



Digital Economy and Society Index (DESI)

2019 Country Report

Malta

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:

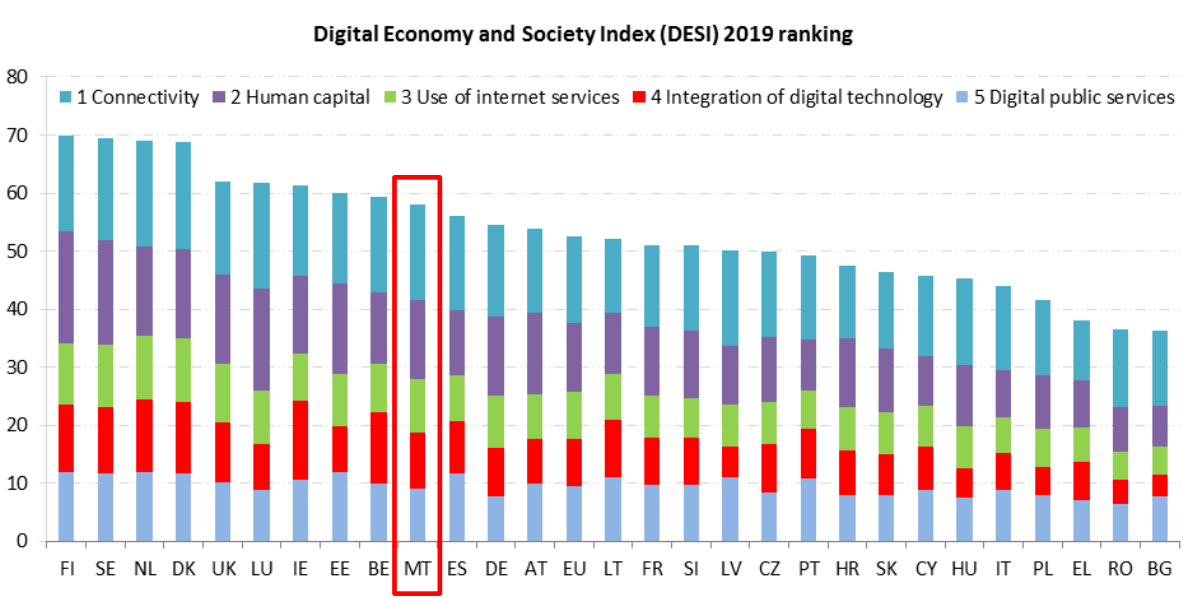
- *5G readiness,*
- *Above basic digital skills,*
- *At least basic software skills,*
- *Female ICT specialists,*
- *ICT graduates,*
- *People who never used the internet,*
- *Professional social networks,*
- *Doing an online course,*
- *Online consultations and voting,*
- *Individuals selling online,*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

Malta overview

	Malta		EU
	rank	score	score
DESI 2019	10	58.1	52.5
DESI 2018	10	56.6	49.8
DESI 2017	8	55.0	46.9



Malta ranks 10th out of the 28 EU Member States in the Digital Economy and Society Index (DESI) 2019. Over the last few years, its score has increased at a somewhat slower pace than the EU average.

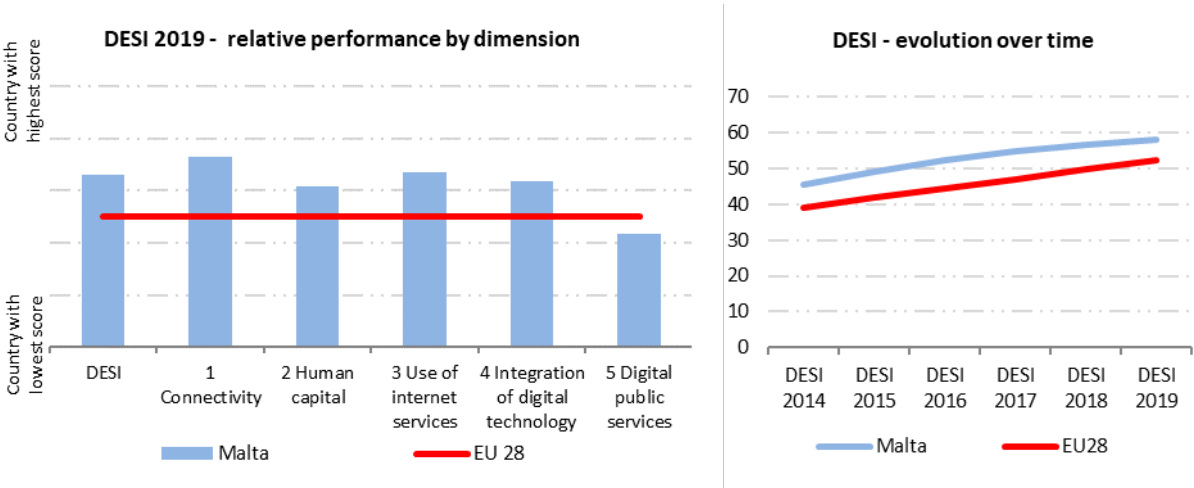
Malta performs above the EU average in four of the five dimensions of the index. Malta remains a European leader in the availability of fixed broadband (basic, fast and ultrafast), being the only Member State with full coverage of ultrafast networks. It does well in Human capital, mainly because it has a large number of ICT graduates. Maltese internet users score particularly well on online consultations and voting. Maltese businesses rank first on the use of big data. However, Malta scores below average in Digital public services. Although it is a leader in the provision of e-government services, it lags behind in the use of e-government and also in e-health. It is a challenge to further improve digital skills, which is vital also to enhance the Integration of digital technologies in enterprises.

The Digital Malta Strategy¹ was launched in 2014. This is a policy document to guide the country towards the 2020 vision that 'Malta will prosper as a digitally-enabled nation in all sectors of the society'. The strategy puts forwards 71 actions under three strategic themes, namely Digital Business,

¹ <https://digitalmalta.org.mt/en/Pages/Home.aspx>

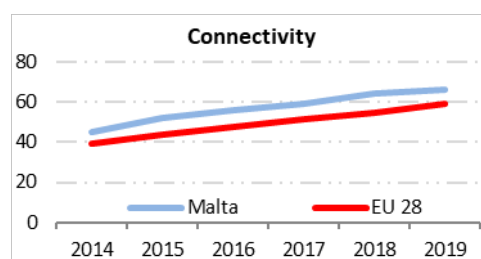
Digital Government and Digital Citizen. These vertical strategic themes are underpinned by three driving forces, namely (a) regulation and legislation, (b) infrastructure and (3) human capital. In 2017, the Malta Communications Authority (MCA) prepared a Strategy update for 2018-2020.

The key achievements in 2018 include a comprehensive strategy on blockchain, the launch of the Emerging Technologies Lab, the Innovation Hub Programme, a new strategy and various initiatives on digital skills, further developments of mobile e-government services and the Connected e-Government programme.



1 Connectivity

1 Connectivity	Malta		EU
	rank	score	score
DESI 2019	7	65.9	59.3
DESI 2018	6	64.3	54.8
DESI 2017	6	59.3	51.2



	DESI 2017	Malta	DESI 2019	EU
	value	DESI 2018 value	value rank	DESI 2019 value
1a1 Fixed broadband coverage % households	100% 2016	100% 2017	100% 1 2018	97% 2018
1a2 Fixed broadband take-up % households	79% 2016	83% 2017	83% 7 2018	77% 2018
1b1 4G coverage % households (average of operators)	99% 2016	99% 2017	83%² 26 2018	94% 2018
1b2 Mobile broadband take-up Subscriptions per 100 people	65 2016	88 2017	97 12 2018	96 2018
1b3 5G readiness Assigned spectrum as a % of total harmonised 5G spectrum	NA	NA	0% 13 2018	14% 2018
1c1 Fast broadband (NGA) coverage % households	>99.5% 2016	>99.5% 2017	>99.5% 1 2018	83% 2018
1c2 Fast broadband take-up % households	47% 2016	53% 2017	69% 2 2018	41% 2018
1d1 Ultrafast broadband coverage % households	NA	>99.5% 2017	>99.5% 1 2018	60% 2018
1d2 Ultrafast broadband take-up % households	3% 2016	11% 2017	23% 13 2018	20% 2017
1e1 Broadband price index Score (0 to 100)	NA 2016	NA 2017	NA 2018	87 2017

With an overall connectivity score of 65.9, Malta ranks seventh among Member States in connectivity, dropping one place compared with DESI 2018. Malta performs the best in all three coverage indicators (fixed, fast – NGA – and ultrafast) with almost 100 % of households covered. Fixed broadband take-up (83 %) remained stable and is above the EU average of 77 %. Significant improvements were registered in mobile broadband take-up (from 88 subscriptions per 100 people in 2017 to 97 in 2018) and in ultrafast broadband take-up (from 11 % of the homes subscribing to >=100 Mbps in 2017 to 23 % in 2018).

The Maltese national regulatory authority, MCA, is expected to launch a consultation on the new National Broadband Strategy in 2019. The strategy should pave the way for the future of fixed and mobile broadband in Malta including the establishment of the 5G ‘path-to-deployment’. In the

² 4G coverage measures the average coverage of those mobile operators providing 4G services. In Malta, a third operator started 4G services in 2018, which caused a downward change in average 4G coverage.

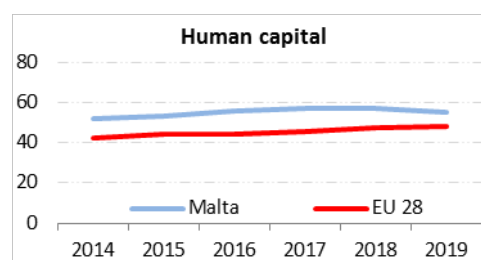
meantime, the MCA is taking a number of demand driven initiatives such as the MCA Free WiFi project, which aims to spread WiFi hotspots extensively across the Maltese islands. There are currently more than 420 free WiFi hotspots around Malta and Gozo with campaigns promoting the use of the smartphone as a productivity tool in e-commerce and training initiatives. To improve international connectivity, the MCA launched at national level the relevant state aid process to establish an incentive programme that would support investment in submarine cables. Malta is currently in the process of implementing the government's EUR 700 million plans to upgrade all the roads within seven years, so the island is witnessing a huge number of major infrastructural projects in various localities. While this would represent a good opportunity for operators to boost infrastructural competition, this would be hindered by the lack of a well-functioning single information point and of a complete mapping of the existing infrastructures caused by an only partial implementation of the Cost Reduction Directive.

In Malta, 30 % of the total 2090 MHz spectrum harmonised at EU level for wireless broadband has been assigned. In June 2018, the MCA adopted a roadmap for the ultra-high frequency (UHF) band between 470-790 MHz that lays out the key initiatives and milestones concerning the availability of the 700 MHz band for the provision of wireless broadband (WBB). To address unresolved spectrum coordination issues with non-EU countries, Malta requested the assistance of the Commission. Furthermore, the MCA is currently working to develop the relevant spectrum framework for the licensing of radio spectrum in the 3.6 GHz and 26 GHz bands. With regard to 5G trials, during 2018, the MCA received an application from Huawei Technologies and granted a trial licence. This trial licence enabled Huawei Technologies to carry out a demonstration of their 5G network equipment during a period of 5 days. While some mobile operators have reported that they are deploying a 5G-ready network, for the time being none of Malta's main mobile operators have expressed particular interest in deploying 5G, partly because of the significant investments recently made in 4.5G roll-out, as a result of which most of the territory is now covered with 4.5G services.

Malta performs well in broadband connectivity. It is ranked first in all fixed broadband coverage indicators of the DESI thus achieving the European broadband coverage objectives. Malta would benefit from focusing now on paving the way for 5G deployment, proceeding swiftly with the update of the National Broadband Plan, and making available of the pioneer bands for effective use by 2020.

2 Human capital

2 Human capital	Malta		EU
	rank	score	score
DESI 2019	9	55.0	48.0
DESI 2018	8	57.3	47.6
DESI 2017	7	57.1	45.4



	DESI 2017	Malta		EU	
	value	DESI 2018 value	DESI 2019 value	DESI 2019 rank	DESI 2019 value
2a1 At least basic digital skills % individuals	50% 2016	57% 2017	57% 2017	14	57% 2017
2a2 Above basic digital skills % individuals	32% 2016	39% 2017	39% 2017	7	31% 2017
2a3 At least basic software skills % individuals	52% 2016	57% 2017	57% 2017	15	60% 2017
2b1 ICT specialists % total employment	3.8% 2015	3.9% 2016	4.3% 2017	11	3.7% 2017
2b2 Female ICT specialists % female employment	1.7% 2015	1.2% 2016	1.1% 2017	17	1.4% 2017
2b3 ICT graduates % graduates	9.6% 2014	8.5% 2015	6.8% 2016	3	3.5% 2015

In the Human capital dimension, Malta ranks ninth among EU countries, above the EU average. Malta shows a mixed picture on internet user skills. 39 % have above basic digital skills compared with only 31 % in the EU, but Malta performs below average on software skills. The percentage of ICT specialists represents a relatively high proportion of the workforce (4.3 % as opposed to 3.7 % in the EU). Malta is among the leaders in terms of ICT specialists (6.8 % of all graduates).

Malta has recently developed a national e-skills strategy covering a large number of areas. The country will set up a national consultative committee on digital skills and establish a central reference on emerging and enabling technologies. It is a priority to continue funding in order to improve ICT teaching and guidance at local level. Digitisation in education will also be supported by the re-design of all educational curricula and the implementation of EU-based self-assessment tools in the educational sector. Sustained industry collaboration is key to preparing industry-based continued professional development (CPD) toolkits to provide short-cycle specific courses for industry. The strategy also aims at shifting the focus of young people from a consumer attitude towards a more participative use of technology and reducing the digital divide in the society. The implementation of the national e-skills strategy will start in 2019.

Malta has carried out numerous measures to improve digital skills, in which the e-Skills Malta Foundation played a key role. The foundation organised the Career Exposure Programme for secondary school pupils in collaboration with the Ministry for Education and Employment offering a one-week internship in various ICT companies or departments. Malta has launched a new ICT curriculum in secondary schools modernising both teaching and content. The Malta Information

Technology Agency continued the Student Placement Programme, under which tertiary level students are sponsored to work in the ICT industry for the summer months to gather more knowledge and experience in the field.

Malta has a National Coalition for Digital Skills, whose members include the Malta Information Technology Agency (MITA), the Malta Communications Agency (MCA), Malta Enterprise, the Malta Gaming Authority (MGA), the Malta Chamber of Commerce and the Ministry of Education and Employment. The coalition has carried out several initiatives such as awareness campaigns on digital skills and the IT profession, the organisation of PingFin 9, a pan-European fintech event and e-competence framework courses. The coalition was one of the key players for the Million Dollar Idea Event, a start-up competition organised by the ICT Students Association to develop entrepreneurial skills whilst building realistic business models.

Malta participated very actively in the EU Code Week in 2018. It ranked first on the number of events per capita. Over 80 % of schools, more than 6,000 teachers and 28,000 students participated.

Malta promotes the participation of women in the digital economy and society. In 2018, a women in ICT expert sub-group was set up within the e-Skills Malta Foundation to discuss issues and run specific projects and initiatives by the members of the group. Malta launched guidelines for increasing and retaining women in ICT, directed at industry and ICT related organisations. The government, through the foundation, collaborates with technology stakeholders in running specific digital skills related events for women, such as Digigirlz with Microsoft and Code like a Girl with Vodafone.

It is essential that Malta continues its efforts to further improve the internet user skills among the general public and also professional ICT skills.

Highlight 2019: Ćavetta Diġitali (Digital Key)

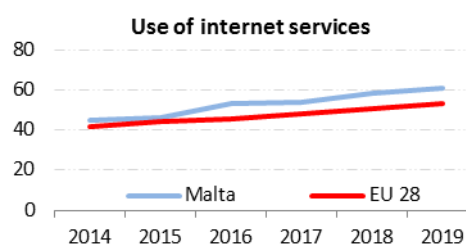
Ćavetta Diġitali is a joint initiative of the Malta Communications Authority (MCA) and the Parliamentary Secretariat for the Rights of Persons with Disability and Active Ageing (PSDAA) within the Ministry for the Family and Social Solidarity (MFSS).

The project provides ICT training to the over 55s. There have been two phases so far. In the first phase training was provided to the members attending day centres, while the second phase focused more on elderly people in the community.

The course consists of four two-hour sessions, held weekly, to promote the use of basic services on the internet. It focuses on how to make effective use of commonly used communication platforms and tools: setting up an email account, using YouTube, Skype and search engine facilities, as well as online shopping.

3 Use of internet services

3 Use of internet services	Malta		EU
	rank	score	score
DESI 2019	8	60.6	53.4
DESI 2018	8	58.6	50.7
DESI 2017	8	53.5	47.8

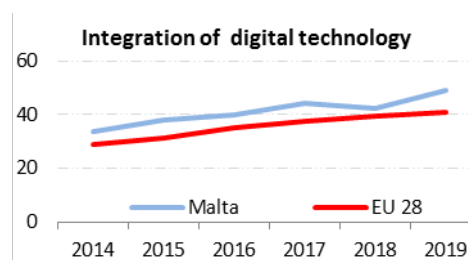


	DESI 2017	Malta	DESI 2019	EU
	value	DESI 2018	value rank	DESI 2019
		value		value
3a1 People who never used the internet % individuals	21%	18%	17% 21	11%
3a2 Internet users % individuals	77%	80%	80% 16	83%
3b1 News % internet users	79%	83%	83% 12	72%
3b2 Music, videos and games % internet users	90%	90%	88% 5	81%
3b3 Video on demand % internet users	26%	26%	47% 7	31%
3b4 Video calls % internet users	49%	56%	59% 10	49%
3b5 Social networks % internet users	82%	87%	85% 3	65%
3b6 Professional social networks % internet users	23%	17%	17% 9	15%
3b7 Doing an online course % internet users	4%	8%	8% 12	9%
3b8 Online consultations and voting % internet users	16%	22%	22% 2	10%
3c1 Banking % internet users	60%	62%	62% 16	64%
3c2 Shopping % internet users	63%	64%	66% 15	69%
3c3 Selling online % internet users	27%	36%	36% 2	23%

Overall, Malta ranks eighth in the Use of internet services by citizens, above the EU average. 80 % of the population uses the internet at least once a week, compared with 83 % in the EU. Maltese internet users engage in a broad range of activities online. 88 % of internet users play music, videos and games (81 % in the EU), 85 % use social media (the third highest in Europe, EU average is 65 %) and 83 % read news online (72 % in the EU). Malta outperforms the EU average also in video on demand (47 %) and in making video calls (49 %). 22 % participated in online consultations or voting - the second highest figure in the EU. However, Malta has an average performance in transactional services such as e-banking and online shopping. 66 % of internet users shop and 62 % bank online. Maltese internet users are very active in selling online.

4 Integration of digital technology

4 Integration of digital technology	Malta		EU
	rank	score	score
DESI 2019	9	48.7	41.1
DESI 2018	10	42.4	39.6
DESI 2017	8	44.1	37.6



	DESI 2017	Malta	DESI 2019	EU
	value	DESI 2018	value rank	DESI 2019
		value	value	value
4a1 Electronic information sharing % enterprises	30%	29%	29% 18	34%
4a2 Social media % enterprises	27%	26%	26% 8	21%
4a3 Big data % enterprises	19%	19%	24% 1	12%
4a4 Cloud % enterprises	14%	NA	22% 9	18%
4b1 SMEs selling online % SMEs	18%	15%	20% 7	17%
4b2 e-Commerce turnover % SME turnover	6%	6%	NA	10%
4b3 Selling online cross-border % SMEs	12%	9%	9% 10	8%

Malta performs above the EU average in the Use of digital technologies by enterprises, and ranks ninth. Maltese businesses are very strong in the use of big data analytics (24 %, the highest rate in the EU), social media (26 %, EU average 21 %) and also cloud computing (22 %, EU 18 %). Electronic information sharing stands, however, below average at 29 %. In e-commerce, 20 % of SMEs sell online, and e-commerce represents 6 % of SMEs turnover. Cross-border online sales of SMEs are somewhat above the EU average. According to the Digital Intensity Index³, only 29 % of companies in Malta have a very low level of digitisation (46 % in the EU), and 32 % are highly digitised (18 % in the EU).

Malta has set the ambition to become the 'Blockchain Island'. In 2018, a legislative package comprising three legal acts was adopted to regulate the use of distributed ledger technologies (DLT). This framework covers virtual financial assets, including crypto-currencies and innovative technology arrangements and services. It also establishes the Malta Digital Innovation Authority (MDIA). This is the primary authority responsible for supporting all governmental policies that promote Malta as a centre of excellence in technological innovation, while setting and enforcing standards that ensure compliance with any other international obligations. The authority seeks to protect and support all users and also encourages all types of innovations, by allowing for maximum flexibility in the

³ Source: Digital scoreboard, <https://ec.europa.eu/digital-single-market/en/digital-scoreboard>

certification of Innovative Technology Arrangements. The authority launched the consultation process to start registering service providers and blockchain applications. Malta has also signed the Declaration creating the European Blockchain Partnership (EBP), and co-operates in the establishment of a European Blockchain Services Infrastructure (EBSI) to support the provision of cross-border digital public services, with the highest standards of security and privacy.

The government is currently assessing the opportunities in artificial intelligence (AI) with the aim of defining a national strategy. It is leading a dialogue with stakeholders to build awareness around the key topics and issues that will inform a holistic national AI framework. It analyses the impact of AI in boosting the digital economy and is planning to build a policy framework for ethically aligned, transparent and socially responsible AI in line with the European AI strategy. Malta has also signed the Declaration of Cooperation on Artificial Intelligence.

As regards high-performance computing, Malta is currently following developments as an observer in the recently established European High-Performance Computing Joint Undertaking (EuroHPC JU).

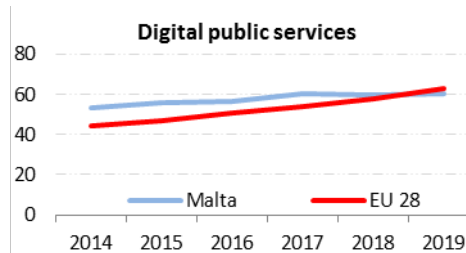
The Malta Information Technology Agency (MITA) contributes significantly to the integration of digital technologies by businesses. It runs an accelerator programme providing a pre-seed cash grant and advisory services worth EUR 30,000 to early stage tech start-ups with a business idea based on emerging technologies. In 2018, MITA supported 12 start-ups, of which seven were blockchain based, while the others focused on the internet of things, augmented reality, mobile technology, e-commerce and big data. MITA also organises various events such as meetups and workshops for the local tech start-up community.

In October 2018, MITA launched the Emerging Technologies Lab, which will be available for MITA employees, government employees, students and start-ups to explore emerging technologies, and share the knowledge gained and the benefits these technologies offer. The equipment already available in the lab includes a number of virtual and mixed reality headsets, augmented reality headsets, a 3D printer and a number of powerful computers that can be used for blockchain systems and cryptocurrency mining. The lab will organise events to familiarise participants with possible uses of these technologies.

In addition to the promotion of emerging technologies, a strong emphasis shall also be put on increasing the adoption of mature digital technologies, such as electronic information sharing, especially among SMEs.

5 Digital public services

5 Digital public services	Malta		EU
	rank	score	score
DESI 2019	16	60.2	62.9
DESI 2018	14	59.7	57.9
DESI 2017	10	60.1	54.0



	DESI 2017	Malta	DESI 2019	EU
	value	DESI 2018 value	value rank	DESI 2019 value
5a1 e-Government users % internet users needing to submit forms	60%	48%	50% 24	64%
5a2 Pre-filled forms Score (0 to 100)	98	100	100 1	58
5a3 Online service completion Score (0 to 100)	100	100	100 1	87
5a4 Digital public services for businesses Score (0 to 100) - including domestic and cross-border	94	94	94 6	85
5a5 Open data % of maximum score	NA	NA	19% 28	64%
5b1 e-Health services % individuals	NA	6%	6% 28	18%
5b2 Medical data exchange % of general practitioners	NA	NA	24% 21	43%
5b3 e-Prescription % of general practitioners	NA	NA	6% 28	50%

Malta ranks 16th in Digital public services, below the EU average. It is, however, a European leader in the provision of government services to citizens. It ranks first in the re-use of information across administrations to make life easier for citizens (Pre-filled forms) as well as in the sophistication of services (Online service completion); for both indicators it has the maximum score. The country also scores well on the online public services for businesses. However, e-government and e-health use by citizens remain low. Moreover, Malta is among the worst performing member states on open data, electronic prescriptions and medical data exchange between general practitioner and hospitals.

To modernise ICT infrastructure in its public administration, Malta launched the Connected e-Government (CONvErGE) programme in 2017, a EUR 40 million project co-financed by the EU. The project includes the development of a hybrid cloud infrastructure that will enable the self-provisioning and further automation of services and setting up a new platform to enable workflow-based services connected to government's back-end systems. It will also modernise several legacy information systems, and help implement a data infrastructure layer (including a national data portal) and an identity management solution. Malta has also continued to enhance the offer of mobile e-government services.

e-Health remains a challenging area in Malta, where there is low adoption of information and communication technologies both by citizens and general practitioners.