

Chapter 1

LATVIA IN THE DIGITAL TRANSFORMATION: OPPORTUNITIES AND CHALLENGES

Recent economic and social trends in Latvia

Since the early 2000s, Latvia has experienced rapid growth and an increase in higher living standards. Over the period 2000-19, GDP growth (3.6% a year) was among the strongest in the European Union (EU28) and much higher than the OECD average (1.8%). Unemployment has been decreasing fast from the 2010 peak (19.5%) to 6.3% in 2019, fuelling strong growth in real wages (46% over 2012-18). Despite higher unit costs, exports have increased, particularly in high-tech products.

Notwithstanding this good performance, Latvia faces considerable challenges. Its population is declining fast due to aging and emigration, contributing to skill shortages and mismatch. As in other OECD countries, productivity growth decreased after the 2008 global crisis, particularly among small firms, which account for a large share of Latvia's businesses. Growth prospects are gloomy due to the impact of the COVID-19 pandemic on the world economy (OECD, 2020a). Regional disparities in income per capita and unemployment are large while poverty remains high. Informality is widespread, holding back productivity and reducing workers' access to training.

Policies to enhance digital transformation have a key role to play in tackling these issues. Digital technologies are an enabler for innovation and productivity in firms, particularly small and medium enterprises (SMEs). Digitalisation may help foster financial inclusion and reduce informality (i.e. economic activities not covered by formal arrangements) (ILO, 2015). It can also help increase the efficiency of the taxation system, for example, by improving tax assessment and collection, thereby providing more resources for public policies. The deployment of high-speed broadband infrastructure provides the foundation for digital transformation, thus giving individuals and firms access to government services and international markets and helping to reduce regional disparities.

Online educational resources offer new tools for teaching and provide individuals and workers with opportunities for training and skills upgrading. In particular, following the closure of all schools and universities during the COVID-19 pandemic, the Latvian government has promoted distant learning to ensure continuity of schooling and to provide equal opportunities in education (Chapter 4). More broadly, the response to the pandemic has entailed a massive transition to a remote operation mode (e.g. teleworking, e-commerce, telehealth) across all economic sectors, significantly accelerating the pace of the digital transformation in Latvia.

At the same time, the digital transformation may exacerbate existing inequalities, in particular between high and low-skilled individuals, and large and small firms, as well as urban and rural regions. Policies are key here to ensure that the potential benefits from the digital transformation are shared throughout the economy and society.

The digital transformation has the potential to foster productivity

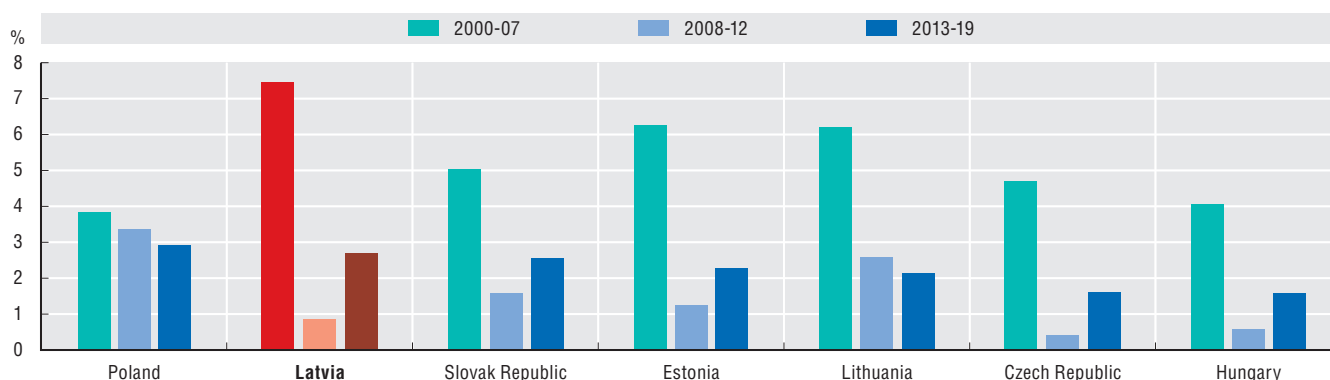
Latvia has made significant economic progress since the beginning of the millennium, with the economy growing faster than the EU28 and the OECD.¹ Over 2000-07, annual GDP growth at constant prices in Latvia was 8.5% on average, higher than in the other Baltic States (8% in Estonia and 7.6% in Lithuania) and the EU28 (2.6%). The global crisis in 2008 hit Latvia more severely than peer countries (with a contraction of -6.9% a year over 2008-10) and growth resumed at a slower pace afterwards (3.6% a year) in line with other Baltic countries but still higher than the EU28 (1.6%) (The Conference Board, 2020). The direct impact of the shutdown to contain the COVID-19 pandemic in 2020 could reduce Latvia's GDP at constant prices by 25% (OECD, 2020a).

An aging population and emigration hamper the potential for growth in Latvia. About 10% of the population emigrated between 2000-17, while the working age population (15-74 years old) dropped by 21% over the same period – the largest decrease in the OECD. In addition, drivers of growth prior to the 2008 crisis (i.e. large capital inflows, rapid debt accumulation and a real estate boom) cannot sustain future growth (Blanchard, Griffiths and Gruss, 2013), with further growth reliant on increased productivity.

Labour productivity in Latvia remains lower than in other OECD countries, providing room for improvement. In 2017, GDP per hour worked was just 54% of the hourly productivity in high-income OECD countries (OECD, 2019a). Productivity growth, however, has slowed down considerably compared to the pre-crisis period. Average yearly growth in GDP per hour worked dropped from 7.8% in 2000-07 to 2.9% in 2013-18, although it remains higher than in Baltic and Central European countries (Figure 1.1).

Figure 1.1. Labour productivity growth in Latvia and selected OECD countries, 2000-19

Average annual growth in GDP per hour worked (%)



Source: The Conference Board (2020), *The Conference Board Total Economy Database*, April 2019, www.conference-board.org/data/economydatabase (accessed on 6 May 2020).

Limited innovation in business seems to be an important factor in slow productivity growth. Few Latvian firms have adopted new production technologies, launched new products or introduced new organisational methods. The share of innovating SMEs is among the lowest in the OECD, with Latvian firms lagging behind other OECD countries in their use of digital technologies, which is limited to basic tools (Chapter 4).

Digital technologies have the potential to increase productivity in firms across all economic sectors. Big data and data analytics can help firms better understand their production processes, the needs of their clients and partners, and the overall business environment. Digital technologies can also improve the capability of firms to outsource key business functions and to access a range of financing instruments, which can help improve performance. Finally, online platforms can support the productivity of low-tech service firms, for example by providing them with booking facilities and efficient matching algorithms based on consumer review and rating systems (OECD, 2019b). Promoting digital uptake by businesses, particularly SMEs, would go a long way towards fostering productivity growth in Latvia (Chapter 4).

Digital innovation is key for productivity

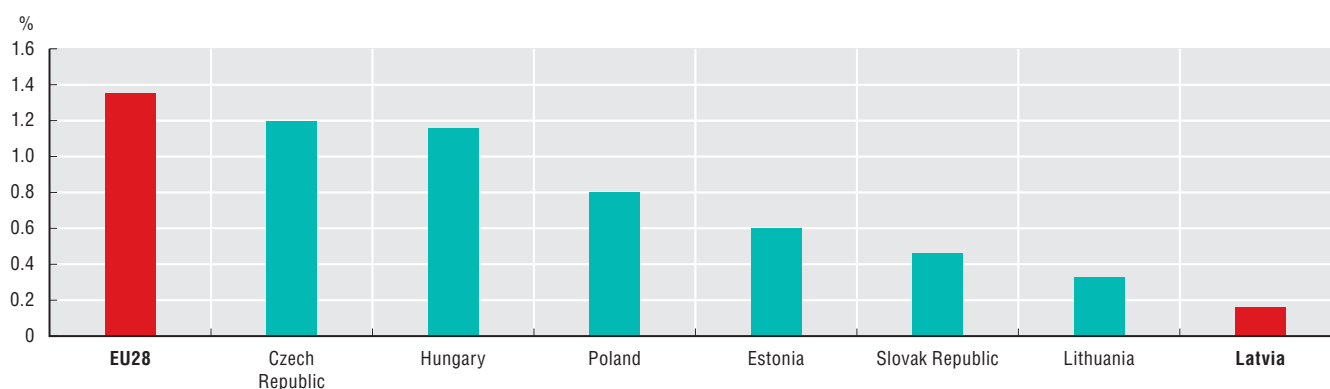
Digitalisation is opening up new opportunities for innovation. However, research and development (R&D) expenditures in Latvia are low with almost a quarter of R&D funded by the European Union. Latvian businesses also have among the lowest rates of R&D in Europe, particularly in information industries (Figure 1.2). In order to raise innovation in firms, Latvia has put in place several programmes to increase R&D as part of the National Development Plan 2014-20 (Chapter 4).

The number of researchers and PhD graduates is particularly low and incentives for higher education institutions (HEIs) to collaborate with industry seem weak, with the notable exception of Riga Technical University (European Commission, 2018a). Only 7% of Latvia's scientific publications on ICTs are listed among the top 10% of citations (OECD, 2019a). In order to improve the quality of research, the government has introduced a new funding model, concentrating resources in more effective universities and HEIs (Chapter 6).

Almost half of Latvian firms report financing as an obstacle to investment, which can act as a barrier to innovation. SME lending has remained low since the financial crisis of 2008. The Guidelines for Science, Technology Development and Innovation 2014-2020 put forward a Strategy for Smart Specialisation with the objective of fostering a structural transformation of the economy. The Strategy's key areas include a knowledge-intensive bioeconomy, biomedicine, medical technologies and biotechnology, smart materials, technology and engineering, advanced ICTs and smart energy (Chapter 6).

Figure 1.2. Business R&D in information industries¹ in Latvia and selected OECD countries, 2016

As a percentage of value added



1. "Information industries" (ISIC Rev.4) include "Computer, electronic and optical products" (Division 26), "Publishing, audiovisual and broadcasting activities" (Divisions 58 to 60), "Telecommunications" (Division 61) and "IT and other information services" (Divisions 62 to 63).

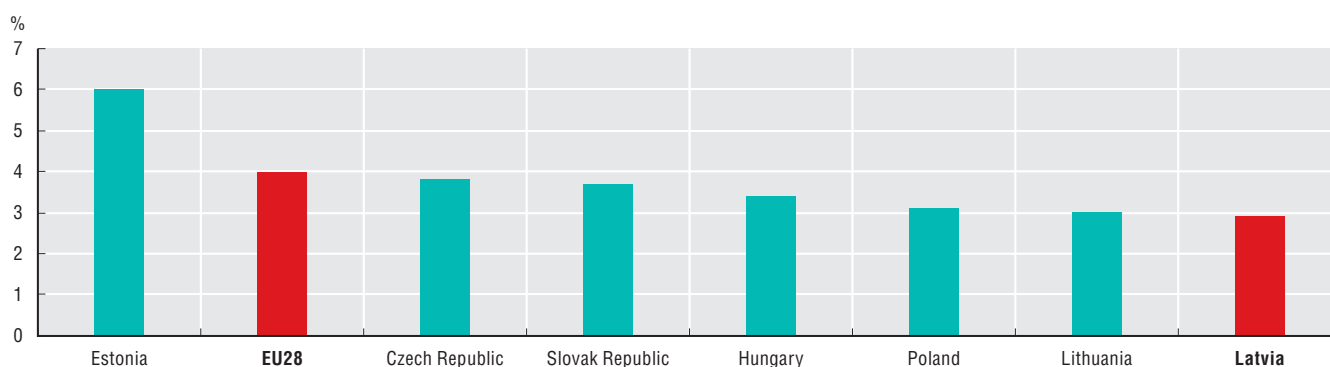
Sources: OECD (2020c), ANBERD Database, <http://oe.cd/anberd> (accessed on 6 May 2020); OECD (2020d), Main Science and Technology Indicators (database), <http://oe.cd/msti> (accessed on 6 May 2020).

Active labour market policies can help close the digital skills gap

Poor ICT skills and complementary skills such as advanced management limit the capacity of Latvian firms to make the best use of available digital technologies. For instance, over half of the population – and 67% of the unemployed – lack basic digital skills. Latvia has the lowest share of ICT specialists in employment in the European Union, with the share of women falling from 30% in 2008 to 14% in 2018 (Figure 1.3).

Figure 1.3. ICT specialists in employment in the European Union, 2018

As a percentage of total employment



Source: Eurostat (2020), Digital Economy and Society (database), <http://ec.europa.eu/eurostat/web/digital-economy-and-society/data/database> (accessed on 6 May 2020).

Latvian firms invest relatively little in the skills of their workers, especially with regard to ICT training. Furthermore, participation in life-long learning is low, with low-skilled workers less likely to take part in adult education. Latvia's skill shortages are exacerbated by policies that hamper the immigration of skilled workers (Chapter 4).

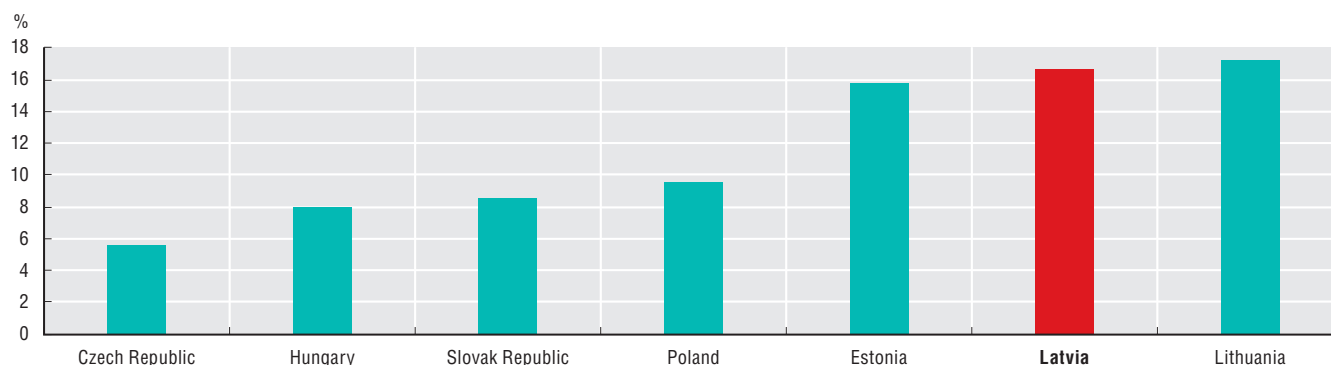
In 2016, the Latvian government spent only 0.15% of GDP on targeted training for particular groups, such as unemployed or inactive individuals or employed individuals at risk of involuntary job loss. This compares to 0.21% in Estonia, 0.24% in Lithuania and 0.36% across the OECD (OECD, 2018a). While the training system for unemployed workers and activation policies have improved in recent years, there is room for Latvia to foster skills for digitally intensive jobs by increasing public spending on active labour market policies (Chapter 4).

Using digital tools to foster inclusive growth

Overall living standards have improved fast in Latvia during the last two decades, but poverty remains higher than in other OECD countries (Figure 1.4). Reforms in 2018 made personal income taxes more progressive but tax revenues as a share of GDP are well below the OECD average. In particular, tax revenue losses due to widespread informality limit the government's ability to invest in infrastructure and social services (OECD, 2019a).

Figure 1.4. Individuals living in poor households in Latvia and selected OECD countries, 2017

As a percentage of total population



Note: The poverty threshold is 50% of median household disposable income. Household income is adjusted to take into account household size.

Source: OECD (2020e), *Income Distribution Database (IDD)*, <http://oe.cd/idd> (accessed on 6 May 2020).

Digital technologies can help strengthen the enforcement of tax and labour laws. The use of algorithms to analyse the data collected by the tax administration can improve the detection of tax evaders (OECD, 2018b), while better information exchange between law enforcement agencies would contribute to increasing their effectiveness. Latvia's State Revenue Service (SRS) is implementing digital tools and data analysis systems to better target audits at high-risk taxpayers. SRS is also working on a system to automatically match data received from foreign tax authorities with domestic data. By raising trust in public institutions, open government data can help fight informality and improve compliance with tax laws (Mickiewicz, Rebmann and Sauka, 2019). Digital job platforms could help boost labour market formality, formalise word-of-mouth transactions and allow tax authorities to extract data from such transactions, provided that appropriate regulations are in place.

Regional disparities in income per capita and unemployment are pronounced, leading to large differences in per capita tax revenues among municipalities. In addition, municipalities in Latvia are relatively small, which undermines the provision of high-quality public services, including education and public transport. Merging small municipalities would help to consolidate resources but is politically difficult. Digitalisation provides an opportunity to pool digital resources and e-services among several municipalities, helping to improve the efficiency of local public service provision and reduce the growing urban-rural divide.

Together with better transport infrastructure, high-speed broadband and better use of digital technologies would create economic opportunities for workers and businesses, particularly SMEs, in disadvantaged regions (Chapter 3).

Enhancing well-being along the digital transformation

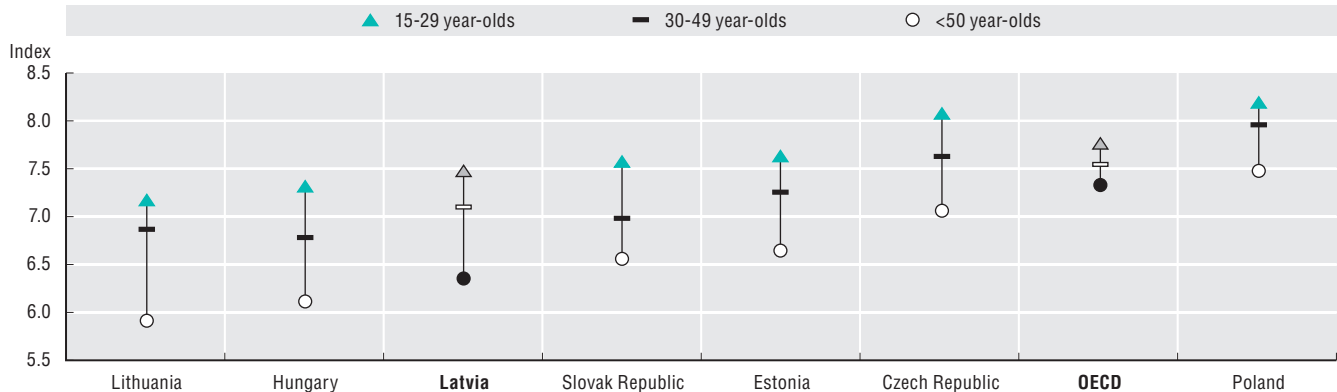
While average living standards have been steadily improving in Latvia, progress in well-being has been slower, particularly for certain groups. In 2017, 74% of the poorest households (bottom income quintile) in Latvia regarded their health as bad/very bad or fair, against 36% in the richest households (top income quintile). Not only was this gap (38 percentage points) much higher than the OECD average (21 percentage points), it has widened by over 10 percentage points since 2010 (OECD, 2020b).

1. LATVIA IN THE DIGITAL TRANSFORMATION: OPPORTUNITIES AND CHALLENGES

Life satisfaction remains particularly low among elderly people (50+), with an index value of only 6.3 (on a scale of 10) compared to the OECD average of 7.3 (Figure 1.5). Across age groups, Latvia also has among the highest number of deaths from suicide and substance abuse, largely related to alcohol (OECD, 2020b).

Figure 1.5. Life satisfaction in the OECD, 2018

Mean values of life satisfaction on a 0-10 scale, by age group



Note: For detailed figure notes, see: <https://doi.org/10.1787/888934081815>.

Source: OECD (2020b), “Evaluating the initial impact of COVID-19 containment measures on economic activity”, <https://oe.cd/il/2VU>.

Targeted digital inclusion policies (e.g. the Third Father’s Son programme) as well as further development of distant learning following the COVID-19 shutdown (Chapter 4), are crucial to closing the digital divide. Further development of e-health can improve access to health care for households in remote areas as well as to community-based services or home care in urban areas.

Finally, digital transformation can help in tackling collective challenges, including environmental management and protection (OECD, 2019b). Economic progress has increased the material footprint per capita in Latvia by over 3 tonnes since 2010 (OECD, 2020b). Digital technologies can enhance production efficiency and reduce material waste, thus improving sustainability while simultaneously increasing living standards. Smart materials, smart engineering and Smart Cities hold significant potential to enhance energy efficiency and foster the development of new environmental technologies (Chapter 6).

The Latvian Digital Transformation Strategy

The Information Society Development Guidelines 2014-2020 (INFSO) lay down Latvia’s digital strategy (Chapter 7). The Guidelines are a medium-term development plan, developed by a working group co-ordinated by the Ministry of Environmental Protection and Regional Development, and consisting of representatives from 12 sectoral ministries as well as several other public and private stakeholders, including ICT associations, chambers of commerce, local and regional governments (Cabinet of Ministers, 2013a).

INFSO 2014-2020 builds on the assessment of INFSO 2006-13. While Latvia achieved the objectives for Internet access and ICT usage set out in INFSO 2006-13, it lagged behind in terms of the size of the ICT sector and the use of e-commerce by both businesses and individuals, with overall e-health uptake still unclear due to lack of statistics. In addition, despite great progress over the 2006-13 period, there remains significant untapped potential for digital government, particularly in relation to internal process optimisation.

The aim of INFSO 2014-2020 is “to provide an opportunity for everyone to use the possibilities offered by ICT, to develop a knowledge-based economy and to improve the overall quality of life by contributing to the national competitiveness, and increasing and economic growth and job creation” (Cabinet of Ministers, 2013a).

1. LATVIA IN THE DIGITAL TRANSFORMATION: OPPORTUNITIES AND CHALLENGES

Economic growth and job creation are at the core of the strategy and inform the formulation of each of the seven action plans outlined in the guidelines: 1) ICT education and skills; 2) widely available access to the Internet; 3) advanced and effective public administration; 4) e-services and digital content for the public; 5) cross-border co-operation for the Digital Single Market; 6) ICT research and innovation; and 7) trust and security. Each action plan incorporates several components, as shown in Table 1.1.

Table 1.1. Information Society Development Guidelines 2014-2020: Action directions

Action directions	Components
ICT education and skills	Public awareness and readiness to use e-opportunities Development of citizen and entrepreneur e-skills Increase in public administration ICT competences Training of ICT practitioners and professionals according to labour requirements Promotion of algorithmic thinking and information literacy in educational programmes
Widely available access to the Internet	Transport networks Last mile Grids Mapping the current electronic communications network infrastructure
Advanced and effective public administration	Modernisation of basic public administration processes and activities Public e-participation and e-democracy Single public administration data space Optimisation of ICT infrastructure
E-services and digital content for the public	Opening of public administration data and transaction services to other users Development of shared platforms and services for the provision of public services Introduction of official e-mail addresses for citizens and entrepreneurs Digitalisation of public services Automated issuing and acceptance of electronic invoices Digitalisation and availability of cultural heritage Stimulation of Latvian language usage in the digital environment E-health solutions for efficient, safe and patient-oriented health care
Cross-border co-operation for the Digital Single Market	Creation of cross-border e-services and data exchange solutions Development of basic solutions for the provision of cross-border services
ICT research and innovation	ICT research Innovation
Trust and security	ICT security Human safety Trust in the electronic environment

Note: ICT = information and communication technology.

Source: Cabinet of Ministers (2013b), *Organisational Model for the Management of Public Information and Communications Technologies*, www.varam.gov.lv/in_site/tools/download.php?file=files/text/Darb_jomas/elietas//E2269_Organisational_Model_for_the_Management_of_Public_Infor_and_Com_Techn.doc.

INFSO 2014-2020 devotes special attention to the use of open data principles in public administration, as a tool to improve efficiency in public service delivery. Upgrading e-skills and improving Internet access and speed also have a prominent role, as enablers for e-commerce and e-business. The use of digital tools to reduce the administrative burden for business, notably SMEs, and improve the efficiency of the public administration is also key to INFSO 2014-2020.

A progress assessment of implementation of the guidelines was completed in October 2019 (VARAM, 2019). The final assessment will be submitted to the Cabinet of Ministers by the Ministry of Environmental Protection and Regional Development in July 2021.

Several other development documents are currently being implemented, several of which have a focus on improvement of e-government services. They include the Organisational Model for the Management of Public Information and Communications Technologies (Cabinet of Ministers, 2013b), the Conceptual

Architecture of Public Administration Information Systems (Cabinet of Ministers, 2015), and the information reports Using Cloud Computing Services in Public Administration (Cabinet of Ministers, 2018) and Latvia's Open Data Strategy (Cabinet of Ministers, 2019) (Chapter 4), as well as the Information Report on the Development of Artificial Intelligence Solutions (Cabinet of Ministers, 2020).

Other documents, such as the Concept for the Development of Next Generation Broadband Electronic Communications Networks 2013-2020 and the Electronic Communications Policy Plan 2018-2020, focus more on ICT access and infrastructure (Chapter 3). To these can be added the Guidelines for the Protection and Enforcement of Intellectual Property Rights 2015-2020, as well as the Cyber Security Strategy of Latvia 2014-18. Latvia's Cyber Security Strategy 2019-2022 was approved in September 2019 (Chapter 5).

Latvia does not currently have an overarching strategy in place for the digitalisation of business. There is, however, a Smart Specialisation Strategy, which is flanked by the Science, Technological Development and Innovation Guidelines for 2014-2020 (STDI) and the National Industrial Policy (NPI) guidelines 2014-2020. The latter aim explicitly to promote the modernisation of industry (European Commission, 2018b). The NPI were presented in 2012 and aim, among other objectives, to align workforce supply and education to the needs of economic development and to promote an open, creative and innovative environment. The NPI objectives were further articulated by the Programme for Improvement of the National Innovation System, approved by the National Strategic Council for Research and Innovation in 2016 (Chapter 6).

The Going Digital Integrated Policy Framework

As pointed out in Latvia's Information Society Development Guidelines, digital transformation affects different parts of the economy and society in complex and interrelated ways, making trade-offs between public policy objectives difficult to navigate.

The OECD has developed an integrated policy framework to support a whole-of-government approach to coherent policy making in the digital age. The framework recognises technologies, data and business models as driving forces underlying digital transformation, and considers the transformation across many different policy areas. The framework itself includes seven integrated building blocks (Figure 1.6).

Figure 1.6. Going Digital Integrated Policy Framework



Source: OECD (2019b), *Going Digital: Shaping Policies, Improving Lives*, <https://doi.org/10.1787/9789264312012-en>.

These integrated building blocks do not represent discrete policy domains; rather, each brings together multiple policy areas (see below for more details). This configuration underscores the point that leveraging the benefits and addressing the challenges of digital transformation requires identifying policy areas that are jointly affected and require co-ordination. It further implies that all building blocks are needed to make digital transformation work for growth and well-being.

Going Digital in Latvia aims to help Latvia ensure a coherent and cohesive whole-of-government approach to better respond to digital transformation and make it work for growth and well-being.

Access

Reliable communications infrastructure and services underpin the use of all digital technologies, and facilitate interactions between connected people, organisations and machines. Similarly, the data that flow through networks are also emerging as a source of value in the digital era, although their productive use is predicated on their availability.

As reliable communications infrastructures and services are essential to digital transformation, the first integrated building block concerns access to data, communications infrastructures and services (e.g. fibre optic backhaul, towers, spectrum, international cables). This encompasses efficient, reliable and widely accessible broadband communication networks and services, and key complementary enablers (e.g. a co-ordinated system of international domain names, increasing uptake of IPv6 Internet addresses, Internet exchange points [IXPs]), data, software and hardware. These components together act as the technical foundation for an open, interconnected and distributed Internet that enables the global free flow of information and, more generally, digital transformation. Multiple policy domains need to be considered to ensure access, including communications infrastructures and services, competition, investment and regional development.

Use

Access to digital networks provides the technical foundation for the digital transformation of economy and society. However, such access does not necessarily ensure the widespread diffusion of digital tools and their effective usage, which are necessary for individuals, governments and firms to reap the benefits of digital transformation through increased participation, innovation, productivity and well-being. Diffusion and effective use depend crucially on a number of variables including: investment in ICTs and knowledge-based capital (KBC), including data and organisational change; a favourable business environment (e.g. one that fosters business dynamism); the availability and allocation of skills; and trust. Multiple policy domains must therefore be considered, notably digital government, investment, business dynamism and SMEs, education and skills, and digital security and privacy.

Innovation

Innovation pushes the frontier of what is possible, driving job creation, productivity growth, and sustainable growth and development. Digital innovation, in particular, has driven radical changes in the ways that people interact, create, produce and consume. Digital innovation not only gives rise to new and novel products and services, but also creates opportunities for new business models and markets, and can drive efficiencies in the public sector and beyond. In addition, digital technologies and data drive innovation in a wide range of sectors, including education, health, finance, insurance, transportation, energy, agriculture and fisheries, as well as the ICT sector itself. Multiple policy domains need to be considered in order to foster innovation, including entrepreneurship and SMEs, science and technology, competition, digital government, and sectoral policies such as energy, finance, transport, health and education, among others.

Jobs

Digital transformation has already begun to change the nature and structure of organisations and markets, raising important questions about which jobs might disappear and where new ones will arise, what they will look like and which skills will be required. At the same time, issues around who might

be most affected, and what can be done to foster new job creation and align skills development with the changing skills requirement of jobs, have emerged. Technological advances and the introduction of new business models have given rise to the “platform economy” and led to the emergence of new forms of work such as “crowd work”, “gig work” and other forms of on-demand labour. Ensuring that digital transformation leads to more and better jobs will depend on the kind of policies put in place, especially in the areas of labour markets, education and skills, and social protection. As impacts may be concentrated in certain industries and regions, sectoral and regional policies will also play an important role.

Society

Digital transformation affects society and culture in complex and interrelated ways, as digital technologies change the ways in which individuals, firms and governments interact among and with one another. For digital transformation to enhance growth and well-being, it is essential that public policies support a positive and inclusive digital society. To do so, multiple policy domains need to be considered, including social policies (e.g. housing and welfare), education and skills, tax and benefit policies, environment, health and digital government. Digital transformation changes the distribution of benefits, raising questions about where life is getting better, and for whom, and making social policies an important part of the policy toolbox, able to address a range of digital divides.

Trust

Trust is fundamental to the digital transformation. In its absence, individuals, firms and governments will not make full use of digital technologies, and an important source of potential growth and social progress will remain unexploited. Countries may benefit from greater cross-border co-operation if they develop comprehensive and coherent national strategies for digital security and privacy to address issues such as the protection of personal data, the resilience of essential services (e.g. water, energy, finance, public health and safety), the creation of incentives (e.g. cyber insurance, public procurement), support to SMEs, and related skills development in consultation with all relevant stakeholders. At the same time, it is important to continue promoting effective protection to consumers engaged in e-commerce and other online activities, as this will help the digital economy flourish and become more inclusive.

Market openness

Digital technologies are transforming the environment in which firms compete, trade and invest. Market openness policies related to trade, investment, financial markets, competition and taxation play an important role in ensuring that favourable conditions exist for the digital transformation to flourish. Digital transformation also affects policies related to market openness, raising opportunities and posing challenges. Governments could benefit from periodically reviewing their market openness policies and, where appropriate, updating them to ensure they are well suited to making digital transformation work for growth and well-being.

Going Digital in Latvia

The Review is organised as follows:

Chapter 2 uses strategic foresight to explore three alternative future scenarios, which could result from the present digital transformation of the global economy and society. These foresight scenarios are intended to help Latvian decision makers better anticipate disruptive changes, identify critical uncertainties, develop innovative new strategies and policies, and stress-test existing plans and practices.

Chapter 3 reviews recent developments in the Latvian communication market, examines institutional frameworks as well as communication policies and regulation, and provides policy recommendations.

Chapter 4 reviews recent trends in the use of digital technologies by individuals, businesses and the government in Latvia. It examines national programmes to overcome digital divides among individuals and firms, and provides policy recommendations, including for the development of digital skills.

Chapter 5 analyses Latvia's digital security policies to foster economic growth and resilience, examines the steps taken to ensure that people can trust that their data are managed in a confidential manner and their privacy is protected, reviews the Latvian framework for protecting digital consumers and provides policy recommendations to enhance trust in the digital economy in Latvia.

Chapter 6 reviews the main technological trends driven by digitalisation, including R&D and big data. It examines Latvia's innovation policies in this area and makes recommendations for promoting digital innovation in the national innovation system. It also reviews recent transformations in Latvia's key industries and services and examines national policies with a view to fostering "smart" specialisations, particular in relation to Latvia's integration in global value chains.

Chapter 7 examines the policies analysed in the previous chapters in relation to their coherence among different domains, and provides recommendations to foster synergies across government ministries, levels and institutions, based on the OECD Going Digital Integrated Policy Framework.

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Note

1. The comparisons given in this report do not aim to benchmark Latvia against a given set of countries, but to understand Latvia's performance in different policy areas related to digital transformation. Therefore, the countries/regions considered for the comparison may vary from one area to another.



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