



Digital Economy and Society Index (DESI)

2019 Country Report

Lithuania

About the DESI

The European Commission has been monitoring Member States' digital competitiveness with the Digital Economy and Society Index (DESI) reports since 2015. The set of reports includes both country profiles and thematic chapters.

The DESI country reports combine quantitative evidence from the DESI indicators across the five dimensions of the index with country-specific policy insights and best practices. An in-depth telecoms chapter is annexed to the reports for each Member State.

The thematic chapters present a European-level analysis of broadband connectivity, digital skills, use of the internet, digitisation of businesses, digital public services, the ICT sector and its R&D spending, and Member States' use of Horizon 2020 funds.

To improve the methodology and take account of the latest technological developments, a number of changes have been made to the DESI for 2019. The DESI now covers:

- *5G readiness,*
- *Above basic digital skills,*
- *At least basic software skills,*
- *Female ICT specialists,*
- *ICT graduates,*
- *People who never used the internet,*
- *Professional social networks,*
- *Doing an online course,*
- *Online consultations and voting,*
- *Individuals selling online,*
- *Big data,*
- *Medical data exchange and*
- *e-Prescriptions.*

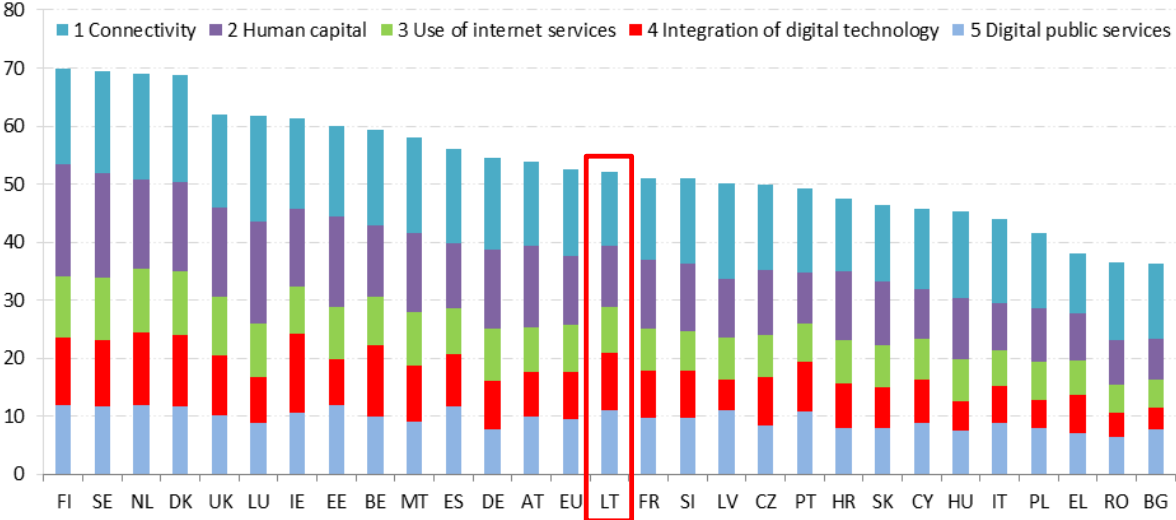
The DESI was re-calculated for all countries for previous years to reflect the above changes in the choice of indicators and corrections to the underlying data. Country scores and rankings may thus have changed compared with previous publications.

For further information, please consult the DESI website: <https://ec.europa.eu/digital-single-market/en/desi>.

Lithuania overview

	Lithuania		EU
	rank	score	score
DESI 2019	14	52.0	52.5
DESI 2018	14	49.2	49.8
DESI 2017	18	44.6	46.9

Digital Economy and Society Index (DESI) 2019 ranking



Lithuania ranks 14th out of the 28 EU Member States in the European Commission Digital Economy and Society Index (DESI) 2019.

Its score increased due to an improved performance in many of the DESI dimensions measured. Lithuania ranks highest (eighth) in the fields of Digital public services and Integration of digital technologies, thanks to widespread availability and continuous progress in the up-take of e-government services, while businesses have increased their e-commerce turnover and cross-border selling.

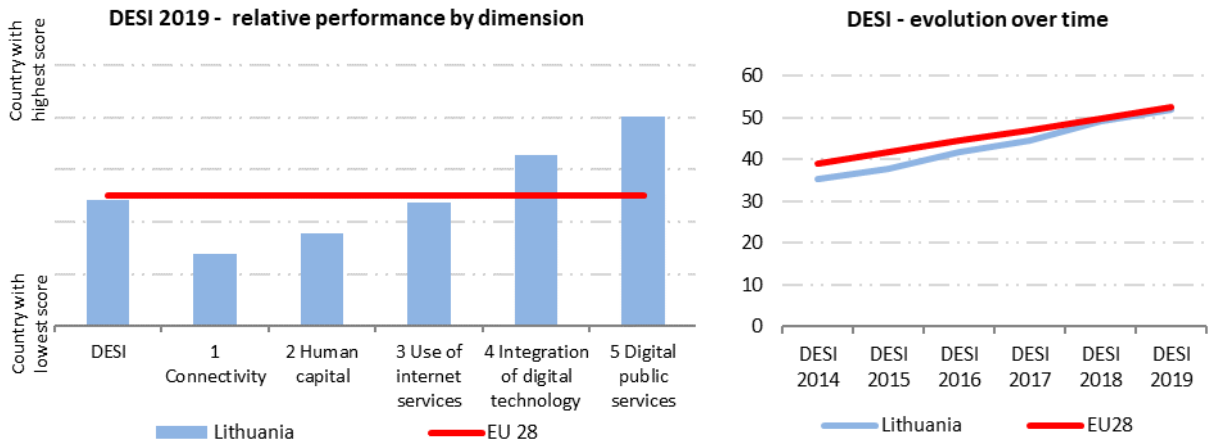
Lithuania has improved as regards the Human capital dimension and Use of internet services dimension but still scores below the EU average as regards the level of digital skills. As regards connectivity, there is room for improvement in NGA coverage.

The current Lithuanian Digital Agenda strategy, the Information Society Development Programme for 2014-2020 was adopted in 2014 and amended in December 2017¹. The strategy, under the responsibility of the Ministry of Economic Affairs and Innovation in cooperation with other relevant

¹ [http://eimin.lrv.lt/uploads/eimin/documents/files/30310_LRV%20nutarimas\(en\).pdf](http://eimin.lrv.lt/uploads/eimin/documents/files/30310_LRV%20nutarimas(en).pdf)

government ministries, is being implemented through an interinstitutional action plan² that is updated annually.

The renewed strategy covers all areas of the digital economy and society: digital skills, digital content in Lithuanian language, investments in high-speed broadband, e-government, use of open public data and innovative e-service creation, security, reliability and interoperability. This programme was complemented in August 2018 by a National Cybersecurity Strategy³. The Lithuanian Industry Digitisation Roadmap for 2019-2030, setting a digitalised industry vision by 2030, will be added in the course of 2019.

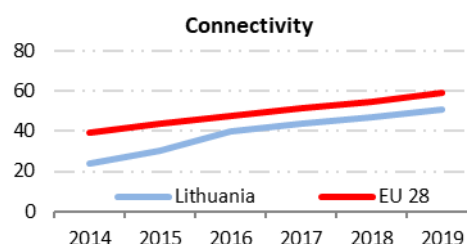


² <https://www.e-tar.lt/portal/lt/legalAct/a1e0ba10aa8211e88f64a5ecc703f89b>

³ <https://e-seimas.lrs.lt/portal/legalAct/lt/TAD/27107170d0lithu4511e8a82fc67610e51066?ifwid=axl7z9asu>

1 Connectivity

1 Connectivity	Lithuania		EU
	rank	score	score
DESI 2019	26	50.8	59.3
DESI 2018	25	47.1	54.8
DESI 2017	24	43.6	51.2



	DESI 2017	Lithuania		EU	
	value	DESI 2018	DESI 2019	rank	DESI 2019
1a1 Fixed broadband coverage % households	81% 2016	82% 2017	85% 2018	27	97% 2018
1a2 Fixed broadband take-up % households	63% 2016	65% 2017	64% 2018	23	77% 2018
1b1 4G coverage % households (average of operators)	96% 2016	98% 2017	98% 2018	12	94% 2018
1b2 Mobile broadband take-up Subscriptions per 100 people	75 2016	78 2017	89 2018	16	96 2018
1b3 5G readiness Assigned spectrum as a % of total harmonised 5G spectrum	NA	NA	0% 2018	13	14% 2018
1c1 Fast broadband (NGA) coverage % households	50% 2016	54% 2017	63% 2018	27	83% 2018
1c2 Fast broadband take-up % households	39% 2016	45% 2017	47% 2018	13	41% 2018
1d1 Ultrafast broadband coverage % households	NA	54% 2017	61% 2018	18	60% 2018
1d2 Ultrafast broadband take-up % households	12% 2016	27% 2017	29% 2018	10	20% 2017
1e1 Broadband price index Score (0 to 100)	93 2016	92 2017	92 2018	5	87 2017

Lithuania made some progress over the past year in Connectivity⁴, which however did not translate into improvement of its overall rank (26th in 2019 compared to 25th in 2018). Its progress has focused on mobile broadband take-up, fast (NGA) and ultrafast broadband coverage. Additionally, Lithuania has achieved better results than the EU average in 4G coverage, fast and ultrafast broadband take-up, ultrafast broadband coverage and the broadband price index (ranking as the fifth cheapest Member State). While its ultrafast coverage is higher (61 %) but close to the EU average (60 %), its

⁴ Broadband coverage figures for indicators 1a1, 1c1 and 1d1 have been revised since the 2018 DESI report. Figures now represent the number of actually connected households (households that are directly connected to fixed broadband lines). These homes may not necessarily have an active subscription. This new methodology is consistent with the definitions of the Commission and ensures comparability of the Lithuanian figures with the rest of the EU.

fibre-to-the-premises (FTTP) coverage (60.6 %) is more than double the EU average (29.6 %). Nevertheless, Lithuania's performance is still being undermined by low fixed broadband coverage (85 %, against the EU average of 97 %), fixed broadband take-up (64 %, against the EU average of 77 %), mobile broadband take-up (89 subscriptions per 100 people, compared with the EU average of 96) and next generation access (NGA) coverage (63 %, against the EU average of 83 %).

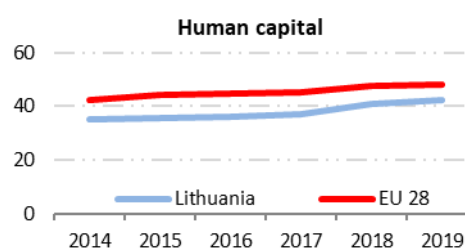
In 2018, the Commission approved the Development of Next Generation Access Infrastructure - RAIN3 project (a state aid measure). This project is designed to ensure further development of broadband networks in rural areas between 2018 and 2021. It entails offering electronic communication operators that wish to connect end-users with download speeds above 30 Mbps wholesale access to a newly built fibre backhaul network which will be provided by a state-owned body called *Plačijauostis internetas*. The new backhaul infrastructure will be deployed in areas currently not covered by next generation access (NGA) networks and lacking sufficient backhaul infrastructure, and where there are no plans for such coverage in the next three years (white areas). It will also help to bring fibre to the base stations and lay the basis for the rollout of 5G. In view of the above, Lithuania is expected to make further efforts to increase public investment in fibre networks, in addition to private investment, in order to develop the next generation of access infrastructure in white areas.

In 2018, Lithuania started preparation for 5G rollout by adopting a 5G Roadmap. Telia Lietuva (the incumbent operator), as well as Tele 2 and the state-owned LRTC, conducted initial 5G trials. The first 5G-related spectrum auction (covering frequencies in the 3.4-3.8 GHz band) was planned for September 2019 but is expected to be delayed. The conditions of the auction will include an obligation to cover one major city by 2020, in line with EU targets. The 700 MHz reassignment is planned to take place by 30 June 2020. Lithuania faces obstacles in preparing for the rollout of 5G, due to the restrictions stemming from unresolved cross-border coordination issues with non-EU countries (mainly Russia). To address this issue, Lithuania has requested the Commission's assistance. Another obstacle is associated with limits on electromagnetic fields (EMF). In Lithuania, these are lower than the maximum limits laid down in the 1999 Council Recommendation, which makes it challenging to densify the network in urban areas. 34 % of the spectrum harmonised at EU level for wireless broadband has been assigned so far in Lithuania.

Overall, Lithuania made some progress in 2018 towards meeting the gigabit society and 5G objectives but challenges remain, especially considering its low fixed broadband coverage and take-up and its low next generation access (NGA) coverage. Achieving these objectives depends on factors including the correct functioning of public institutions and on ensuring separation of regulatory and policy-making roles. The latter is also crucial to foster trust in the sector.

2 Human capital

2 Human capital	Lithuania		EU
	rank	score	score
DESI 2019	19	42.2	48.0
DESI 2018	20	40.7	47.6
DESI 2017	21	36.9	45.4



	DESI 2017	Lithuania	DESI 2019		EU
	value	DESI 2018	value	rank	DESI 2019
2a1 At least basic digital skills % individuals	52%	55%	55%	16	57%
2a2 Above basic digital skills % individuals	29%	32%	32%	13	31%
2a3 At least basic software skills % individuals	54%	57%	57%	16	60%
2b1 ICT specialists % total employment	2.1%	2.5%	2.7%	21	3.7%
2b2 Female ICT specialists % female employment	0.8%	1.2%	1.4%	11	1.4%
2b3 ICT graduates % graduates	2.1%	1.8%	2.0%	25	3.5%

In Human capital, Lithuania ranks 19th in the EU, below the EU average. Although growing numbers of Lithuanians are going online, basic and advanced digital skills levels remain below the EU average. Only 55 % of people have basic digital skills (as opposed to 57 % in the EU as a whole), although Lithuania is one of the EU countries with the lowest proportion of adults with a low level of education (in 2017 only 12% Lithuanians have less than lower secondary education, against an EU average of 25%). Despite growing demand on the labour market and policy measures taken to fill this gap, the availability of ICT specialists is still below the EU average (2.7 % against 3.7 %). Among businesses that have recruited or tried to recruit ICT specialists, 40 % reported difficulties in filling their vacancies. Only 9 % of companies provide training for staff, against 23 % in the EU as a whole⁵. As regards numbers of ICT graduates, Lithuania performs less well than most EU countries, with only 2 % of ICT graduates. Action taken in recent years to increase enrolment in ICT studies has yet to show results (more ICT graduates). ICT female specialists account for only 1.4 % of female employment.

Lithuania has no separate Digital Skills Strategy. However, the first goal of the Digital Agenda is to reduce the digital divide by encouraging Lithuanians to gain more skills in the safe and beneficial use of ICT. The latest update of the strategy places more emphasis on this goal. The priority target groups identified are rural, older, disabled and lower-income residents. The EU-funded project 'Connected

⁵ Digital Scoreboard, 2019.

Lithuania⁶ launched in 2018, implemented by the Information Society Development Committee together with members of the National Digital Skills and Jobs Coalition, supports local communities. 100,000 Lithuanians who do not yet use the internet will be trained by 2020, through a network of digital leaders and e-scouts, based on the European Digital competence framework.

The 2018 Code week was particularly successful, with the first involvement of the Ministry of Education and a considerable increase in the number of schools taking part (120) and 22,100 participants. Additionally, several ongoing projects aim to improve computer studies in primary schools such as the '*Kompiuteriukai Vaikams*' initiative⁷.

The Digital Agenda Strategy also seeks to tackle the shortage of ICT specialists. It includes measures designed to encourage more young people to choose ICT as a career, to attract more women and to improve vocational training for ICT specialists. The Akademija.IT⁸ project encourages vocational training, trains trainers and retrains people with educational background for which there is less demand, in close partnership with businesses. Lithuania aims to attract ICT professionals in several ways. The country promotes relocation of start-ups from neighbouring non-EU countries. The Digital Explorers⁹ project connects Lithuanian IT companies with Nigerian IT specialists and promotes their legal migration.

Increasing the number of Lithuanian ICT specialists, reducing the basic shortfall in digital skills, narrowing the gender-gap and boosting the industry investments in up-skilling the ICT labour force are essential to enable businesses to create, adopt and implement digitisation solutions and thereby to exploit the full potential of the digital economy.

Highlight 2019: Women Go Tech¹⁰

Women Go Tech is a nationwide professional mentorship programme designed to attract more female talents into ICT and Engineering careers. The programme is led by Infobalt, the ICT industry association, and it is financed by Infobalt's corporate partners and sponsors. It started in 2016 and reached 800 applications in 2018. The programme offers quality one-to-one mentoring and counselling sessions, provides expert knowledge and organises networking and content-focused events.

The objective is to create 500 success stories of women in tech by 2021. So far there are 79, with participants finding a job or getting promoted as ICT specialists, or creating an ICT start-up. Participants have different background, not only IT and engineering, but many are generalists (e.g. project managers and product development managers). A balanced mix of male and female mentors have already provided 1,728 hours of mentoring/consultancy/trainings sessions and the programme's events have reached over 3,800 people.

⁶ www.prisijungusi.lt

⁷ <http://www.kompiuteriukai.lt/>

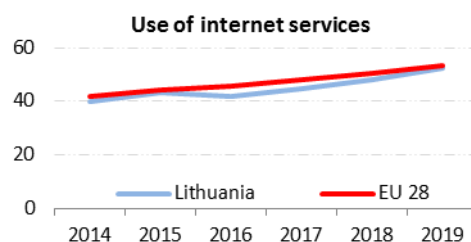
⁸ <http://akademija.it/>

⁹ <https://www.afriko.lt/ict4dprojectdigitalexplorers/>

¹⁰ <https://www.womengotech.lt/>

3 Use of internet services

3 Use of internet services	Lithuania		EU
	Rank	score	score
DESI 2019	13	52.1	53.4
DESI 2018	15	48.0	50.7
DESI 2017	18	44.5	47.8

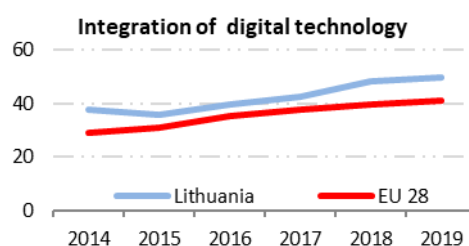


	DESI 2017	Lithuania		EU	
	value	DESI 2018 value	DESI 2019 value	rank	DESI 2019 value
3a1 People who never used the internet % individuals	22%	19%	17%	20	11%
	2016	2017	2018		2018
3a2 Internet users % individuals	72%	75%	78%	20	83%
	2016	2017	2018		2018
3b1 News % internet users	93%	93%	93%	1	72%
	2016	2017	2017		2017
3b2 Music, videos and games % internet users	77%	77%	84%	11	81%
	2016	2016	2018		2018
3b3 Video on demand % internet users	11%	11%	15%	21	31%
	2016	2016	2018		2018
3b4 Video calls % internet users	69%	71%	74%	3	49%
	2016	2017	2018		2018
3b5 Social networks % internet users	68%	69%	73%	15	65%
	2016	2017	2018		2018
3b6 Professional social networks % internet users	6%	11%	11%	19	15%
	2015	2017	2017		2017
3b7 Doing an online course % internet users	9%	9%	9%	8	9%
	2016	2017	2017		2017
3b8 Online consultations and voting % internet users	7%	12%	12%	10	10%
	2015	2017	2017		2017
3c1 Banking % internet users	73%	72%	76%	9	64%
	2016	2017	2018		2018
3c2 Shopping % internet users	44%	49%	54%	19	69%
	2016	2017	2018		2018
3c3 Selling online % internet users	7%	9%	10%	25	23%
	2016	2017	2018		2018

The Use of internet services in Lithuania is broadly comparable with the EU average. Although the number of Lithuanians who have never been online continues to fall, the percentage still stands at 17 %, well above the EU average of 11 %. People in Lithuania are keen to engage in a variety of online activities as in the rest of the EU. The most popular activity (93 % of internet users) is reading the news, putting Lithuania at number 1 in the EU; only 72 % users in the EU as a whole do this. Growing numbers of Lithuanians also listen to music, watch videos and play games online (84 % against 81 % EU-wide). The use of banking (76 %) and video calls (74 %) is more widespread than in other EU countries, but the use of video on demand and professional social networks (15 % and 11 %, respectively) is below the EU average.

4 Integration of digital technology

4 Integration of digital technology	Lithuania		EU
	Rank	score	score
DESI 2019	8	49.7	41.1
DESI 2018	8	48.4	39.6
DESI 2017	10	42.5	37.6



	DESI 2017	Lithuania		EU	
	value	DESI 2018 value	DESI 2019 value	rank	DESI 2019 value
4a1 Electronic information sharing % enterprises	40% 2015	47% 2017	47% 2017	3	34% 2017
4a2 Social media % enterprises	19% 2016	20% 2017	20% 2017	14	21% 2017
4a3 Big data % enterprises	12% 2016	12% 2016	14% 2018	10	12% 2018
4a4 Cloud % enterprises	13% 2016	17% 2017	17% 2018	12	18% 2018
4b1 SMEs selling online % SMEs	18% 2016	22% 2017	21% 2018	6	17% 2018
4b2 e-Commerce turnover % SME turnover	12% 2016	12% 2017	14% 2018	6	10% 2018
4b3 Selling online cross-border % SMEs	10% 2015	12% 2017	12% 2017	3	8% 2017

As regards the Integration of digital technology by businesses, Lithuania ranks eighth among EU countries, well above the EU average. It has made progress since 2017 as a result of improvements in the use of big data (14 % of enterprises) and due to the increase in e-commerce turnover. Lithuanian companies are increasingly seizing the opportunities offered by online commerce: 21 % of SMEs sell online (17 % in the EU as a whole), 12 % of total SMEs sell in other countries and 14 % of their turnover comes from the online segment (up from 12 % in 2017). The number of firms using social media (20 % in 2016) and cloud services (17 %) remains static.

The main policy-making dialogue is led by the National Industrial Competitiveness Commission 'Pramonė 4.0'¹¹. Additionally, the digitisation platform launched in 2016 involves major stakeholders with a bottom-up approach and the participation of high-level representatives from policy making bodies, industry and research. During 2018, thematic working groups on digital manufacturing, digitisation services, standardisation and legal regulation, human resources and cybersecurity worked on proposing efficient solutions for industry digitisation.

¹¹ <https://industrie40.lt/platform-pramone-4-0-structure/>

An expert analysis completed in 2018 will help define the Lithuanian Industry Digitisation Roadmap for 2019-2030¹². The benchmark analysis identified a shortfall in the share of the medium and high-tech sector and possible underinvestment in automation and robotisation. An interinstitutional plan laying out a digitised industry vision by 2030 is expected in the course of 2019.

The national cybersecurity strategy, approved in August 2018, will develop cyber defence capabilities, ensure the prevention and investigation of cyber-crime, promote a culture of cybersecurity and associated innovation, and step up public-private and international collaboration. One of the issues the strategy will tackle is the need to increase the number of cybersecurity experts.

Lithuania is committed to making progress with new digital technologies and to investing strategically through EU-coordinated programmes. For instance, it is a member of the EuroHPC Joint Undertaking and it has signed the Declaration establishing a European Blockchain Partnership and the Declaration on Cooperation on Artificial Intelligence. Lithuania already has four Digital Innovation Hubs specialising in advanced manufacturing, laser technology, robotics, photonics, e-business models and IT solutions. A growing ecosystem has been created around the Blockchain Centre in Vilnius¹³ and numerous blockchain-based solutions are being developed for both SMEs and start-ups in the field of sustainable financial and smart technologies, including by state-owned companies.

In 2018, the Ministry of Economic Affairs and Innovation set up a group of experts on artificial intelligence which has started drawing up a national AI strategy to be completed in the course of 2019.

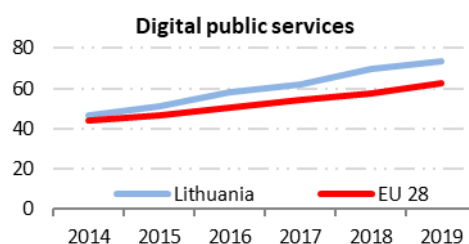
The fact that firms have made great strides towards integrating digital technology into their business practice, coupled with support for start-ups, should provide a sound basis for future developments. Promoting digital transformation, will need to include further awareness, raising on the importance of digitising SMEs.

¹² <https://inovacijos.lt/media/industry%20digitalization%20ROADMAP%20pre-final%20draft.pdf>

¹³ <https://bcgateway.eu/>

5 Digital public services

5 Digital public services	Lithuania		EU
	rank	score	score
DESI 2019	8	73.3	62.9
DESI 2018	7	69.5	57.9
DESI 2017	8	62.0	54.0



	DESI 2017	Lithuania	DESI 2019		EU
	value	DESI 2018 value	value	rank	DESI 2019 value
5a1 e-Government users % internet users needing to submit forms	78%	81%	81%	9	64%
	2016	2017	2018		2018
5a2 Pre-filled forms Score (0 to 100)	69	85	88	3	58
	2016	2017	2018		2018
5a3 Online service completion Score (0 to 100)	92	95	96	5	87
	2016	2017	2018		2018
5a4 Digital public services for businesses Score (0 to 100) - including domestic and cross-border	91	93	97	4	85
	2016	2017	2018		2018
5a5 Open data % of maximum score	NA	NA	46%	24	64%
			2018		2018
5b1 e-Health services % individuals	NA	19%	19%	12	18%
		2017	2017		2017
5b2 Medical data exchange % of general practitioners	NA	NA	25%	18	43%
			2018		2018
5b3 e-Prescription % of general practitioners	NA	NA	85%	9	50%
			2018		2018

As regards Digital public services, Lithuania ranks eighth in the EU, well above the EU average. The country performs very well as regards pre-filled forms and digital public services for businesses. There is a high level of online interaction between public authorities and citizens: 81 % of Lithuanian online users actively engage with e-government services (64 % in the EU as a whole). The availability of e-government services for business is also impressive; in this Lithuania scores 97 out of 100, ranking fourth in the EU. It comes 12th in the EU in terms of e-health services, with 19 % of Lithuanians having used health and care services provided online. 85 % of general practitioners use e-prescriptions, while 25 % of them exchange medical data.

All the administrative and public e-services for which demand is highest are now available online, and Lithuania continues to digitise those that are less popular as well. There was a targeted publicity campaign in 2018 to promote the use of e-services. The e-government gateway¹⁴ provides links to a total of 608 e-services.

In the area of e-health, Lithuania has created an integrative platform for medical institutions MedVAIS to exchange and view medical images, diagnosis and reports. It also provides capabilities

¹⁴ <https://www.epaslaugos.lt/portal>

for off-site viewing and reporting, distance education and tele diagnosis; enables teleradiology and telecardiology and facilitates services in remote and rural parts of the country. Patients can view their diagnostic tests via web-based viewers using the public e-health portal. Data depersonalisation features enable data to be further used for education, research and innovation; however, these possibilities are not yet being fully exploited. A Lithuanian innovation project in the e-health sector is the start-up Oxipit ChestGlass project¹⁵. This is the first-to-market chest X-ray search solution that enables radiologically similar images to be identified in a given database. Lithuania has signed the European Declaration of cooperation towards access to at least 1 million sequenced genomes in the EU by 2022 a crucial initiative for genetic data sharing.

Lithuania has achieved remarkable results in terms of awareness-raising and use of e-government services. It has also introduced several e-health solutions. However there is a recognised need for further efforts to support the take-up of e-health services, to ensure the necessary commitment from healthcare institutions and resources to help the adoption of new technologies in the health system. This includes ensuring that those using the system- both medical practitioners and patients – have sufficient computer skills.

¹⁵ <https://www.oxipit.ai/>