significantly below the CEB average. The available data thus suggest that SEE economies are stronger at exporting ICT services than goods, but in most cases their performance is weak. Note that these service exports include computer and communications services (telecommunications and postal and courier services) and information services (computer data and news-related service transactions), which also encompass lower value-added services, such as call

centres. The right digital society policies and a commitment to developing an environment conducive to innovation and the digital economy could help the SEE economies realise the potential for growth in the ICT sector.

Figure 10.3. **ICT goods exports (2015)**

% of goods exported, BoP



Note: Data for Kosovo are missing. CEB – Central Europe and the Baltics (Bulgaria, Croatia, the Czech Republic, Estonia, Hungary, Latvia, Lithuania, Poland, Romania, the Slovak Republic and Slovenia); BoP – balance of payments.

Source: World Bank (2017b), *TCdata360* (database), https://tcdata360.worldbank.org.

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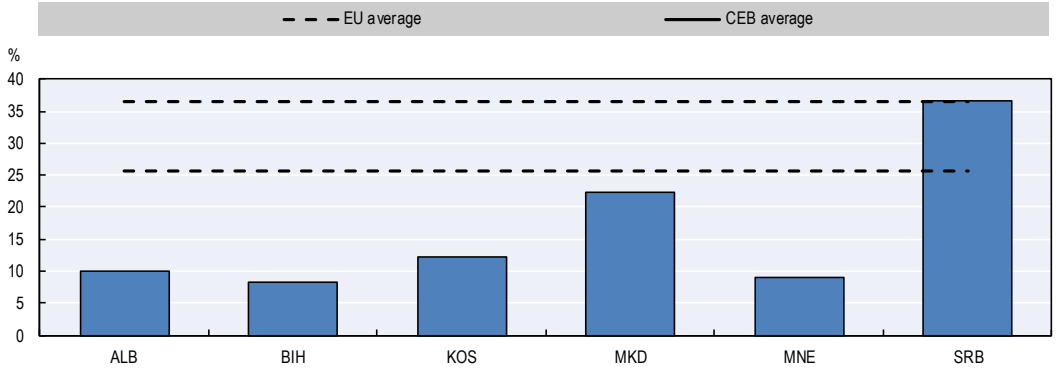
Figure 10.4. **ICT services exports (2015)**

% of services exported, BoP



Note: CEB – Central Europe and the Baltics (Bulgaria, Croatia, the Czech Republic, Estonia, Hungary, Latvia, Lithuania, Poland, Romania, the Slovak Republic and Slovenia); BoP – balance of payments.

Source: World Bank (2017b), *TCdata360* (database), https://tcdata360.worldbank.org.

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ICT access and use

The European Digital Single Market (DSM) strategy demonstrates the importance of the digital economy for the European Union, making it one of the ten top political priorities of the European Commission (EC). The DSM has three objectives: 1) making it

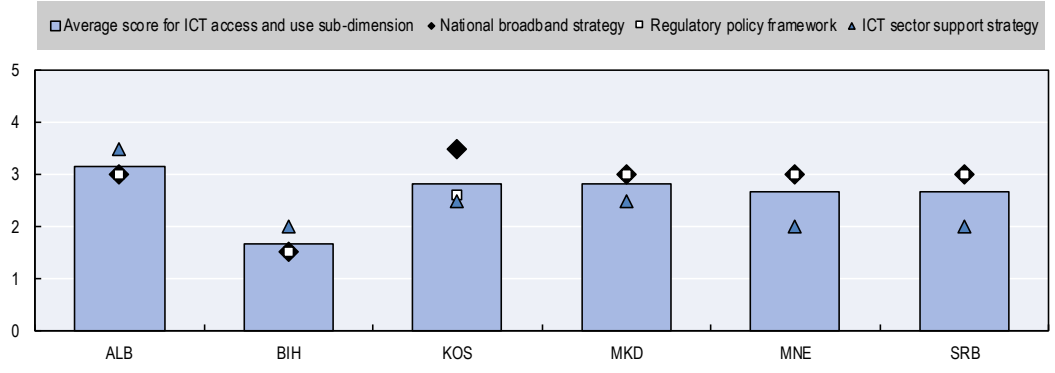
easier for consumers and businesses to access online products and services across Europe; 2) improving conditions for digital networks and services to grow and thrive; and 3) boosting the growth of the European digital economy (EC, 2015a). Achieving these ambitious objectives requires boosting investments in next generation broadband infrastructure to ensure fast, reliable and affordable connectivity for all citizens. It also means implementing regulatory safeguards to facilitate competition, technology neutrality[4] and ICT industry growth (EC, 2015a).

The ICT access and use sub-dimension includes three qualitative indicators:

- The **national broadband strategy** indicator assesses whether the SEE economies have adopted policy documents that define measurable objectives for broadband development, accompanied by concrete action plans with budgets and accountable actors, and which include adequate co-ordination tools, as well as processes to monitor and evaluate implementation (OECD, 2004a).
- The **regulatory policy framework** indicator measures whether the SEE economies have adopted and implemented an ICT regulatory policy framework, and whether they are monitoring its impact on society and the economy. This indicator also assesses whether the ICT regulatory framework follows the key elements of the OECD Recommendations on Regulatory Policy and Governance (Box 10.1; OECD, 2012a).
- The **ICT sector support strategy** indicator measures whether the SEE economies have a coherent strategy to support the sector and ICT industry, and to what extent it has been implemented. The assessment analyses whether the strategy promotes research and development programmes on emerging ICTs, access to capital mechanisms, ICT standards, ICT exports and foreign direct investment in ICT.

The six SEE economies have largely made significant progress in transposing the EU 2009 regulatory framework for telecoms and increasing broadband penetration through the implementation of relevant policies, although some challenges remain. On average, the SEE region scores over 2.5 out of 5 on this sub-dimension, and a closer look reveals that only Bosnia and Herzegovina falls below this average (Figure 10.5). The other five economies are implementing broadband policies and regulatory frameworks and have support strategies for the ICT industry in place.

Figure 10.5. **ICT access and use: Sub-dimension average score and indicator scores**



Note: See the methodology chapter for information on the *Competitiveness Outlook* assessment and scoring process.

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All of the SEE governments have recognised the growth potential of the ICT sector and its industry, which is reflected in the proliferation of ICT sector support policies adopted in the last couple of years. Although resources to support the IT industry are still scarce, governments are demonstrating a renewed interest in promoting it as a cross-sectoral driver of entrepreneurship and innovation.

Broadband strategies are helping to improve availability and demand

Broadband development policies drive the development of action plans and legal or regulatory reforms. These in turn influence the selection of technologies, ensure universal access to broadband and help to create demand for broadband services and applications. In recent years, the SEE economies have made significant progress in setting up appropriate broadband policies.

Five of the six SEE economies score 3 or more out of 5 on the national broadband strategy indicator (Figure 10.5). The exception – Bosnia and Herzegovina – only adopted its long-term draft policy on Electronic Communications for 2017-2021 in March 2017, though without full consensus being achieved at all levels of government. Recently, the Ministry of Communications and Transport of Bosnia and Herzegovina set up a working group to prepare the national broadband strategy, which is expected to be submitted to the Council of Ministers for adoption by the end of 2017. Albania and Serbia are implementing dedicated broadband strategies that align with their digital strategies. In fact, Serbia completed its broadband strategy in 2016 and is preparing a new strategy for adoption in 2017. Kosovo and Montenegro have incorporated their broadband development policies into their digital strategies. In Kosovo the policy has been more than halfway implemented and funds have been secured for the next period, including a World Bank loan for EUR 37 million for rural broadband infrastructure development. Montenegro has transitioned from the successfully implemented Information Society Strategy 2012-2016 to the new Strategy for the Development of the Information Society by 2020, which was launched in 2017. This continuity in broadband policy implementation is reflected in its indicator score.

The Former Yugoslav Republic of Macedonia currently lacks a dedicated national broadband strategy. One was initially planned for 2016 according to the adopted short-term ICT Strategy 2016-2017. Nevertheless, the short-term ICT Strategy along with the Regulatory Strategy 2012-2016 of its telecoms regulator, the Agency for Electonic Communications (AEK), have consistently driven broadband development. The Regulatory Strategy had achieved nearly 100% of its objectives by the end of 2016.

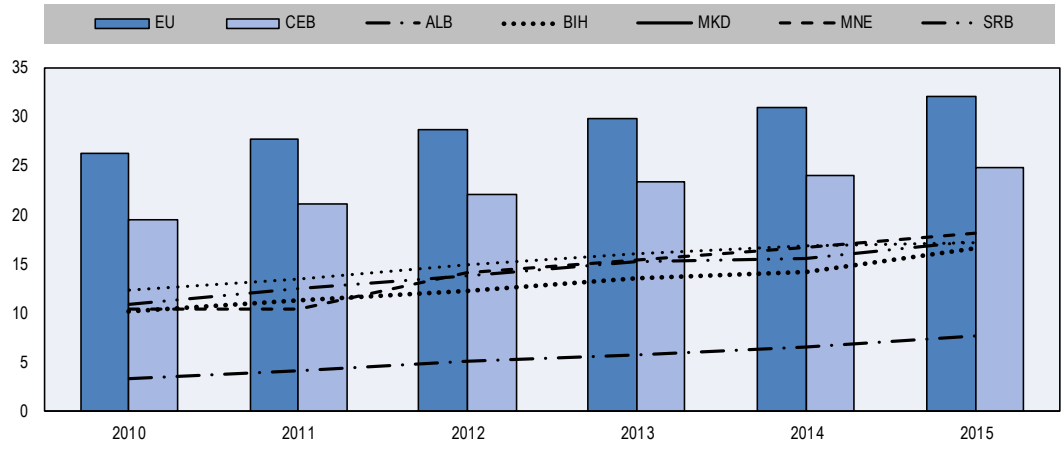
Two quantitative indicators demonstrate the progress achieved in broadband development in the SEE region: fixed broadband subscriptions per 100 inhabitants (Figure 10.6) and active mobile-broadband subscriptions per 100 inhabitants (Figure 10.7).

Fixed (wired) broadband subscriptions remain lower than the EU and CEB averages, while the cumulative growth across all of the SEE economies from 2010 to 2015 was 101%, equal to the EU and the CEB averages (100%). This indicates that the SEE economies are not catching up with the EU and CEB averages. The SEE region has traditionally ranked low in fixed network penetration, because of shortcomings in its wired infrastructure. Mobile network connectivity has gone some way to address this, but the SEE governments recognise that wireless broadband development cannot replace fixed-line infrastructure mainly due to bandwidth limitations – for example, fibre to the home connections deliver 1 Gbps (gigabit per second) as opposed to 337 Mbps (megabits

per second) for mobile broadband. Their strategies therefore prioritise the development of next generation wired infrastructure.

Figure 10.6. **Fixed broadband subscriptions (2010-15)**

Per 100 inhabitants



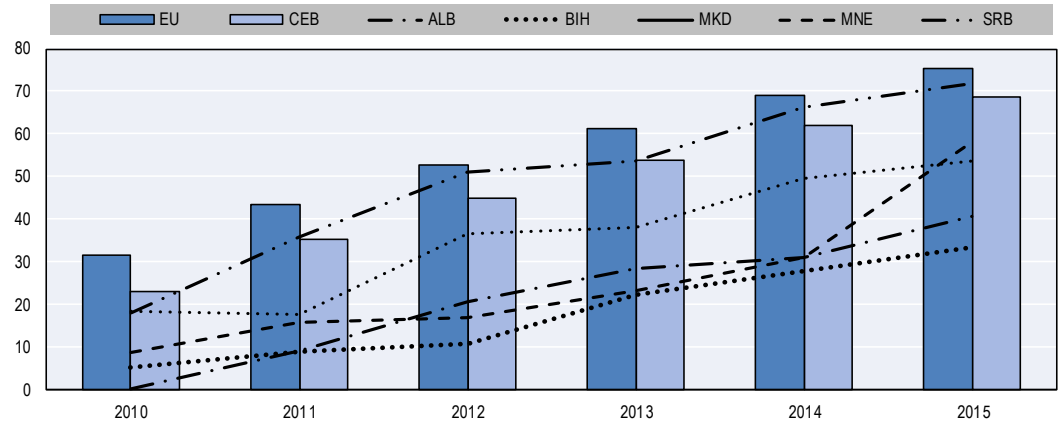
Note: Data for Kosovo not available. CEB – Central Europe and the Baltics (Bulgaria, Croatia, the Czech Republic, Estonia, Hungary, Latvia, Lithuania, Poland, Romania, the Slovak Republic and Slovenia).

Source: ITU (2017), *World Telecommunication/ICT Indicators Database*, www.itu.int/en/ITU-D/Statistics/Pages/publications/wtid.aspx.

StatLink http://dx.doi.org/10.1787/888933705214

Figure 10.7. **Active mobile-broadband subscriptions (2010-15)**

Per 100 inhabitants



Note: Data for Kosovo not available. CEB – Central Europe and the Baltics (Bulgaria, Croatia, the Czech Republic, Estonia, Hungary, Latvia, Lithuania, Poland, Romania, the Slovak Republic and Slovenia).

Source: ITU (2017), *World Telecommunication/ICT Indicators Database*, www.itu.int/en/ITU-D/Statistics/Pages/publications/wtid.aspx

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Data collected from statistical offices as part of the assessment process suggest that the penetration of fibre connections is increasing in the SEE region. For example, in Kosovo, fibre connections reached 10% of total broadband connections in 2016. This is the highest of the six economies, although still well below the 20.1% for OECD countries on average (OECD, 2017b). According to data from the International Telecommunication Union (ITU), annual investments in fixed broadband services are growing in Albania, Bosnia and Herzegovina, and Serbia (ITU, 2017). In Albania, sharply accelerating investments reached USD 91 million in 2013 or 0.71% of GDP. However, although data are scarce, annual investments are not regularly this high in any of the six economies and usually range between USD 15 and 35 million per year in each economy.

Another quantitative indicator is the Networked Readiness Index of the World Economic Forum, which measures how economies use the opportunities offered by ICT for increased competitiveness and well-being. On this indicator, the six SEE economies rank closely alongside the CEB states. The Former Yugoslav Republic of Macedonia ranks 46th out of 139 economies, scoring 4.4 out of 7 on this index, closely followed by Montenegro with 4.3. It is interesting to observe that the Czech Republic and Slovenia ranked 36th and 37th respectively in the same assessment, while Croatia was 54th, ranked below Montenegro in 51st place (WEF, 2016).

Regulatory reforms are promoting investment in the ICT sector

Regulatory policies play a pivotal role in ensuring a stable environment that attracts and justifies major investments in technological infrastructure, as well as guaranteeing basic user rights in the digital age. In the challenging ICT sector, the capacity of regulatory frameworks to promote digital development depends on a policy mix of regulatory best practice and market mechanisms to promote competition (e.g. well-designed privatisation of incumbents), innovation and investment.

Most of the SEE economies are actively implementing regulatory frameworks for electronic communications, which is reflected in the average score of over 2.5 out of 5 on the regulatory policy framework indicator (Figure 10.5).

Alignment with the EU 2009 regulatory framework is complete in Albania, Montenegro and the Former Yugoslav Republic of Macedonia, which have all fully privatised their telecom incumbents. Serbia is preparing a new Law on Electronic Communications that should remove all competitive safeguards protecting the state-owned incumbent operator. In Albania the independence of the regulator is guaranteed by the national assembly, and the financial independence of the regulator in Montenegro was achieved through an amendment to the Electronic Communications Law in 2016. In the Former Yugoslav Republic of Macedonia, although the regulator is not precisely following EU regulatory practices in managing its budget independently, its budget is subject to public consultation and any surplus is allocated to projects of public interest (not necessarily in the ICT sector).

Kosovo, however, has still not amended its Law on Finances to provide financial independence to its telecom regulator, while its incumbent operator has still not been privatised after two failed attempts. Bosnia and Herzegovina has yet to complete the transposition of the EU 2009 regulatory framework: a new Law on Electronic Communications is being prepared and its adoption will hopefully improve the economy's compliance with EU regulatory practices. The adoption of the Electronic Communications policy at the state level in March 2017 is a positive step in this direction, but the appropriate legal and regulatory framework also needs to be adopted and to become effective. Moreover, it is noted that full consensus was not achieved at all

levels of the government for the adoption of this policy. The OECD recommendations on regulatory policy and governance could be considered by the government in Bosnia and Herzegovina as an excellent tool to implement the necessary regulatory reforms (Box 10.1).

Box 10.1. **OECD recommendations on regulatory policy and governance**

The *Recommendation of the Council of the OECD on Regulatory Policy and Governance* is the first comprehensive international statement on regulatory policy since the global financial and economic crisis uncovered major failings in governance and regulation, which have undermined trust in public and private institutions alike. Amid ongoing economic uncertainty, establishing a well-functioning national regulatory framework for transparent and efficient markets is central to re-injecting confidence and restoring growth. The recommendation:

- provides governments with clear and timely guidance on the principles, mechanisms and institutions required to improve the design, enforcement and review of their regulatory framework to the highest standards
- advises governments on the effective use of regulation to achieve better social, environmental and economic outcomes
- calls for a "whole-of-government" approach to regulatory reform, with emphasis on the importance of consultation, co-ordination, communication and co-operation to address the challenges posed by the inter-connectedness of sectors and economies.

Source: OECD (2012a), *Recommendation of the Council of the OECD on Regulatory Policy and Governance*, http://dx.doi.org/10.1787/9789264209022-en.

Most of the SEE regulators are facilitating investments in next generation networks, adopting regulations on infrastructure sharing and rights of way,[5] as well as using georeferenced databases to map broadband infrastructure, as for example in Albania and Montenegro. The Former Yugoslav Republic of Macedonia has taken measures to promote competition by lowering spectrum fees. In 2012 the regulator, AEK, decreased the radio frequencies' fee for LTE 800 by 50% (LTE stands for Long Term Evolution, a 4G wireless communications standard), lowering them below the fees for the 900 MHz (megahertz) spectrum, and thus successfully implementing a tender processes for the 800 MHz spectrum acquisition. It further decreased all spectrum fees by 20% in 2014, and finally in May 2017, through an amendment to the by-law on radio frequency fees, decreased fees by 50% for the spectrum above 55 GHz (gigahertz) and by 43-76% for the 2.3-3 GHz and over 3 GHz bands, intended for land mobile broadband services. Nevertheless, there is room for further improvement in facilitating investments in next generation networks in the SEE region. For instance, in Bosnia and Herzegovina processes and fees for network infrastructure construction works have not been harmonised at the municipal level, complicating and discouraging investments in this area.

The SEE economies are still in the process of developing broadband services further as a result of the digital dividend[6] realised by the switchover from analogue to digital broadcasting. The digital switchover is complete in the Former Yugoslav Republic of Macedonia, Montenegro and Serbia, but has been delayed in the other three economies. Albania has progressed significantly and is close to completing the analogue switch-off, while the government has decided to subsidise DVB-T2/MPG4 decoders for all families in need. Kosovo is expected to adopt its Digital Switchover Strategy in 2017, which will

be implemented by the Independent Media Commission. Progress has been very slow in Bosnia and Herzegovina, where jurisdiction and equipment ownership issues are still causing significant delays in implementing the switchover.

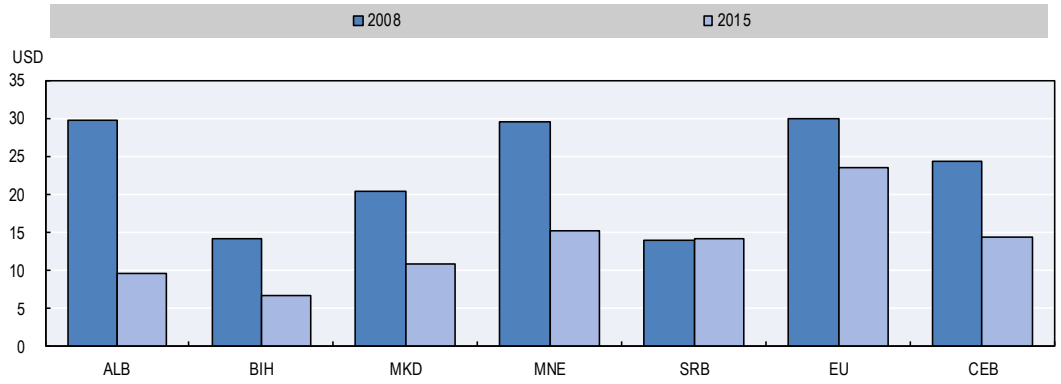
The six SEE economies have made significant progress in ensuring public participation in the ICT regulatory process through public consultations and in regularly publishing reports with indicators monitoring the development of the electronic communications market. On the other hand, regulatory impact assessment (RIA) is unevenly institutionalised and practised in the economies. The Former Yugoslav Republic of Macedonia adopted a new obligatory RIA framework in 2014 and all RIA processes are publicly available online on the website of the National Register for Electronic Regulation. Serbia has established the Secretariat for Public Policy and Montenegro has created the Secretariat for Legislation to manage the RIA process. Albania has also made impact assessments compulsory, but they are usually performed only from a financial perspective. Bosnia and Herzegovina has not yet adopted a RIA methodology. However, none of the economies are consistently practising RIA for every policy or legislative act, even in the case of the Former Yugoslav Republic of Macedonia, which has the most complete RIA framework in place, or in Montenegro and Serbia, where RIA documents are not always made public.

The fixed-broadband monthly subscription charge indicator (Figure 10.8) illustrates the positive impact of these regulatory reforms in ensuring a competitive communications market with more affordable connectivity. Globally, the monthly average price of a basic fixed-broadband connection[7] has fallen from around USD 80 in 2008 to USD 25 in 2015 (ITU, 2016). Subscription costs have also fallen in the six SEE economies, as in the EU Member States (Figure 10.8). However, this indicator requires careful interpretation: since every economy reports the cost of their "basic" broadband connectivity subscription, this can reflect completely different offerings in terms of broadband speed. For example, the EU average monthly charge for a basic broadband connection was USD 23.65 in 2015, but this corresponds to a considerably higher speed (e.g. 100 Mbps in Ireland) than in the SEE economies (where the respective broadband speed is around 2 Mbps). In addition, in 2015 the GDP per capita in purchasing power standards in CEB was 69% of the 28 EU Member States (EU-28), compared to 35% of the EU-28 in the SEE economies, meaning a basic broadband connection was more expensive in SEE than in the CEB or the European Union.

ICT sector support strategies are largely in place

The ICT sector is an important contributor to growth in almost every economy around the world. Between 2001 and 2011, ICT accounted for 30% of GDP growth in the EU and for 55% in the United States (EC, 2015a). Governments in general have been moving away from a "push" role – supporting the sector by ensuring the right environment for the provision of ICT infrastructure and the development of the domestic ICT sector – towards "pull" strategies aimed at promoting digital literacy; establishing an enabling environment for ICT, including an appropriate legal framework; and fostering the development of applications, including local content. Governments are now focusing on supporting the IT sub-sector and the adoption of ICT by businesses as an enabler of innovation and growth.

Figure 10.8. **Trends in fixed-broadband monthly subscription charges (2008-15)**



Note: Data for Kosovo not available. CEB – Central Europe and the Baltics (Bulgaria, Croatia, the Czech Republic, Estonia, Hungary, Latvia, Lithuania, Poland, Romania, the Slovak Republic and Slovenia).

Source: ITU (2017), *World Telecommunication/ICT Indicators Database*, www.itu.int/en/ITU-D/Statistics/Pages/publications/wtid.aspx.

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All six SEE economies have adopted strategies to support the ICT sector directly or indirectly. The average score for the ICT sector support strategy indicator is close to 2.5 out of 5, which implies that relevant strategies have been adopted by the six governments, but implementation is still at the early stages in most of the SEE economies (Figure 10.5). These strategies have strengthened cross-government co-ordination and the participation of industry representatives in the preparation and implementation of activities. Serbia and Kosovo have adopted dedicated strategies for the development of the IT industry, promoting exports and outsourcing services, which were driven by the industry itself. The other four economies have incorporated measures into their broader digital strategies to support the ICT sector. They all focus on supporting ICT-related start-ups and establishing innovation funds or hubs and technology parks to facilitate entrepreneurship in this field, as in the case of Kosovo, Albania, Montenegro and Bosnia and Herzegovina. However, in all of the SEE economies, support activities for the IT sector rank fairly low in priority and resource allocation. This results in significant delays in implementing their action plans. The scarcity of financial resources is exacerbated by insufficient planning of financial support schemes, such as innovation vouchers in the Former Yugoslav Republic of Macedonia or start-up loans in Serbia, limiting the programmes' impact. International donor financing has often preceded government policies; for example it has been mobilised for the development of incubators and innovation hubs in Tirana, Albania and in Banja Luka and Mostar, Bosnia and Herzegovina, and also in Pristina, Kosovo.

The contribution (relative weight) of the ICT sector in some of the SEE economies is even higher than the EU average. For example, according to figures received from government statistical offices as part of the assessment process, in the Former Yugoslav Republic of Macedonia, the ICT sector generated more than 8.3% of GDP on average during 2010-15, and 5.8% in Albania and the Republika Srpska of Bosnia and Herzegovina (one of the constitutional and legal entities of Bosnia and Herzegovina[8]). Serbia's ICT sector was the largest in absolute value, contributing EUR 1.5 billion to the economy in 2014 (4.3% of GDP).

The communications sub-sector is the major contributor to ICT sector growth in the SEE economies, but the IT sub-sector (including IT services, software and equipment) has also gained ground. As the world market continues to move towards outsourced software engineering, and offshore systems design and integration, the SEE economies are well placed both geographically and structurally to provide cost-effective, reliable alternatives to more established markets like the Czech Republic or Bulgaria. Many key global players such as Microsoft, Oracle, Google, Hewlett Packard, SAP, IBM, Siemens, Intel and Cisco have already tapped into the potential of the Serbian IT industry by establishing development centres in Serbia or outsourcing services to local IT companies. Geographical and cultural ties, and good literacy levels in German and English, make the region a competitive outsourcing destination for call centres for Western European companies. For instance, Kosovo has strengthened its presence as an outsourcing destination for German IT companies, exploiting links with its diaspora in Germany. The Serbian IT market was worth some EUR 433.1 million in 2014 (Matijević and Šolaja, 2015). It is worth noting, however, that besides the highly knowledge-intensive activities such as software development, the IT sub-sector also covers outsourcing of call centres, which is a lower value-added activity.

However, the assessment also found that excessive government focus on promoting the SEE IT industry as an outsourcing destination is not embraced by some of the local stakeholders in the Former Yugoslav Republic of Macedonia and Kosovo. They have expressed concerns that the outsourcing service provision drains domestic companies and stifles their potential to develop competitive products for the global market by occupying skilled professionals on less than innovative activities.

The way forward for ICT access and use

As the SEE economies look to the future, they might consider a number of additional policy interventions to further support ICT access and use, some of which are inspired by the Recommendation of the Council on Broadband Development (OECD, 2004a).

The Former Yugoslav Republic of Macedonia could prioritise adopting a long-term ICT strategy that promotes broadband development and supports the ICT industry. See also the relevant Action Point IV.1.1.a in the Multi-annual Action Plan for the Western Balkans (WB6 MAP): "Advance right/introduce policy and regulatory measures that would incentivise for investments in high speed broadband networks, including transposition of EU directive 2014/61/EU" (MAP, 2017). Early involvement of all actors in the development of action plans could increase their ownership of these plans, facilitating implementation and promoting accountability.

Kosovo and Bosnia and Herzegovina could intensify their efforts to complete the digital switchover in order to reap the benefits of the digital dividend. They could consider reviewing the process followed so far to identify any obstacles and shortcomings in the operational models and technologies chosen for the digital switchover, and modify them as needed to accelerate completion. Under the Digital Single Market, the European Commission has proposed an EU-wide approach to the use of the ultra-high frequency (UHF) band for the use of the 700 MHz band for mobile service and rural broadband services (EC, 2016b). All the SEE economies should take the opportunity to review this proposal. See also the relevant Action Point IV.1.2.a ("Establish predictable, consistent, and harmonized spectrum") in the WB6 MAP (MAP, 2017).

Albania, Kosovo, Montenegro and Serbia could accelerate the planning and implementation of rural broadband development, exploiting funding opportunities from international donors where available. The economies should identify and carefully analyse white areas and select a suitable intervention model, including public-private partnerships if appropriate, to avoid disrupting market competition. See also the relevant Action Points IV.1.1.b ("Complete outstanding broadband infrastructure mapping and perform analysis of broadband markets and identify network coverage gaps and investments, as well as policy measures required to bridge those gaps") and IV1.1.c ("Establish regular exchange on business incentive models for rural and underserved areas and on the use of PPPs to address low connectivity") in the WB6 MAP (MAP, 2017).

Bosnia and Herzegovina could consider legislative interventions in each entity to harmonise municipalities' fees and processes for constructing technological infrastructure and to accelerate investments in next generation networks, particularly in the Federation of Bosnia and Herzegovina. Bosnia and Herzegovina could also seek to strengthen co-operation between State and entity-level authorities to accelerate the adoption of a legal framework for electronic communications that fully transposes the EU 2003 and 2009 regulatory frameworks (EC, 2015b).

The Former Yugoslav Republic of Macedonia and Kosovo could consider reviewing their policies to examine how they can **strike a balance between promoting their ICT industries as an outsourcing destination and supporting the industry to innovate and export its own ICT products**.

Finally, **all of the SEE economies could consider further increasing their efforts to implement *ex ante* impact assessments of policy and regulatory interventions,** and also to strengthen *ex post* monitoring and evaluation practices. They could consider providing training to the officials tasked with these activities, which often require specialised technical skills.

Digital empowerment

OECD countries have acknowledged the need to develop the digital economy in a strategic manner in order to widen its benefits and respond to key challenges such as reducing unemployment and inequality, and lifting people out of poverty (OECD, 2015a). The EU's Digital Agenda (EC, 2010) emphasises that digitalisation not only promises to increase productivity, but can also help address pressing policy challenges, promoting inclusion by addressing the special needs of disadvantaged social groups (OECD, 2016a).

The digital empowerment sub-dimension examines the adoption and implementation of policies that promote the development of e-content and e-services that enable the digital economy, foster digital skills and deliver the promise for a more inclusive and healthier society. The sub-dimension comprises four qualitative indicators (Figure 10.9):

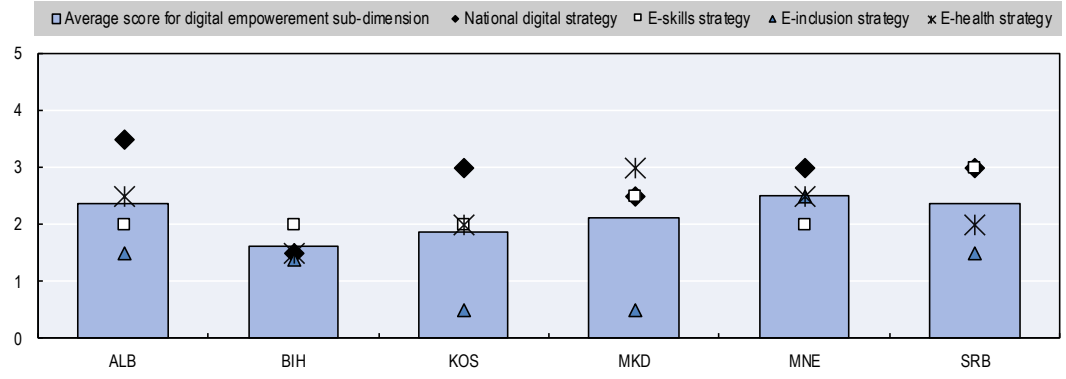
1. The **national digital strategy** indicator measures whether a coherent whole-of-government approach to digitalisation exists and to what extent resulting policy measures are being implemented and evaluated.
2. The **e-skills strategy** indicator assesses whether the economies have adopted an e-skills strategy aiming to equip citizens with the skills required to contribute to and benefit from digitalisation. It also measures how far it has been implemented, and whether its policy actions are being monitored and adjusted. It examines how

ICTs and e-curricula are promoted in education, if relevant competency frameworks are in place and if lifelong learning is supported.

3. The **e-inclusion strategy** indicator measures whether the economies have adopted a strategy to overcome the exclusion of disadvantaged groups from the digital society. It assesses whether accessibility of public websites and e-services meet international guidelines and if accessibility requirements are promoted in public procurement processes for ICT.

4. The **e-health strategy** indicator looks at whether an e-health strategy (to use ICT to improve the efficiency of the healthcare system) has been adopted and is being implemented. It assesses whether economies have the legislation and regulatory components needed for e-health records, information systems interoperability, liability and compliance with international health standards.

Figure 10.9. **Digital empowerment: Sub-dimension average scores and indicator scores**



Note: See the methodology chapter for information on the *Competitiveness Outlook* assessment and scoring process.

StatLink http://dx.doi.org/10.1787/888933705271

The average overall score in the digital empowerment sub-dimension is slightly over 2 out of 5, reflecting the fact that all of the SEE economies have digital empowerment policies and legal frameworks in place, but have only just started to implement them. Montenegro, Albania and Serbia are in the lead, followed by the Former Yugoslav Republic of Macedonia.

E-skills and e-health have both received an average score above 2 across the SEE economies, but the degree of policy implementation varies significantly, mainly depending on each government's capacity to allocate substantial resources or to mobilise donor support.

Kosovo is lagging in the implementation of its policies on e-skills, e-inclusion and e-health. Bosnia and Herzegovina scores below the average, since it only adopted its Information Society 2020 policy in May 2017 and still needs to prepare a two-year entity-level action plan. However, it has not achieved full consensus at all levels of government for the adoption of this policy.

The SEE economies have mostly made little progress in adopting policies for e-inclusion and even less in implementing activities to support participation in the digital economy among all population groups at risk of exclusion due to age, gender, geographical or ethno-cultural diversity. Montenegro stands out as having done more to implement e-inclusion policies than the others.

Cross-cutting digital strategies are becoming better co-ordinated

National digital strategies are an important policy instrument for the successful implementation of digitalisation and to ensure equal access to the benefits of the digital economy. A national digital strategy is cross-sectoral and aims to strengthen an economy's overall competitiveness, economic growth and social well-being (OECD, 2015a). It addresses all members of society (public and private sector) and focuses on supply-side (e.g. infrastructure development) and demand-side (e.g. e-skills) policy objectives.

Overall, the national digital strategies indicator was the highest scoring indicator in this sub-dimension, scoring close to 3 out of 5 (Figure 10.9). Four of the six economies (Albania, Kosovo, Montenegro and Serbia) have adopted policy and legal frameworks and are making progress implementing them. During the last two years, these SEE governments have made significant progress in setting up co-ordination mechanisms (e.g. inter-ministerial co-ordination instruments) to accelerate the implementation of their cross-cutting digital strategies. This progress is reflected in their respective scores (3 or more out of 5) for the digital strategy indicator (Figure 10.9). Bosnia and Herzegovina, however, has not yet started implementing its recently adopted policy for the Information Society 2016-20. In the Former Yugoslav Republic of Macedonia, short-term strategic documents drive digital development, since the economy currently lacks a long-term vision.

Albania established the Integrated Policy Management Group for Good Governance and Public Administration in 2015 to co-ordinate the implementation of its Public Administration Reform and Digital Agenda strategies. Kosovo has adopted the Strategy for Improving Policy Planning and Co-ordination 2016-2018, which outlines an Integrated Planning framework implemented by an inter-ministerial Strategic Planning Committee chaired by the prime minister. It co-ordinates the National Development Strategy with the implementation of all sectoral and cross-cutting strategies, including the Cross-cutting Digital Agenda Strategy 2013-2020 and the Economic Reform Programme, which has incorporated the Kosovo Digital Economy Programme since 2016. Thus, the implementation of the digital strategy fits into an overarching policy plan for the development of the economy.

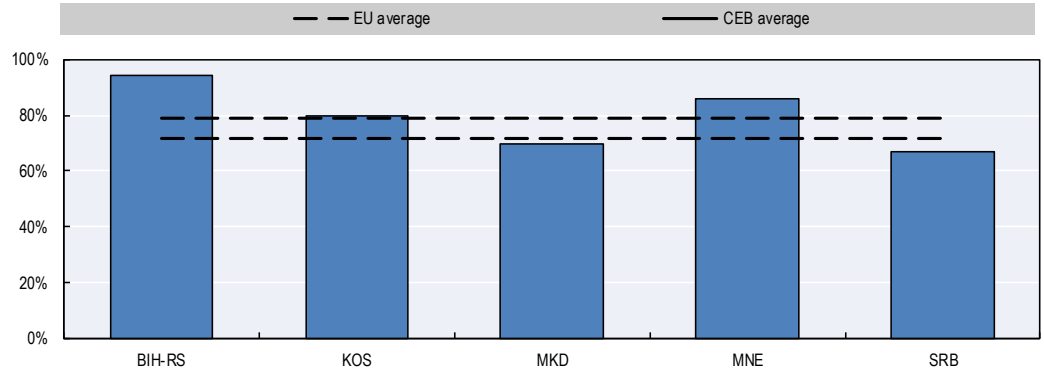
Serbia has created the ministerial Council for Innovative Entrepreneurship & IT to co-ordinate the implementation of the digital agenda strategy, which combines the Electronic Communications and Information Society strategies with the new IT Industry Development strategy. The council was responsible for developing a two-year action plan for 2017-18 to implement the IT industry strategy. Montenegro has transitioned from a well-implemented Information Society Strategy for 2012-2016 to the strategy for the next period, 2017-20. It has put in place a new expert working group to monitor implementation. However, the Ministry for Information Society and Telecommunications ceased operation in November 2016, which could adversely affect the co-ordination and ownership of the new strategy, which is now delegated to three line ministries: economy, education and public administration.

The Former Yugoslav Republic of Macedonia has a lower score for the national digital strategy indicator, since its short-term ICT strategy, which includes ICT infrastructure and services, e-skills, and information society development, only partially covers important aspects of a digital strategy. The economy lacks a long-term vision in this domain and although a long-term national digital strategy was planned for 2016, it was postponed due to the political situation. Bosnia and Herzegovina adopted an information society policy for 2016-20 in May 2017, despite a lack of consensus across all levels of

government. The implementation of this policy has not yet started. The government also agreed to establish 33 working groups for the EU integration process in March 2017, which will be facilitated by the Directorate for EU Integration. The working groups will be formed at ministerial level, comprising representatives from all relevant authorities and bodies at the state, entity and cantonal levels, and will have a catalytic effect on major reforms. One of the working groups – Working Group No. 10 for Information Society and Media – will cover the digital society.

The quantitative indicator measuring the share of individuals accessing the Internet once a week (Figure 10.10) measures how far the digital society has developed and is penetrating society in the SEE economies.

Figure 10.10. **Percentage of individuals accessing the Internet once a week (2016)**



Note: Data for Albania not available. Data for Bosnia and Herzegovina available only for the Republika Srpska. Data for usage in the last 3 months before the survey. CEB – Central Europe and the Baltics (Bulgaria, Croatia, the Czech Republic, Estonia, Hungary, Latvia, Lithuania, Poland, Romania, the Slovak Republic and Slovenia).

Source: SEE governments; Eurostat (n.d.), *Digital Economy and Society Database*, http://ec.europa.eu/eurostat/web/digital-economy-and-society/data/database.

StatLink http://dx.doi.org/10.1787/888933705290

Another quantitative indicator – the World Economic Forum's indicator on "importance of ICTs to government vision of the future" – assesses the extent to which the government has a clear plan to use ICT to improve overall competitiveness. The majority of the SEE and CEB economies scored 3-4 out of 7 in 2016 for this indicator, where 7 is the top score (World Bank, 2017b). Albania demonstrated a positive improvement from previous years (from 3.7 to 3.9), while the Former Yugoslav Republic of Macedonia (4.8) and Montenegro (4.3) had the highest score of the SEE economies in 2016. Estonia (5.0) was the clear CEB leader in this assessment, followed by Lithuania (4.2), which scored below Montenegro. Luxemburg (5.7) led the EU in this measure, while all other EU economies scored under 5 (World Bank, 2017b). Nevertheless, the above assessment does not reflect the changes that took place in the last couple of years, which have been described in the current publication.

Skills gaps are being tackled but some groups are at risk of being left behind

The availability of e-skills is vital for the ICT sector, enabling innovation in the digital economy and determining the capacity of individuals to reap the benefits of digital services. Shortages and mismatches in e-skills, and the resulting digital divide, undermine

economic growth and competitiveness in Europe (EC, 2016a). Comprehensive e-skills strategies ensure that education systems provide students and professionals with digital competencies. They should also be strongly linked to e-inclusion strategies to address challenges for groups at risk of exclusion from the digital economy due to age, disability, lack of skills, cultural background, income, or location. The two indicators that assess how SEE economies have addressed strategies for e-skills and e-inclusion are discussed here together.

The SEE economies have started to address e-skills development, but both resources and implementation are limited. This is reflected in the average score for the **e-skills strategy** indicator, which is just above 2 out of 5 (Figure 10.9). This score indicates that although none of the six governments have a dedicated e-skills strategy, they have included relevant provisions in their digital or education strategies. It also indicates that implementation of these strategies is still at the early stages. Albania, Kosovo, Montenegro and Serbia have set up policy frameworks to promote the integration of ICT into education – covering IT infrastructure, connectivity, e-curricula and teachers' training – and to facilitate lifelong learning opportunities for ICT professionals. Serbia scores the highest on this indicator (Figure 10.9), with its information society, education and IT industry strategies covering e-skills development. It has established the inter-ministerial Joint Body for ICT Infrastructure in Education to improve co-ordination of these strategies across the three line authorities (Ministry of Education, Science and Technological Development; Ministry of Trade, Tourism and Telecommunications; and the National Research and Academic Network).

The six SEE economies do not place a high priority on ICT in education and e-skills development, and as a result do not allocate enough financial resources to create digital educational content, use digital tools to enhance learning in the classroom in non-ICT subjects, or use digital applications and devices to enable offline and out-of-classroom learning activities. The SEE economies still depend heavily on donor support to tackle e-skills development, but the programmes which have been implemented have not yet achieved significant results. The Former Yugoslav Republic of Macedonia had started to implement promising ICT programmes in schools during the *2016 Competitiveness Outlook* assessment cycle, but they have not yet achieved permanent results. For instance, the implementation of its e-content strategy focused more on the digitisation of traditional textbooks rather than seeking transformational change in the education system through the use of digital technology. In the Federation of Bosnia and Herzegovina, the development of ICT in education is uneven at the cantonal level, while the Republika Srpska has implemented some programmes that focus on providing teacher training in ICT and equipment. For example, 65 elementary schools were equipped with 408 "e-classrooms" that included 10 200 computers with basic Internet connectivity. The information society policy 2016-20 adopted at the state level in May 2017 addresses e-skills development and provides a unique opportunity for co-ordination and alignment across all levels of government, despite the fact that full consensus was not achieved for its adoption.

Lifelong learning programmes are also limited in the SEE economies. For example, employees in Kosovo need to leave work if they want to follow further education/training programmes because there are no suitable programmes for working professionals. In some of the economies, the private sector is looking to provide solutions to the skills gap for the ICT industry and the limitations of lifelong learning. For example, in Bosnia and Herzegovina the BIT Alliance, an association of 13 of the largest software companies in

Sarajevo, is promoting e-skills development to create a skilled workforce, which is in high demand in the domestic IT industry.

E-skills development in the SEE economies is portrayed by several quantitative indicators. For example, a high percentage of households in some of the economies do not have access to the Internet because they lack the skills. The share is as high as 36% in the Former Yugoslav Republic of Macedonia and the Republika Srpska in Bosnia and Herzegovina, and 33% in Montenegro in 2016, according to data from their statistical offices. In Serbia the figure was approximately 10%. Internet access in schools is fair in the six economies, while Albania made most progress in this respect during 2016. According to the World Economic Forum indicator on Internet access in schools, on a scale of 1-7 (with 7 being the best score), Albania scored 5.2 in 2016 from 4.1 in the previous assessment cycle (WEF, 2016 and 2015). In the 2016 assessment of this indicator, scores for the Former Yugoslav Republic of Macedonia and Serbia dropped from the previous assessment cycle (from 5.5 to 5.2, and from 4.2 to 3.9, respectively), while Montenegro remained almost steady (4.2 to 4.3). Nevertheless, according to data collected during the current assessment from SEE governments, all of Serbia's primary schools have IT equipment and software, the majority of schools have ICT labs, and Internet connectivity is rising to over 65% of schools. The other SEE economies have reported that IT equipment and software are not yet installed or not operational in a large number of their schools.

The percentage of users acquiring education and training through the Internet remains low in all the economies except Serbia. According to Serbia's statistical office, 67% of all Internet users used it for training and education during 2016. However, the share is much lower in the other five economies (e.g. 13% in the Former Yugoslav Republic of Macedonia in 2016 and only 5% in Albania in 2012). According to government statistical offices, even fewer users were taking online courses in 2016: 10% in Serbia, followed by 5.7% in the Former Yugoslav Republic of Macedonia and 3.6% in Montenegro.

The SEE economies have the lowest average score on the **e-inclusion strategy** indicator (below 1.5 out of 5) in the current assessment (Figure 10.9). This score indicates that relevant strategies are either partially in place or even totally absent in the six SEE economies. Only Albania and Montenegro have some provisions for e-inclusion in their digital strategies, but they do not cover all disadvantaged groups, such as the poor or geographically disadvantaged – only people with a disability. Montenegro's Information Society Strategy has identified a number of groups at risk of exclusion and some activities to address them are planned for the future, although none have been budgeted for 2017. In Albania, the new Strategy for Social Protection 2020 addresses the rights of people with disabilities in accessing ICT systems and services.

One positive development is that all the SEE economies (except Kosovo) have adopted e-accessibility guidelines that align with EU Directive 2016/2102 (EC, 2016c) for public-sector websites and e-service portals. The Federal Ministry of Labour and Social Affairs in the Federation of Bosnia and Herzegovina (FBiH) has adopted its Strategy for the Advancement of Rights and Status of Persons with Disabilities in FBiH for 2016-2021, which also addresses e-accessibility. E-accessibility guidelines are compulsory for all public-sector websites in Albania, the Former Yugoslav Republic of Macedonia and Montenegro. Montenegro has actually set a specific target to reach 100% e-accessibility alignment of public-sector websites with international and EU standards by the end of 2017. Even so, the SEE economies are lagging behind EU e-accessibility practices and guidelines, and have made no plans to provide resources to address the issue.

E-health information systems are becoming more integrated

E-health combines the use of ICT for health with new skills and organisational change in healthcare systems. The aim is to improve the health of citizens, with the economic and social value that brings, and to increase efficiency and productivity in healthcare delivery. E-health can have important benefits for national health systems, such as enhancing health-information management, reducing medical errors and cost of care, improving the quality of personnel, contributing to better lifestyles, and improving accountability (Al-Shorbaji, 2012). Many national digital strategies in OECD countries and partner economies target e-health, putting forward measures to ensure high-quality broadband connectivity across the healthcare system, to develop telemedicine further, and to improve the use of electronic medical healthcare records (OECD, 2015a).

The SEE economies score well above 2 out of 5 on average for the e-health indicator (Figure 10.9), signifying that the relevant policy frameworks are in place and are slowly being implemented. Some SEE governments (such as Albania, Montenegro and Serbia) have incorporated e-health and integrated healthcare information system (IHIS) development as priority objectives in their digital strategies. The Former Yugoslav Republic of Macedonia and Kosovo have adopted strategies for the development of an IHIS, while Serbia and Montenegro were drafting such strategies during 2017. Ministries of health in some of the economies are also integrating e-health provisions into their health sector strategies, as in the Federation of Bosnia and Herzegovina. However, Bosnia and Herzegovina lacks constitutional authority at the state level to adopt a policy and legal framework for e-health and the level of development across entities and cantons varies significantly. It has made progress in harmonising e-health indicators through a World Health Organization programme, which involved line ministries and institutions from all levels of government.

There are also some good practices among SEE economies which could be shared across the region. For example, the Former Yugoslav Republic of Macedonia has made headway in co-ordinating and developing e-health services by establishing the Committee for Health and Environment, made up of various ministers and directors of state institutions and chaired by the Prime Minister and co-chaired by the Minister of Health. Its IHIS is in operation and providing services to citizens and healthcare institutions, while the flagship "My appointment" e-service has received attention as a regional example of good practice that the other SEE economies could emulate.

Albania has also made considerable progress in e-health development, recognising the promise of e-health for reforming and revolutionising the current poor provision of health services. In the last couple of years, the government has implemented a bold programme, providing free health check-ups to all citizens aged 40-65 and 900 000 health e-cards to be used by the local family doctor healthcare service. The government intends to extend the programme to the entire population. It has secured EUR 32 million in donor support through a World Bank project to further develop its IHIS and e-services.

Kosovo is a regional pioneer in the development of telemedicine, inaugurating its Kosovo Telemedicine Center (TCK) in Pristina as early as 2002, and opening six additional regional centres since then. The Council of Europe adopted a resolution naming it the best programme for telemedicine in South East Europe, and adopted a proposal for the creation of a regional telemedicine network. The TCK is fully connected to the Albanian Telemedicine Center and has promoted expansion to Montenegro and the Former Yugoslav Republic of Macedonia.

The way forward for digital empowerment

As the SEE economies look to the future, they could consider a number of policy interventions to further support digital empowerment. Action point IV.3.1 of the WB6 MAP ("Develop and strengthen supply of digital skills") also focuses on this area, which coincides with the findings and recommendations in the current analysis (MAP, 2017).

Montenegro could consider prioritising the establishment of a high-level inter-ministerial co-ordination mechanism to strengthen ownership and accountability for implementing its new Information Society Strategy, now that the Ministry for Telecommunications has ceased operation. The good practice example from the Netherlands (Box 10.2) could offer some practical ideas (OECD, 2015b).

The Former Yugoslav Republic of Macedonia could prioritise the development of a long-term digital strategy using public funds and resources, if donor funding cannot be promptly secured, in order to provide a vision for the development of the digital economy to all stakeholders. In this respect, it will also be important to plan regional co-operation aimed at enhancing digital skills for citizens and for professionals, as proposed in Action Points IV.3.1.b ("Pilot a regional intervention aimed at enhancing basic digital skills for citizens to engage online") and IV.3.1.c ("Pilot a regional intervention aimed at enhancing skills for IT specialists, that would be closely linked to the demand from and co-ordinated with digital businesses in WB6 and EU") in the WB6 MAP (MAP, 2017).

Albania, Kosovo and Bosnia and Herzegovina could explore models of co-operation with the private sector to provide and maintain computers and Internet connectivity for every school, especially in rural areas. They could examine universal service obligations, public-private partnership investment models or even social tariffs. They could also leverage the expected increase in rural broadband demand to attract the attention of service providers and telecom operators.

Box 10.2. **Good practice: The National Digital Commissioner of the Netherlands**

The National Commissioner for Digital Government ("DigiCommissioner") was appointed in 2014 to oversee the improvement of financing, governance and use of digital government in the Netherlands. The appointment lasts four years at most. The DigiCommissioner is a good example of how to implement Principle 5 ("Secure leadership and political commitment") of the OECD Council Recommendation on Digital Government Strategies from July 2015.

The DigiCommissioner in the Netherlands has put in place a governance system with top-level civil servants and a ministerial commissioner. This governance system extends to all levels of government (national, regional and local). All major stakeholders from different levels of government and agencies in the Netherlands were involved in the design of the DigiCommissioner, whose office now includes 14 staff members, significantly reducing the number of personnel involved in steering groups and committees on ICT. The mission of the Office of the DigiCommissioner is fourfold: 1) to boost policy development and innovation; 2) to promote the creation of generic provisions for e-government; 3) to secure the management of fundamental services; and 4) to encourage the use of those services. The office connects all levels of government with a common goal to achieve a solid and future-proof digital government.

Source: OECD (n.d. b), "Netherlands: DigiCommissioner", www.oecd.org/gov/netherlands-digicommissioner.pdf.

The Former Yugoslav Republic of Macedonia could consider updating its e-content strategy and reviewing and revising plans for developing and sustaining the e-textbook portal. This would transform teaching and learning by changing the way ICT is taught and used in the classroom.

Kosovo could consider prioritising the development of e-accessibility guidelines, which are aligned with EU Directive 2016/2102. It could also review its Digital Agenda action plans to provide timeframes and accountability for enforcing these guidelines for public-sector websites.

Serbia could include in its draft new law on e-government the obligation for all public-sector websites to apply e-accessibility guidelines, in compliance with EU Directive 2016/2102. The government could also consider designing a training programme to increase digital literacy among people with disabilities, only around 10% of whom are digitally literate (SIPRU, 2014).

Kosovo and the Former Yugoslav Republic of Macedonia could consider updating their strategies for developing IHISs, and Albania could develop its own IHIS strategy, which could include new developments in terms of interoperability, liability and health standards.

All of the SEE economies could consider preparing e-inclusion strategies, identifying all groups at risk of being excluded from the digital economy and addressing their needs appropriately. This is proposed in Action Point IV.3.1.d: "Set up and implement regional training and employability enhancement programme aiming to mobilize and upskill un/underemployed population with particular emphasis on youth, women, and people with disabilities" in the WB6 MAP (MAP, 2017). A good-practice example from the OECD Digital Government Toolkit is Mexico's National Digital Strategy (OECD, n.d. c). This strategy obliges the state to adopt a Universal Digital Inclusion Policy and includes civic innovation and citizen participation in the digital society among its main objectives.

E-business and e-commerce

E-commerce is defined as any monetary transaction made with the help of electronic media. It is a subset of e-business, which encompasses business processes being conducted electronically and businesses that exist online. E-commerce facilitates process innovation among firms, enlarges their market scope, reduces operational costs and lowers barriers to entry, thus intensifying competition (OECD, 2013a). Consumers benefit from easy access to a variety of goods and services, competitive prices, and convenient payment options (OECD, 2016c). The Digital Single Market strategy includes a pillar on better access for consumers and businesses to online goods and services across Europe to address key differences between the online and offline worlds and to break down barriers to cross-border online activity (EC, 2015a). The e-business and e-commerce sub-dimension includes three qualitative indicators (Figure 10.11):

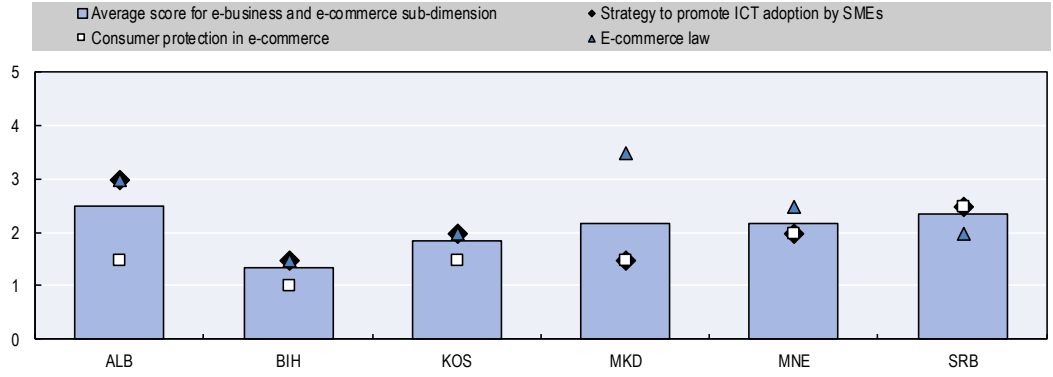
The **promotion of ICT adoption by SMEs** indicator assesses whether a strategy or action plan to promote the adoption of ICTs by SMEs has been adopted, and is being implemented and monitored.

The **consumer protection in e-commerce** indicator assesses whether the adopted framework addresses five key policy issues: information disclosure, fraud and misleading commercial practices, privacy issues, dispute resolution, and redress (OECD, 2013).

The **e-commerce law** indicator assesses the adoption and full implementation of an electronic commerce law which establishes harmonised rules on issues such as the transparency and information requirements for online service providers, electronic contracts and the liability of intermediaries.

As Figure 10.11 shows, Albania and Serbia score the highest in the region for their policies to promote ICT adoption by SMEs. The rest of the SEE governments have not managed to devote sufficient attention or financial resources to awareness raising and capacity-building activities among SMEs to improve skills and trust in digital technologies. All of the economies except Serbia need to do more to align their legal frameworks for consumer protection in e-commerce with the EU framework. Albania and Serbia have adopted consumer protection strategies, while dedicated consumer protection programmes are being implemented in the remaining SEE economies. In Bosnia and Herzegovina, only the Republika Srpska has implemented a consumer protection programme. All of the SEE economies have adopted e-commerce legislation, but all except the Former Yugoslav Republic of Macedonia need to do more to align with the European e-commerce directive (2000/31/EC) (EC, 2000).

Figure 10.11. **E-business and e-commerce: Sub-dimension average score and indicator scores**



Note: See the methodology chapter for information on the *Competitiveness Outlook* assessment and scoring process.

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The SEE economies are starting to promote digital business practices among SMEs

SMEs can find it harder to benefit from digitalisation than larger companies. Among OECD countries, 40% of large enterprises were participating in e-commerce in 2013, but only 18.9% of small ones (OECD, 2015a). This gap can be largely attributed to insufficient knowledge and financial resources, and barriers to organisational change, such as the absence of internal IT departments and in-house know-how (OECD, 2016a). As the productive structure of the six SEE economies is predominantly composed of SMEs, their adoption of ICT is of great importance.

The SEE economies have gradually started to adopt strategies and plan activities to promote the use of ICT by SMEs by supporting innovation and the introduction of digital business practices, which is reflected in the average score of 2 out of 5 for the promotion of ICT adoption by SMEs indicator (Figure 10.11). The SEE governments are seeking to develop the domestic market and to increase consumption of IT equipment and software, mainly through their digital strategies. Kosovo, Montenegro and Serbia also include this

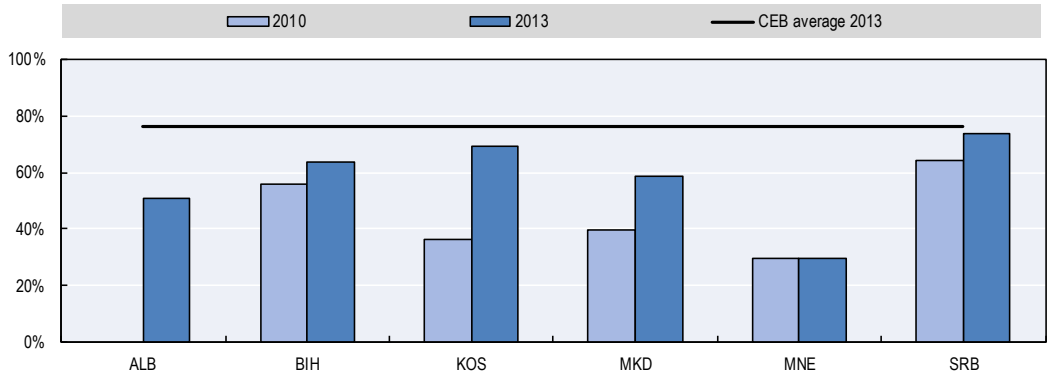
in their IT or horizontal industrial development strategies. As Figure 10.11 above shows, Albania and Serbia score the highest in the region for their policies to promote ICT adoption by SMEs, closely followed by Kosovo and Montenegro. These four SEE economies have set up policy frameworks to support e-business and e-commerce. They offer financial support programmes or loan schemes to existing SMEs and start-ups to foster ICT innovation through the use of IT equipment and software.

However, some of the financial support programmes offered by Albania, the Former Yugoslav Republic of Macedonia and Serbia have failed to produce expected impacts on SMEs' growth and adoption of ICT. There are several reasons for this. One is the rather low amount of money offered per applicant (for example vouchers of EUR 3 000 for ICT innovation in Albania). A second one is the poor planning of similar voucher schemes that led to massive exploitation of resources by a limited number of companies (for example voucher schemes for SMEs looking to develop e-commerce websites in the Former Yugoslav Republic of Macedonia, where a small number of players dominated the market as service providers for SMEs). Another reason is the difficult financial bank-guarantee processes (for example the Serbian programme supporting e-business development for SMEs) and disproportionate administrative project-management burdens. On the other hand, Serbia has run a significant awareness-raising campaign on e-business and e-commerce targeting SMEs, which also included mentoring for e-strategies, through an EU-funded programme. Montenegro also planned financial support schemes promoting innovation for SMEs and online business registration systems under the Digital Business Pillar of the Information Society 2020 Strategy and the new Industrial Policy 2020. Kosovo has managed to secure EUR 2 million under the Kosovo Digital Economy Programme, to implement activities like the development of a Tech Park, awareness-raising and training activities for SMEs. Nevertheless, making funds available to modernise SMEs and to support e-business activities continues to be a challenge for all the SEE economies.

Bosnia and Herzegovina had no relevant policy framework until it adopted its Information Society Strategy 2016-2020 in May 2017, but its implementation has not started yet. In the Federation of Bosnia and Herzegovina, a project to create a one-stop-shop e-registration service for businesses to stimulate ICT adoption by SMEs has identified the need to amend approximately 50 existing laws across all cantons. These are now in the initial stages of preparation. The Republika Srpska does not directly finance SMEs to adopt ICT, but since 2013 it has adopted e-business legislation and is continuing to change the operation of various public administration bodies to facilitate e-business registration and e-taxation services.

The quantitative indicator, the percentage of firms with their own website (Figure 10.12), offers a basic measure of the degree of ICT adoption by companies in the SEE economies. The indicator shows that Serbia has made headway in this respect, followed closely by Kosovo. Based on data from the same source on 2010, all the SEE economies except Montenegro have seen a significant increase in the share of companies that have their own website over the period 2010-13. This clearly illustrates the need for Montenegro to intensify its efforts in promoting the adoption of ICT by SMEs.

Figure 10.12. **Percentage of firms with their own website (2010, 2013)**



Note: CEB – Central Europe and the Baltics (Bulgaria, Croatia, the Czech Republic, Estonia, Hungary, Latvia, Lithuania, Poland, Romania, the Slovak Republic and Slovenia).

Source: World Bank (2017c), "Innovation and technology", www.enterprisesurveys.org/Data/ExploreTopics/innovation-and-technology.

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Legal reforms continue to support businesses and consumers in e-commerce

Consumers buying online should be assured of transparent and effective consumer protection that is no weaker than they enjoy in other forms of commerce (OECD, 2016c). The OECD Committee on Consumer Policy has researched and analysed the trends and policy challenges arising from the greater complexity of the online environment and related risks for consumers (OECD, 2016c). Consumers and businesses trying to access content or buy goods and services online can face discrimination on the basis of nationality, residence or geographical location, which run counter to the basic principles of these OECD Council recommendations and the EU principles. The Digital Single Market (DSM) indicates that only 38% of EU consumers feel confident about purchasing from another EU Member State and only 7% of SMEs in the EU sell across borders. If the same rules for e-commerce were applied in all EU Member States, 57% of companies say they would either start or increase their online sales to other EU Member States (EC, 2015a). The SEE economies have recognised that by aligning their legal and regulatory frameworks with the EU in accordance with the DSM, their businesses could gain full access to a sizeable market of EU consumers.

As described above, two qualitative indicators measure whether a legislative and institutional framework is in place to protect consumers in e-commerce, and to gauge the degree of adoption and implementation of e-commerce and related consumer protection legislation (i.e. the consumer protection in e-commerce and e-commerce law indicators in Figure 10.11).

The **consumer protection in e-commerce** indicator received the second lowest score in the current assessment in the digital society policy area. The average score was slightly above 1.5 out of 5.0, indicating that all of the economies except Serbia need to do more to align their legal frameworks for consumer protection in e-commerce with the EU framework. Albania and Serbia have adopted consumer protection strategies, while dedicated consumer protection programmes are being implemented in the remaining SEE

economies. In Bosnia and Herzegovina, only the Republika Srpska had implemented a consumer protection programme.

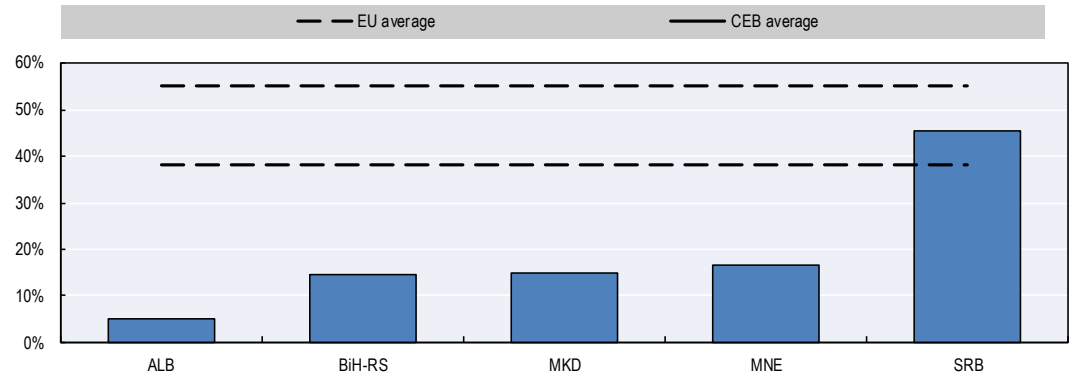
Five of the SEE economies and the Republika Srpska in Bosnia and Herzegovina have a legal framework in place for consumer protection in e-commerce. The legal framework at state level in Bosnia and Herzegovina is outdated, however, and there is nothing in place in the Federation of Bosnia and Herzegovina. All of the economies have adopted a consumer protection strategy or programme that foresees pending legislative interventions, assigns roles and responsibilities to public bodies, and allows for awareness-raising or training activities for consumers. Although these are all generic consumer protection policies, they also refer to e-commerce to some extent. However, the degree of their implementation varies. Serbia, the clear leader in this domain, is the only one of the assessed economies that has adopted a framework for consumer protection which is fully aligned with the EU, including alternative dispute resolution. It has also recently adopted a law for unauthorised advertising, which also refers to e-commerce practices. However, Serbia's Council for Consumer Protection is still facing issues that keep it from becoming fully operational, such as the reimbursement of members' expenses. All the other economies have adopted legislation that is not yet fully aligned with the EU framework. The institutional capacities to deal with e-commerce consumer protection are weak and financial resources for the implementation of consumer protection programmes are scarce in all six economies.

All of the SEE economies have adopted **e-commerce legislation**, but almost all of them need to do more to align it with the European e-Commerce Directive (2000/31/EC). This is reflected by an average score around 2 out of 5 for the e-commerce law indicator (Figure 10.11). The SEE economies have an e-commerce law in place, but some, such as Kosovo and Serbia, have only partially implemented it. In Bosnia and Herzegovina, only the Republika Srpska has updated its legislation on e-commerce. The Former Yugoslav Republic of Macedonia has the most developed framework; in 2010 and 2014, the government conducted a gap analysis of e-commerce legislation and then proceeded to amend the law accordingly. Montenegro has not yet included media and information society services in its e-commerce law, while Serbia still lacks sectoral legislation alignment for e-commerce. The government of Serbia created a dedicated working group in 2017 to tackle the necessary legislative reforms. Kosovo, on the other hand, needs to work with its commercial banks to replace the rigorous processes that are discouraging businesses from adopting e-commerce practices. Its government is currently updating its electronic authentication framework and also preparing administrative instructions for e-commerce operators and their websites in an effort to address bottlenecks.

In assessing the effectiveness of the legal framework in this domain, two quantitative indicators also demonstrate how e-commerce has penetrated the SEE region, including the share of individuals purchasing online (Figure 10.13) and the share of all enterprises selling online (Figure 10.14).

The quantitative data show that e-commerce is developing rapidly in the SEE economies. Although the share of SEE consumers buying online is below the EU-28 average (Figure 10.13), SEE businesses in some economies are more likely to sell online than those in the CEB and even among the EU-28 (Figure 10.14). This implies that companies in the region are eager to seize the opportunities provided by e-commerce to increase market outreach and reduce cost of sales. It is also evident that the implementation of policy and regulatory reforms has created an enabling environment for practising e-commerce over the last few years.

Figure 10.13. **Percentage of individuals purchasing online in the last 12 months (2016)**



Note: Data for Kosovo not available. Data for Bosnia and Herzegovina available only for the Republika Srpska. CEB – Central Europe and the Baltics (Bulgaria, Croatia, the Czech Republic, Estonia, Hungary, Latvia, Lithuania, Poland, Romania, the Slovak Republic and Slovenia).

Source: Government statistical offices; Eurostat (n.d.), *Digital Economy and Society Database*, http://ec.europa.eu/eurostat/web/digital-economy-and-society/data/database.

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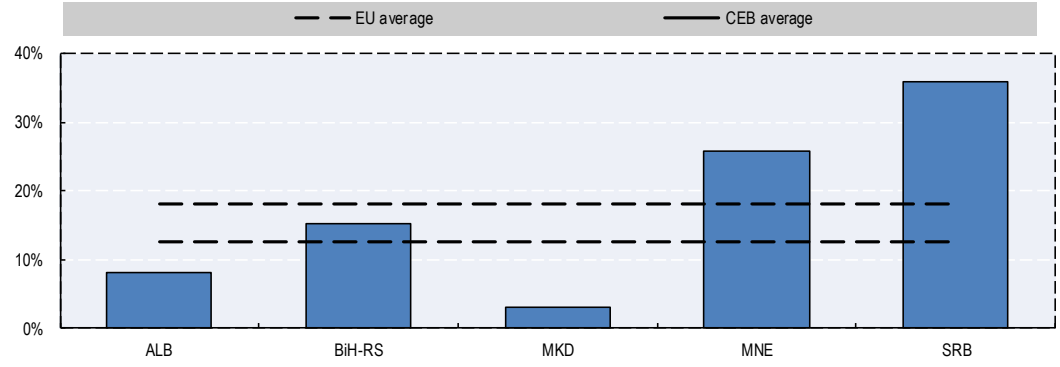
Figure 10.14. **Percentage of all enterprises selling online (excluding the financial sector) (2016)**



Note: Data for Kosovo not available. Data for Bosnia and Herzegovina available only for the Republika Srpska. CEB – Central Europe and the Baltics (Bulgaria, Croatia, the Czech Republic, Estonia, Hungary, Latvia, Lithuania, Poland, Romania, the Slovak Republic and Slovenia).

Source: Government statistical offices; Eurostat (n.d.), *Digital Economy and Society Database*, http://ec.europa.eu/eurostat/web/digital-economy-and-society/data/database.

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The way forward for e-business and e-commerce

As SEE economies look to the future, they might consider a number of policy interventions to further support e-business and e-commerce.

The Former Yugoslav Republic of Macedonia, Serbia and Albania could consider revising those SME financial support programmes that have had limited impact, including ICT voucher schemes and start-up funding programmes. Revised schemes should strike a better balance between the size of funding per applicant and the

total number of beneficiaries, in order to encourage participation. They should also consider their administrative and project-management costs. They could follow Israel's SME and entrepreneurship policy as a good-practice example, particularly the government's national programmes for SMEs, which covered SME financing, innovation and workforce skills, among many others (OECD, 2016f).

Bosnia and Herzegovina could consider developing financial support tools to accelerate the adoption of ICT and digital business practices by SMEs. The authorities designing the support programmes could co-operate with the SEE governments that have already implemented such schemes in order to learn from their recent experiences and to avoid the shortcomings that led to disappointing results. The development of new programmes should be aligned with Action Point IV.4.1.d of the WB6 MAP, which promotes regional co-operation and twinning approaches: "i) Facilitate Business Investments in research and Innovation and in the Creation of Start-Ups, ii). Pilot regional co-operation ('twinning') initiatives among technology/innovation Parks and assess demand and prospects for establishment of regional digital Innovation hubs" (MAP, 2017)

Montenegro could consider establishing a dedicated team within the government to co-ordinate the implementation of the Digital Business pillar of the Information Society Strategy 2020 with the related objectives of the Industrial Policy 2016-20. It could also amend the e-commerce law to include media and information society services. This team could use make use of staff from the former Ministry for Telecommunications and Information Society.

Serbia could resolve the bottlenecks that keep the Council for Consumer Protection from becoming fully operational, in order to improve the government's overall efficiency in implementing its consumer protection strategy and, more importantly, to strengthen evaluation and impact assessment practices.

Albania, Bosnia and Herzegovina, the Former Yugoslav Republic of Macedonia, Kosovo and Montenegro could accelerate their alignment of consumer protection frameworks in e-commerce with the EU framework. They should consider increasing the staffing of their consumer protection authorities and running capacity-building programmes for employees to improve their responsiveness and efficiency in handling new challenges in the digital economy. All of the economies need to accelerate their efforts to apply best practice in consumer welfare in e-commerce, as highlighted by Action Point I.4.4.d ("Identify and apply the best practice to digital market places to grow SME businesses and drive consumer welfare") in the WB6 MAP (MAP, 2017).

All the SEE economies could consider replicating the Serbian e-business programme as a regional good practice, by increasing the financial resources allocated to awareness campaigns, capacity building and mentoring workshops for businesses looking to adopt e-business practices. Another good-practice example to consider is the ICT-4-BUS Programme sponsored by the Multilateral Investment Fund and the Information Technology for Development Division of the Inter-American Development Bank. This helped SMEs conquer the e-business challenge in Latin America and the Caribbean by improving their business processes and expanding their access to new ICT solutions and services (Ca'Zorzi, 2008). OECD countries offer additional examples of ICT/e-commerce awareness-raising programmes, such as the SME E-business Information Toolkit from Canada's Ebiz.enable programme; and Austria's Let's e-Biz programme, which offers an annual award for the best e-business and multimedia products (OECD, 2004b).

Digital security and privacy

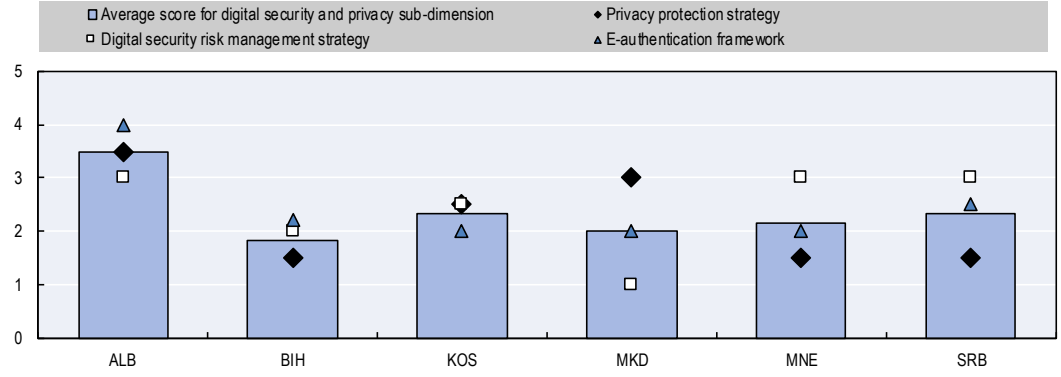
Trust in the digital economy and society is critical if economies are to reap the substantial economic benefits of digitalisation (OECD, 2016a). Threats to digital security and privacy can have a significant impact on individuals' well-being, affecting their reputation and finances, and undermining companies' competitiveness and position in the marketplace. In a 2014 survey, OECD countries identified broadband, security and privacy, in that order, as the 3 highest priority areas out of 31 (OECD, 2014). Economies around the world have a common interest in promoting and protecting the fundamental values of privacy, individual liberties and the global free flow of information, as recommended in the Recommendation of the Council Concerning Guidelines Governing the Protection of Privacy and Trans-border Flows of Personal Data (OECD, 2013c). While effective laws are essential, the safeguarding of privacy today also requires a multifaceted national strategy with high-level intragovernment co-ordination (OECD, 2013b).

The digital security and privacy sub-dimension includes three qualitative indicators:

- The **privacy protection strategy** indicator assesses whether a national privacy protection strategy has been adopted and implemented, and whether its effectiveness is monitored and its elements adjusted accordingly.
- The **digital security risk management strategy** indicator assesses whether a national strategy to foster digital security risk management has been adopted and implemented, and whether regular monitoring processes lead to the appropriate adjustment of relevant policies.
- The **e-authentication framework** indicator assesses whether a policy framework for e-authentication has been adopted and implemented, and if monitoring leads to the appropriate policy adjustment.

The SEE economies score close to 2.5 on average in this sub-dimension (Figure 10.15), which implies that governments have adopted relevant policies and legislation for privacy, data protection and digital security and have also set up a framework for e-authentication and interoperability to foster the development of digital services for citizens and businesses.

Figure 10.15. **Digital security and privacy: Sub-dimension average scores and indicator scores**



Note: See the methodology chapter for information on the *Competitiveness Outlook* assessment and scoring process.

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Albania has made the most headway in this sub-dimension, demonstrating strong government commitment to reforms and commendable progress in the last couple of years in cybersecurity policy and implementation of its e-authentication framework. The other SEE economies have not made uniform progress across this sub-dimension. Serbia and Montenegro have advanced the implementation of their digital security strategies, while the Former Yugoslav Republic of Macedonia and Kosovo have made progress in the area of privacy and data protection issues. Serbia is working towards a fully functional e-authentication framework that, along with its national interoperability framework, provides solid ground for e-government and the development of private-sector services.

Digital security and data protection frameworks are being strengthened

As digital innovation becomes more data driven, privacy and digital security become key factors in the digital economy. Although many countries have adopted national digital security strategies, very few have adopted equivalent privacy policy strategies (OECD, 2016d). On the other hand, national digital security strategies can ensure a consistent approach to aspects of digital security and good co-ordination among stakeholders, i.e. the government and public and private organisations. The OECD Recommendation of the Council on Digital Security Risk Management for Economic and Social Prosperity proposes the adoption of a national strategy for the management of digital security risk and outlines the principles that should be followed at all levels of government and in public organisations (OECD, 2015c). These principles promote, among others, awareness raising for all stakeholders, transparency and consistency with human rights and fundamental values in digital risk management, continuous risk assessment for decision making, and the adoption of preparedness and continuity plans.

Although none of the SEE economies has adopted a **privacy protection strategy** that addresses broader privacy issues in the digital economy, their continuous improvement of policies and legislation on data protection is a positive step. This is reflected in the average score of above 2 out of 5 for the privacy protection strategy indicator, which also shows that policy implementation is still at the early stages in most of the SEE economies (Figure 10.15). In fact, the analysis shows that only Albania and the Former Yugoslav Republic of Macedonia have made good progress in implementing their data protection strategies and relevant legislation. Kosovo is closely following the two economies in the lead, while the other three economies have not demonstrated the necessary dedication to set up or to enact relevant policies and legal frameworks, which is reflected in lower scores (Figure 10.15). However, the analysis shows that there is room for development in terms of data and privacy protection practices in all six economies.

Albania, the Former Yugoslav Republic of Macedonia and Kosovo are implementing personal data protection (PDP) strategies and have aligned their legislation with the EU General Data Protection Regulation framework (EC, 2016d), although enforcement is still weak. For example, the Office of the Commissioner for PDP in the Former Yugoslav Republic of Macedonia failed to act in a significant wiretapping incident in 2015 and is yet to implement the Venice Commission's recommendations for amendments to the law (Venice Commission, 2015). Other shortcomings in the practical implementation of data protection are linked to sub-sector legislation in specific fields where the existing legal framework is not appropriate or obsolete. For example, online information portals in the Former Yugoslav Republic of Macedonia are not treated or registered as media companies and are not self-regulated. As a result, the personal data protection regulations applicable for media services or products do not apply to online portals, creating

significant risks of data protection violations. Kosovo is weak in promoting self-regulation and building capacity among public- and private-sector data controllers.

Bosnia and Herzegovina, Montenegro and Serbia have not yet prioritised the adoption of PDP policies and their legal frameworks are largely outdated, though Serbia was drafting a new law on personal data protection in 2017 to align with EC recommendations. The economies allocate limited resources to data protection enforcement, and awareness raising takes a back seat to inspection activities. As a result, public- and private-sector employees controlling personal data do not fully comprehend the privacy aspects, leading to frequent incidents of data abuse. Political or other influence also still impedes the consistency of PDP enforcement. For example, in Montenegro a large number of requests for access to information of public interest still remain unanswered, and in Bosnia and Herzegovina, the head of the PDP Agency has been under prosecution since 2014.

All six SEE economies have increased international co-operation over online child protection. They have developed programmes with a special focus on child trafficking and child safety online within the child protection sector, aiming to raise awareness, establish and reinforce referral and reporting mechanisms, and encourage co-ordination and collaboration among government and non-government stakeholders. These programmes are aligned with the principles of the OECD Recommendation of the Council on the Protection of Children Online, but there is room for further improvement (OECD, 2012b). The OECD recommends that governments adopt clear policy objectives and ensure their enforcement, and underlines the importance of strengthening co-operation with international networks and initiatives, as well as sharing information for quantitative and qualitative international comparative policy analysis. None of these actions are happening regularly in the region, however.

In the area of **digital security risk management strategies**, the average score of nearly 2.5 out of 5 for this indicator shows that most of the SEE economies have set up and are currently implementing relevant strategies and action plans (Figure 10.15). Albania, Kosovo and Montenegro have already adopted dedicated cybersecurity strategies, while the Former Yugoslav Republic of Macedonia, the Republika Srpska in Bosnia and Herzegovina, and Serbia have started drafting their own strategies. Albania, Montenegro, the Republika Srpska and Serbia have also adopted dedicated information security (or cybersecurity) legislation and are making progress in preparing secondary legislation and aligning legal frameworks.

The SEE economies have made significant progress in establishing national Computer Emergency Response Teams (CERTs), formed as units of the telecom regulators in the Former Yugoslav Republic of Macedonia, Kosovo and Serbia. Although Bosnia and Herzegovina was one of the first to adopt a CERT strategy in 2011, it has not yet achieved consensus across the entities on the establishment of a national CERT, while the Republika Srpska is operating its own CERT under the RS Agency for Information Society. All of the national CERTs remain understaffed (2-4 staff each) compared to common EU practices and recommendations, usually due to uncompetitive public-sector salaries that fail to attract candidates with adequate expertise. Other regulatory issues in the public-sector hiring process have also prevented Serbia from starting the hiring process for its national CERT. Montenegro is a regional leader in the number of Computer Security Incident Response Teams (CSIRTs) established in the public sector (29 reported in 2017). Albania, Montenegro and Serbia have defined national critical information infrastructure (CII) that requires CERT/CSIRT operation. Nevertheless, it is still common practice to outsource the maintenance of public websites in Bosnia and

Herzegovina, Kosovo, and Montenegro, while the digital security requirements and standards set for the respective contractors are not always adequate.

Kosovo and Serbia have established dedicated bodies in the field of cybersecurity, and these are examples of regional good practice in high-level co-ordination. Kosovo established the National Council for Cybersecurity to co-ordinate digital security issues and named the Minister of Internal Affairs as National Co-ordinator. Serbia has established the Body for the Co-ordination of Information Security Affairs. In an effort to improve operational efficiency in information security affairs, Albania has also merged its national CERT with the National Authority for Electronic Certificates into the National Authority for Cybersecurity, established in the beginning of 2017.

On the other hand, this *Competitiveness Outlook* assessment found that few enterprises in the SEE economies have formally defined ICT security policies – according to data from government statistical offices just 33% of companies in Albania and 26% in the Former Yugoslav Republic of Macedonia for instance – which demonstrates that awareness of digital security risks is rather low among businesses in the region.

E-authentication frameworks are being updated

E-authentication is critical to establishing trust relationships for e-commerce and e-government. It is an essential component of any strategy to protect information systems and networks, financial data, personal information and other assets from unauthorised access or identity theft (OECD, 2007). Interoperability frameworks allow different authentication schemes to interact and maintain the level of trust.

The SEE economies have clearly recognised that e-authentification frameworks have a key role to play in public administration reform. The average score of nearly 2.5 out of 5 for this indicator shows that all six SEE economies have adopted e-authentication frameworks, mainly through e-signature legislation that has been in place for many years and they are currently at different stages of implementing them (Figure 10.15). These frameworks are currently undergoing significant updating to align them with the EU 910/2014 eIDAS Regulation on electronic identification (EC, 2014). Albania, the Republika Srpska in Bosnia and Herzegovina, Kosovo, Montenegro, and Serbia have updated their legislation to comply with this EU framework. Bosnia and Herzegovina has set up a working group in the Ministry of Communications and Transport to prepare new State legislation on e-signatures which will align with the EU 910/2014 eIDAS Regulation.

All of the SEE economies have adopted national interoperability frameworks (NIFs), although Montenegro needs to update its framework in order to accelerate the pace of e-government development. Not all of these frameworks are consistently being implemented across the region, however. The interoperability frameworks in Albania, the Former Yugoslav Republic of Macedonia and Serbia are functional, although e-government services have not yet been deployed on Serbia's e-NIF framework. The Former Yugoslav Republic of Macedonia is planning to invest in Interoperability 2.0 to make the lowest level of infrastructure interoperable and to harness the power of web technologies (Web 2.0).

Albania has made the most headway in implementing e-authentication, scoring 4 for this indicator (Figure 10.15). The government has assembled all of its e-government legislation into a new law adopted in April 2017 and is increasing the number of services on the e-Albania portal based on its e-authentication and interoperability frameworks.

There is also evidence of implementation progress; for example it had issued 167 000 e-authentication certificates to citizens and 1 236 to public administration officials by early 2017.

Bosnia and Herzegovina has adopted a national interoperability framework as part of its Strategy and Action Plan for Public Administration Reform currently being implemented. Another positive step towards the enactment of e-authentication legislation was the decision to establish the Office for Supervision and Accreditation of Verifiers in November 2016, a move which had been delayed for many years. However, it has not updated its e-signature legislation since 2006, although this was planned for 2017.

Kosovo has made significant progress by adopting new state-of-the-art biometric e-ID technology in compliance with the EU eIDAS Regulation. It is currently piloting its use. The government has created an open source database to enable private companies to develop their own compatible e-services. However, campaigns to publicise this opportunity have been limited. The shortage of public funds to invest in e-government services and e-ID reader infrastructure is a barrier to implementing the new framework.

The way forward for digital security and privacy

As SEE economies look to the future, they could bear in mind the following policy interventions, which align with the Action Points under the WB MAP IV.2.1 on enhancing cyber security, trust services and data protection (MAP, 2017).

Montenegro, Kosovo and Bosnia and Herzegovina could consider increasing their requirements for security standards in public-sector websites, especially when they are outsourced to private companies.

The Former Yugoslav Republic of Macedonia could proceed with adopting the EC Venice Commission recommendations from 2015 to prevent further incidents of personal data abuse and to improve the efficiency of its legal framework and its compliance with EU regulations and principles (Venice Commission, 2015).

Bosnia and Herzegovina could address the uneven development of digital security at the entity level and seek co-ordination across all levels of government by promoting an inclusive public dialogue in a bottom-up effort to prepare a state-level Information Security policy.

Serbia could consider expediting legal and regulatory reforms to resolve barriers to staffing its national CERT and the operational problems of the Body for the Co-ordination of Information Security Affairs, in some cases caused by strict hiring or reimbursement regulations for the public sector meant to address the recent economic crisis. This will allow it to fully exploit the progress it has made in cybersecurity.

Kosovo and the Former Yugoslav Republic of Macedonia could consider reviewing their current legal frameworks for digital security and filling any gaps with dedicated information security laws. The Former Yugoslav Republic of Macedonia could consider amending its interoperability framework to include the private sector and to promote e-services compliance to boost demand for e-authentication products.

Serbia could consider making the e-NIF framework compulsory, identifying and describing the level of e-authentication needed for each type of service – see also Action Point IV.4.1.c ("Align standards, complement interoperability frameworks and introduce a pan-European dimension, in line with EIF") in the WB6 MAP (MAP, 2017). To make the most of the opportunity offered by its newly adopted e-business law and new

technology to simplify e-signatures through mobile phone authentication, the government could allocate additional resources to the Directorate for e-Government to co-ordinate and monitor compliance of existing and new e-services with the new framework.

On personal data protection, **all the SEE economies could consider striking a better balance between resources spent on performing inspections and controls, and those spent on capacity building and awareness raising**. These activities should not just educate public- and private-sector employees, but also the general public on PDP rules and rights, ultimately creating the desired transformational effect on society. New Zealand's approach, presented in Box 10.3, is a good-practice example to consider.

Box 10.3. Good practice: Cross-government programme to improve privacy and security across the state sector in New Zealand

Setting up an effective cross-government programme to improve privacy and security across the public sector can significantly enhance digital risk management and ensure trust in digital services among businesses and citizens. In line with that objective, the New Zealand Government implemented a review by the Government Chief Information Officer (GCIO) in late 2012 of publicly accessible information systems. It subsequently directed the GCIO to undertake a range of actions to improve privacy and security capability across the state sector, which included the establishment of a senior level Governance Group in April 2013, to oversee a work programme of mutually reinforcing initiatives in this domain. This practice implements the OECD Council Recommendation on Digital Government Strategies, Principle 4: reflect a risk management approach to addressing digital security and privacy issues, and include the adoption of effective and appropriate security measures.

ICT.govt.nz is the official site for the New Zealand Government ICT Functional Leader, the GCIO. Among its initiatives is the ICT Common Capabilities Panel for Security and Related Services, which was established in 2013, led by the Department of Internal Affairs. This is a cross-government group of 34 industry experts contracted to provide government agencies with services and advice on a range of security and other related matters.[1] The GCIO also provides tools, advice and guidance to agencies to help them build their capability, including risk assessment tools, cloud consideration tools and Government Enterprise Architecture for New Zealand (GEA-NZ) architecture artefacts.[2] It also leads the development of more integrated and streamlined advice for agencies, such as the Protective Security Requirements which outline the government's expectations for managing personnel, physical and information security.

1. See "ICT Security and Related Services Panel" on the ICT.govt.nz website (www.ict.govt.nz/services/show/SRS-Panel).

2. See the full list on the "Guidance and resources" page of the ICT.govt.nz website (www.ict.govt.nz/guidance-and-resources).

Source: OECD (n.d. a), "Good digital government practices by country" (www.oecd.org/governance/digital-government/toolkit/goodpractices/); OECD (n.d. d), "New Zealand: Cross-government programme to improve privacy and security across the state sector", www.oecd.org/gov/new-zealand-security-privacy.pdf.

Conclusions

The six SEE economies have demonstrated that they are consistently strengthening their digital society policy and regulatory framework to empower businesses and citizens to seize the opportunities of the digital economy. They have brought in investment to develop broadband, and reinforced the role of ICT as a horizontal enabler of growth

through cross-cutting digital strategies, co-ordinated at the highest level with other horizontal and sectoral policies. The SEE economies have also improved their frameworks and institutional settings for cybersecurity and e-authentication to establish a greater level of trust in using digital technologies. They also continue to update their frameworks on e-business and e-commerce to stimulate adoption of ICT and further establish the digital economy.

Nevertheless, the six SEE economies still face a number of challenges. ICT is not yet fully embedded in formal education and the domestic ICT industries persistently identify digital skills gaps as an issue. Their digital society policies do not pay enough attention to e-inclusion, which could mean some underprivileged groups facing digital exclusion. One important step to narrow the digital divide could be to enforce e-accessibility frameworks in e-government services. The SEE economies could also further develop their consumer protection frameworks and strengthen awareness of privacy and data protection to facilitate the adoption of digital technologies. One final positive move would be to improve the design of programmes to support or mentor SMEs, to reduce their risks of exclusion from the digital economy. Addressing these challenges would enable the SEE economies to build a digital society framework that increasingly enables citizens and businesses to benefit from the digital revolution.

Notes

1. Digitalisation refers to "the transformation of the economy and society as induced by the use of information and communication technologies" (OECD, 2016a).
2. A score of 0 denotes absence or minimal policy development while a 5 indicates alignment with what is considered best practices. Each level of scoring is updated for the individual indicator under consideration, but they all follow the same score scale: a score of 1 denotes a weak pilot framework, 2 means the framework has been adopted as is standard, 3 that is operational and effective, 4 that some monitoring and adjustment has been carried out, and 5 that monitoring and improvement practices are systematic.
3. Central Europe and the Baltics consist of 11 transition countries: Bulgaria, Croatia, the Czech Republic, Estonia, Hungary, Latvia, Lithuania, Poland, Romania, the Slovak Republic and Slovenia.
4. This means telecoms regulations that are drafted in a technology-neutral way, as defined by Recital 18 of the Framework Directive 2002/21: "…making regulation technologically neutral, that is to say that it neither imposes nor discriminates in favour of the use of a particular type of technology, does not preclude the taking of proportionate steps to promote certain specific services where this is justified, for example digital television as a means for increasing spectrum efficiency" (EC, 2002).
5. The right of telecoms operators and infrastructure owners to use private land without further act of government.

6. The frequency spectrum made available for other applications (such as mobile broadband) when switching from analogue to digital TV broadcasting.

7. 256 Kbps/s is the basic connectivity according to the International Telecommunication Union indicator definition.

8. There are four main administrative levels in Bosnia and Herzegovina: the State, the Federation of Bosnia and Herzegovina, the Republika Srpska and the Brčko District. The administrative levels of the State, the Federation of Bosnia and Herzegovina and the Republika Srpska are taken into account in the *Competitiveness Outlook 2018* assessment, when relevant. The Brčko District is not assessed separately.

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Annex 10.A1.
Digital society: Indicator scores

Table 10.A1.1. **Digital society: Indicator scores**

	ALB	BIH	KOS	MKD	MNE	SRB
ICT access and use						
National broadband strategy	3.0	1.5	3.5	3.0	3.0	3.0
Regulatory policy framework	3.0	1.5	2.5	3.0	3.0	3.0
ICT sector support strategy	3.5	2.0	2.5	2.5	2.0	2.0
Digital empowerment						
National digital strategy	3.5	1.5	3.0	2.5	3.0	3.0
E-skills strategy	2.0	2.0	2.0	2.5	2.0	3.0
E-inclusion strategy	1.5	1.5	0.5	0.5	2.5	1.5
E-health strategy	2.5	1.5	2.0	3.0	2.5	2.0
E-business and e-commerce						
Promotion of ICT adoption by SMEs	3.0	1.5	2.0	1.5	2.0	2.5
Consumer protection in e-commerce	1.5	1.0	1.5	1.5	2.0	2.5
E-commerce law	3.0	1.5	2.0	3.5	2.5	2.0
Digital security and privacy						
Privacy protection strategy	3.5	1.5	2.5	3.0	1.5	1.5
Digital security risk management strategy	3.0	2.0	2.5	1.0	3.0	3.0
E-authentication framework	4.0	2.0	2.0	2.0	2.0	2.5

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