

Digital Economy and Society Index (DESI) 2022   
Cyprus

# About the DESI

*The European Commission has monitored Member States’ progress in digital and published annual Digital Economy and Society Index (DESI) reports since 2014.*

*Each year, the reports include country profiles which help Member States identify areas for priority action, and thematic chapters providing an EU-level analysis in the key digital policy areas.*

*The Commission adjusted DESI to align it with the four cardinal points set out in the Commission proposal for a Decision ‘*[*Path to the Digital Decade*](https://ec.europa.eu/info/strategy/priorities-2019-2024/europe-fit-digital-age/europes-digital-decade-digital-targets-2030_en)*’ which is being negotiated by the co-legislators. It sets EU level targets to be attained by 2030 to deliver a comprehensive and sustainable digital transformation across all sectors of the economy. 11 of the DESI 2022 indicators measure targets set in the Digital Decade. In future, the DESI will be aligned even more closely with the Digital Decade to ensure that all targets are discussed in the reports.*

*To date digitalisation is uneven in Member States and the trend of the last five years shows that the countries progressing at a slow pace five years ago generally continue to progress slowly. Reaching the Digital Decade targets depends on the collective effort of all. Each Member State will contribute to this ambitious goal from a different starting point, where resources, comparative advantages and other relevant factors such as the size of the population, the importance of its economy and the areas of specialisation will enter into play. For example, Member States with large economies or populations will need to perform well to enable Europe as a whole to reach the targets by 2030. Digital frontrunners will need to continue progressing to lead on digitalisation worldwide whilst all Member States’ digitalisation efforts will be driven by their economic and societal needs. A few targets however are set at 100%[[1]](#footnote-2) and this requires each Member State to meet them fully at national level. Overall, the performance of each Member State in DESI 2022 should be considered in the perspective of their future contribution to the attainment of the EU-level Digital Decade targets. Once the Decision on the Path to the Digital Decade enters into force there will be a structured cooperation process to work collectively towards the agreed targets.*

*The DESI scores and rankings of previous years are re-calculated for all countries to reflect changes in the underlying data. For further information, see the DESI website: xxxx.*

# Overview

|  |  |  |  |
| --- | --- | --- | --- |
|  | **Cyprus** | | **EU** |
|  | **rank** | **score** | **score** |
| **DESI 2022** |  |  |  |
| DESI 2021 |  |  |  |
| DESI 2020 |  |  |  |

Cyprus ranks xx among 27 EU Member States in the 2022 edition of the Digital Economy and Society Index (DESI).

Cyprus has improved its performance in almost all DESI dimensions, although in most cases it still scores below the EU average. The most marked progress is made in Connectivity and Digital public services.

Cyprus ranks above the EU average on mobile broadband take-up, has improved its coverage of Very High Capacity Networks (VHCN) and scores high in the 5G readiness (67%) and relative coverage (75%) indicators. Nevertheless, the coverage of VHCN is still far from the EU average and the Digital Decade target of 2030, which is for all European households to be covered by a Gigabit network and all populated areas to be covered by 5G. Therefore, Cyprus need to intensify its efforts in this regard.

Although the country improved its score since 2020, Cyprus is still below the EU average on basic digital skills, where one out of two Cypriots lacks basic digital skills. Despite the actions already initiated to foster digital skills for all, a significant change of pace in the country digital skills’ readiness. 66% of Cypriot SMEs use new technologies and have at least basic level of digital intensity, which is above the EU average of 55%. Cyprus has already established strong foundations for its contribution to the Digital Decade’s EU target to have more than 90% of SMEs with at least basic level of digital intensity. More than 60% of Cypriots are interacting digitally with public administrations, reaching the EU average of 64%. Cyprus’s performance in digital public services for citizens and businesses shows that ongoing efforts need to be continued to enable the country to achieve the Digital Decade target of 100% online provision of key public services for Union citizens and businesses.

The ‘Digital Strategy for Cyprus (2020-2030)’ under the responsibility of the Deputy Ministry of Research, Innovation and Digital Policy ([DMRID](http://www.dmrid.gov.cy)) should accelerate Cyprus digital transformation. The strategy, adopted in June 2020, is in line with the objectives proposed in Commission proposal for a ‘Decision of the European Parliament and of the Council establishing the 2030 Policy Programme ‘[Path to the Digital Decade](https://eur-lex.europa.eu/legal-content/EN/TXT/?uri=CELEX%3A52021PC0574)’. The Cypriot strategy aims to (i) promote e- government by redesigning the Ministry’s architecture and governance model, optimising our service delivery model, delivering a resilient, robust and secure ICT infrastructure; (ii) deliver a stronger digital economy and increasingly more digital and competitive industries; (iii) facilitate high speed network connectivity and increase take-up; (iv) promote an accessible and inclusive society that has the skills and the motivation to embrace the national digital transformation and actively participate in digital communities; and (v) ensure security in data and infrastructure and increase the trust of the public to the online transactions. The achievement of these ambitious objectives will be reflected, inter alia, in the fulfilment of the relevant Milestones & Targets of the RRP and gradually in the DESI data.

Cyprus is in the process of adopting the ‘[Digital Skills - National Action Plan 2021-2025](https://www.dmrid.gov.cy/dmrid/research.nsf/planning_en/planning_en?Opendocument)’ for the development and enhancement of digital skills for the entire population. This action plan aims to deliver an inclusive, open digital society, boosting the basic digital and basic software skills and creating a critical mass of ICT specialists, thus acting as an accelerator of the digital transition. The action plan will be implemented under the Cypriot [National Coalition for Digital Skills and Jobs](https://digital-strategy.ec.europa.eu/en/policies/national-coalitions) that will be reactivated in Q2 2022 under the coordination of DMRID. The mechanism for implementing these actions includes input from the public sector, academia and private sector.

The new ‘[Broadband Plan of Cyprus 2021-2025](https://dec.dmrid.gov.cy/dmrid/dec/ws_dec.nsf/broadband_en/broadband_en?OpenDocument)’ announced in November 2021 aims to strengthen and develop new infrastructure, technologies and connectivity services. The plan sets the following connectivity targets, to be achieved by 2025: (i) Gigabit connectivity for all main socio-economic drivers, (ii) all premises in organised communities (urban or rural) to have access to internet connectivity offering a download speed of at least 100 Mbps, upgradable to 1 Gbps, (iii) 100% of the population living in organised communities (urban or rural) and all major terrestrial transport paths to have uninterrupted 5G coverage with a download speed of at least 100 Mbps, (iv) 70% of households to have an internet connection with a download speed of at least 100 Mbps.

In May 2019, Cyprus adopted its ‘[Cyprus Industrial Strategy Policy](https://cutt.ly/xmnUIwj)’. In January 2020, the government approved the [national strategy on Artificial Intelligence](https://knowledge4policy.ec.europa.eu/sites/default/files/cyprus_ai_strategy.pdf) (AI), while a [new cybersecurity](https://dsa.cy/strategy/csrc-2020) strategy has been in place since 2021. The strategies are in alignment with and support the digital transition actions set out in the Recovery and Resilience Plan (RRP).

|  |
| --- |
| Question: Have you taken any digital-related actions regarding the war in Ukraine (for example, for cybersecurity, disinformation, connectivity)? If yes, please briefly describe them below. |
|  |

|  |
| --- |
| Digital in Cyprus’s Recovery and Resilience Plan (RRP) |
| Cyprus’s RRP has a total value of EUR 1.2 billion of which EUR 238 million is dedicated to the digital transition. It amounts to a digital share of 23% exceeding the digital target of 20%. The RRP measures related to digitalisation for 2021 and 2022 amount to EUR 42 million. These measures will contribute to Cyprus digital transition and concern all DESI dimensions:   * In Human capital actions focus on education (Α new teacher and school evaluation system), digital transformation of school units with the aim of enhancing digital skills and skills related to STEM education and digital skills in general (e-skills Action Plan and a measure on Skilling, Reskilling and Upskilling - digital skills) * In Connectivity the aim is to empower the National Regulatory Authority (OCECPR) and to enhance building cabling to be “Gigabit-ready” and to promote connectivity take-up. * For In the Integration of digital technology, there are investments on smart cities, smart and sustainable water management and smart metering infrastructure and the development of FinTech regulatory sandbox. * In Digital public services Cyprus plans several reforms and investments on e-government, e-health, Intelligent Transport Systems (ITS) using Digital Twin technologies, cloud-based platforms and e-justice. |

# 1 Human capital

|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| |  |  |  |  | | --- | --- | --- | --- | | **2 Human Capital** | **Country** | | **EU** | | **rank** | **rank** | **score** | | **DESI 2022** |  |  |  | | DESI 2021 |  |  |  | | DESI 2020 |  |  |  | | Chart to be added |

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
|  | **Cyprus** | | | **EU** |
|  | **DESI 2020** | **DESI 2021** | **DESI 2022** | **DESI 2022** |
| **1a1 At least basic digital skills** | **NA** | **NA** | **50%** | **54%** |
| % individuals |  |  | 2021 | 2021 |
| **1a2 Above basic digital skills** | **NA** | **NA** | **21%** | **26%** |
| % individuals |  |  | 2021 | 2021 |
| **1a3 At least basic software skills** | **NA** | **NA** | **60%** | **66%** |
| % individuals |  |  | 2021 | 2021 |
| **1b1 ICT specialists** | **3.2%** | **2.7%** | **3.1%** | **4.3%** |
| % individuals in employment aged 15-74 | 2018 | 2019 | 2020 | 2020 |
| **1b2 Female ICT specialists** | **19%** | **19%** | **18%** | **19%** |
| % ICT specialists | 2018 | 2019 | 2020 | 2020 |
| **1b3 Enterprises providing ICT training** | **31%** | **25%** | **25%** | **20%** |
| % enterprises | 2019 | 2020 | 2020 | 2020 |
| **1b4 ICT graduates** | **2.7%** | **2.6%** | **2.9%** | **3.9%** |
| % graduates | 2017 | 2018 | 2019 | 2019 |

Cyprus ranks xxrd in the EU on Human capital, above/below the EU average. In terms of basic digital skills, Cyprus is above/below the EU average of xx%, with % of people between 16 and 74 years having at least basic digital skills. xx% of the population have more than basic digital skills and xx% have basic software skills against EU averages of xx% and xx%, respectively. [More analysis of digital skills data to be added]. The share of ICT specialists in the workforce is lower than the EU average (3.1% compared to 4.3%). Cyprus almost reaches the EU average when it comes to female ICT specialists, representing 18% of ICT specialists in the country, against an EU average of 19%. ICT graduates account for 2.9% of total graduates compared to the EU average of 3.9%. Cyprus performs well in relation to the share of enterprises providing ICT training, which reach 25% and exceed the EU average of 20%. These figures shows that a change of pace is necessary to empower Cypriot citizens and endow the economy and society with enough ICT specialists to use and deploy advanced technologies.

The ‘[Digital Skills - National Action Plan 2021-2025](https://www.dmrid.gov.cy/dmrid/research.nsf/all/927EA351714F99EDC22587CE0028C090/$file/%CE%95%CE%B8%CE%BD%CE%B9%CE%BA%CF%8C%20%CE%A3%CF%87%CE%AD%CE%B4%CE%B9%CE%BF%20%CE%94%CF%81%CE%AC%CF%83%CE%B7%CF%82%20%CE%B3%CE%B9%CE%B1%20%CE%A8%CE%B7%CF%86%CE%B9%CE%B1%CE%BA%CE%AD%CF%82%20%CE%94%CE%B5%CE%BE%CE%B9%CF%8C%CF%84%CE%B7%CF%84%CE%B5%CF%82%202021-2025.pdf?openelement)’ (hereafter the Plan) that is in the process of adoption aims at developing and continuously upgrading digital skills of all population groups at every level. This Plan takes into consideration the latest developments in the field, including the targets for digital skills of Europe’s Digital Decade and is in line with the ‘[Path to the Digital Decade](https://eur-lex.europa.eu/legal-content/EN/TXT/?uri=CELEX%3A52021PC0574)’ Policy Programme. The Plan is expected to strengthen the digital skills and capacity of citizens across the whole spectrum of demographics, social structure and economic activity. Emphasis is placed on actions to respond to the growing needs of the labour market, for basic digital skills and ICT specialists. It also aims at redesigning the education system to better utilise digital tools in teaching and learning processes, cultivate the skills of the future and promote the STEM career path.

The Plan includes an analysis of scope and actions proposed per defined target group, namely: Society, Labour force (public and private sector), ICT professionals, and the education system. In addition, it touches upon matters of horizontal importance such as a targeted communications strategy, an e-learning platform that contains a self-assessment tool, a list of training opportunities from a variety of stakeholders-members of Cyprus’s [National Digital Skills and Jobs Coalition](https://digital-strategy.ec.europa.eu/en/policies/national-coalitions), e-learning material, as well as provisions for digital infrastructure and equipment in areas and establishments in need of such support. The Plan also has detailed references to all actions planned in the context of the RRP, in particular as regards training programmes for all listed target groups. The relevant national co-funding amounts up to EUR 3.18 million for the period 2021-2027.

In support of these, the Cyprus Pedagogical Institute ([CPI](https://www.pi.ac.cy/pi/index.php?lang=en)) in collaboration with public and private organisations, production companies, scholars, researchers and other professionals in the field, produces digital content, such as educational material (e-books, films and other audio-visual material) that are available online thus contributing to the development of digital skills, especially of students. In addition, as part of the digital transformation of schools that is included in the RRP Reform 4: ‘Digital transformation of school units with the aim of enhancing digital skills and skills related to STEM education’, Cyprus has a holistic redesign of educational curricula to promote the skills of the future, as well as STEM and ICT careers. The amounts funded under the RRF for this Reform are EUR 2 million for 2021 and EUR 2.56 million for 2022.

All secondary schools in Cyprus participated in the 2021 [EU Code week](https://blog.codeweek.eu/4-million-people-created-code-with-the-help-of-eu-code-week-in-2021/), carrying out activities such as coding and computational thinking. The EU Code week attracted four million people who participated in over 78 000 activities in over 49 countries around the world. In 2021, Cyprus organised 34 activities, less than in 2020 due to the COVID-19 restrictions, and attracted 1394 participants. These events saw a balanced share of male and female participants (51% female), with most of the events held in schools (97%).

The DMRID initiated a consultation amongst all education and training providers, e.g., the Ministry of Education ([MOECSY](http://www.moec.gov.cy/en/)), public and private universities, certified training centres, the Cyprus Academy of Public Administration ([CAPA](https://www.mof.gov.cy/mof/capa/cyacademy.nsf/index_en/index_en?opendocument)), the Cyprus Productivity Centre ([CPC](http://www.mlsi.gov.cy/mlsi/kepa/kepa_new.nsf/index_en/index_en?OpenDocument)) and the Human Resource Development Authority ([HRDA](https://www.cea.org.cy/en/we_qualify/anad)) for revamping their curricula and training offers for addressing the identified market needs. Programs addressed to the private sector for upskilling the labour force receive public funding or subsidy, including from the RRF funds, through the HRDA and the CPC. Regarding the public sector, the DMRID, in collaboration with CAPA have collected needs in advanced digital skills and are designing programs in areas such as cybersecurity. Currently, the DMRID is implementing a project management course across different public sector functions, targeting primarily ICT professionals, including those who are responsible for the implementation of the RRP reforms and investments.

The share of digital specialists on the Cypriot workforce is below the EU average and the future prospects are undermined by low rates of ICT enrolment and graduates. Cyprus is making significant efforts to improve the digital skills of its citizens through many actions. The swift implementation of the above actions and the monitoring of their results will be very important to ensure a strong contribution from Cyprus to the two EU level Digital Decade skills targets. [[2]](#footnote-3)

|  |
| --- |
| Highlight: “**Innovative Schools” & “eSafe Schools” Programmes** |
| The [Innovative Schools](https://innovativeschools.pi.ac.cy/) and the [eSafe Schools](https://esafeschools.pi.ac.cy/) programmes are designed to help individual schools and teachers utilise digital technologies and integrate them effectively into the learning processes. At their core lies the SELFIE Pedagogical Innovation Assistant Toolkit (SELFIE PTK), a comprehensive package assisting schools to develop a digital action plan based on the SELFIE self-reflection tool for strengthening their digital capacity. SELFIE PTK provides step-by-step guidelines for reviewing SELFIE results and setting priorities and goals, developing an evidence-based action plan, implementing and evaluating that plan.  Both programmes are offered at the beginning of each school year, and schools in Cyprus can apply to participate on a voluntary basis. Participating schools receive guidance and support from CPI. They also receive a small financial support for the implementation of actions. In addition, teachers from each participating school are designated as “Teacher Coaches”. Their role is to act as key supporters of the school’s effort to utilise and integrate digital technology in the learning process. This effort aims at forming teacher communities that share and spread good practices. Teacher Coaches receive ongoing training through CPI professional development programs to develop their digital competences.  Each year, 20-40 schools and corresponding Teacher Coaches participate in these programmes with the support and training from CPI. In the long term, is expected that schools will be able to use SELFIE PTK autonomously, contributing to the efforts of MOECSY towards a wider school-based implementation of digital education policies. SELFIE PTK has been developed under [key action 3 of Erasmus+](https://erasmus-plus.ec.europa.eu/programme-guide/part-b/key-action-3) ([project SHERPA](https://sherpa4selfie.eu/)) with a total EU grant of EUR 0.5 million. |

# 2 Connectivity

|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| |  |  |  |  | | --- | --- | --- | --- | | **1 Connectivity** | **Cyprus** | | **EU** | | **rank** | **score** | **score** | | **DESI 2021** |  |  |  | | DESI 2020 |  |  |  | | DESI 2019 |  |  |  | | Chart to be added |

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
|  | **Cyprus** | | | **EU** |
|  | **DESI 2020** | **DESI 2021** | **DESI 2022** | **DESI 2022** |
| **2a1 Overall fixed broadband take-up** | **87%** | **92%** | **92%** | **77%** |
| % households | 2019 | 2020 | 2021 | 2021 |
| **2a2 At least 100 Mbps fixed broadband take-up** | **2%** | **3%** | **26%** | **40%** |
| % households | 2019 | 2020 | 2021 | 2021 |
| **2a3 At least 1 Gbps take-up** | **<0.01%** | **<0.01%** | **0.17%** | **7.52%** |
| % households | 2019 | 2020 | 2021 | 2021 |
| **2b1 Fast broadband (NGA) coverage** | **100%** | **100%** | **100%** | **90%** |
| % households | 2019 | 2020 | 2021 | 2021 |
| **2b2 Fixed Very High Capacity Network (VHCN) coverage** | **10%** | **26%** | **41%** | **70%** |
| % households | 2019 | 2020 | 2021 | 2021 |
| **2c1 5G readiness** | **0%** | **67%** | **67%** | **56%** |
| Assigned spectrum as a % of total harmonised 5G spectrum | 04/2020 | 09/2021 | 01/2022 | 01/2022 |
| **2c2 5G coverage** | **NA** | **0%** | **75%** | **65%** |
| % populated areas |  | 2020 | 2021 | 2021 |
| **2c3 Mobile broadband take-up** | **84%** | **84%** | **91%** | **85%** |
| % individuals | 2018 | 2018 | 2021 | 2021 |
| **2d1 Broadband price index** | **37** | **42** | **64** | **73** |
| Score (0-100) | 2019 | 2020 | 2021 | 2021 |

During the reporting year, Cyprus entered a period of intense fixed and mobile network deployment mirrored by significant increase in both fixed and mobile broadband take-up, including at high speeds and a reduction in prices. In terms of policy developments, Cyprus adopted a new National Broadband Plan (NBP) 2021-2025, and transposed the European Electronic Communications Code.

The government indicated that the plan is aligned with the European Gigabit Society and Digital Decade policies. The plan sets as targets gigabit connectivity for all main socio-economic drivers, 5G and high speed connectivity in organised communities and very high capacity networks (VHCN) take-up in at least 70% of households. In its National Broadband Plan, the Deputy Ministry of Research, Innovation and Digital Policy signalled its intention to continue improving coverage and take-up of VHCN both in the fixed and mobile space, as well as improving the landscape for private investments and removing regulatory burdens of infrastructure deployment. Cyprus’ National Broadband Plan also includes some best practices from the Connectivity Toolbox, such as reducing the administrative burden of permit granting procedures and making available information to the public about 5G implementation. It must also be noted that a large part of the best practices from the Connectivity Toolbox were already in place prior to publication of the Connectivity Toolbox.

Over the last year, while VHCN coverage has increased to 41%, depicting an impressive 15-percentage points increase, it is still well below EU’s average (41% against 70%). This increase is exclusively linked FTTP deployment, as the cable operator has not yet upgraded its DOCSIS 3.0 network, which covers 65.9% of the households, exclusively in urban areas. Rural FTTP nears 8% of the households. The National Regulatory Authority expects the coverage to match the average EU levels in the coming years. Furthermore, the Office of Electronic Communications & Postal Regulations (OCECPR) has been empowered to perform geographical mapping for the advancement of VHCN, in order to spot areas that would remain uncovered by VHCN. For expansion of VHCN coverage in underserved areas, a state aid notification is ongoing. The investment will be used to fill the private investment gap that exists in rural or semi-urban areas where there is no commercial incentive to invest in a VHCN network.

Private FTTH deployment is underway by Cyta, Cablenet and Epic. Cyta has reported that they have so far connected 170 000 premises to fibre, and aim to increase FTTH connectivity to 90% of premises by 2026. Cablenet currently makes use of fibre for the backhaul, and complements this with DOCSIS 3.0 in the local loop. New fibre infrastructure shall not substitute the existing DOCSIS 3.0 network, but will be implemented in greenfield roll-out, i.e. where no infrastructure is already present. For its fibre roll-out, Epic has secured financing for 19 million euros by the European Investment Bank which will be used to increase the number of homes connected to fibre by Epic from 25 000 to 50 000. Cyta is considering phasing out its services over the existing copper network, but timing for the actual switch-off depends on when the fibre network has reached sufficient coverage. Cyta will need to give alternative operators a three-year notice before switching off local exchanges.

The providers have been successful in migrating a significant number of clients from low speeds to offers of at least 100 Mbps. Still, despite the good coverage of fibre, the take-up of Gigabit speeds is significantly below the EU average (0.17% against 7.52%). To address this issue, and following its pilot voucher scheme last year, the Cypriot government is currently preparing a new investment scheme to continue this programme. The new voucher scheme is intended to be in the form of a subscription subsidy, stimulating the demand for new VHCN subscriptions. To this end, another state-aid notification is expected.

Another part of the National Broadband Plan is the deployment of a new submarine cable. While currently, there are no capacity issues on existing infrastructure, two of the existing submarine cables are reaching the end of their life cycle. The deployment of a new submarine cable to Greece, included in Cyprus’ Resilience and Recovery Plan and in cooperation with Greece, will address the need to safeguard capacity in the future, as well as competition on this market. This may also help in addressing the high prices for traffic on submarine cables. The project will be funded through private and public means. The investment in a new submarine cable forms part of the government’s strategy to become a data gateway for East Europe. Additionally, Cyta plans to start commercial operations for its new submarine cable system “ARSINOE” in early 2022.

With regard to mobile connectivity, 5G roll-out in Cyprus is underway and mobile broadband take-up has increased significantly to a level well above the EU average. Within one year, its coverage of 5G networks went from 0 (2020) to 75% (2021) and is expected to further increase, thanks to the assignment of the 5G pioneer bands and the launch of the investments from the mobile network operators. Indeed, both the 700 MHz and 3.6 GHz 5G pioneer bands were authorised to operators in the beginning of 2021. In the 700 MHz band, Cyta and Epic have received two blocks of 10 MHz, while Cablenet and Primetel two blocks of 5 MHz. In the 3.6 GHz band, Cablenet, Cyta, Epic and Primetel have all received 100 MHz spectrum blocks. According to the Cypriot authorities, there is no market demand yet for the 26 GHz band. Cyprus thus scores only 67% in the 5G readiness index. The rights of use include a coverage obligation for 70% of the population, and coverage of all highways and major roads. In addition, the rights of use include obligations on providers to provide speeds of at least 100 Mbps on their 5G networks.

|  |
| --- |
| **Main market & regulatory developments** |
| Four market players compete on the Cypriot telecom market: Cyta (incumbent), Cablenet, Epic and Primetel. Bundled services remain popular with a slight increase of fixed broadband subscriptions as part of a bundle to 78%, in comparison with 73% last year. Of these bundles, 61% consists of fixed telephony and broadband access. Another 25% of bundled connections also include IP/cable TV access.  In 2021, the transposition of the EECC remained a work in progress in Cyprus. The implementation measures were finally adopted beginning of March 2022. Operators have noted that they do not foresee any difficulties in adhering to the new regulatory framework. In the field of net neutrality and following judgements of the Court of Justice of the European Union, OCERCP has reminded market players that zero rating of any network traffic on commercial grounds is forbidden.  Cyprus has furthermore updated their smartphone application for emergency communications in order to address shortcomings, namely by including a native non-voice two-way chat function and transmission of the end-user’s location to the PSAP. The latter function however requires an end-user to have their device connected to the internet in order to transmit their location.  During 2021, dispute resolution has taken place in relation to access to existing physical infrastructure of the incumbent operator. During this year, OCECPR has also begun work to revise the co-location decree currently in place. It is foreseen that the expected economic life of physical infrastructure will be altered, which will have an impact on the access costs to existing physical infrastructure.  New market analyses for markets 1 of the 2020 Recommendation (Wholesale local access provided at a fixed location) and 3b of the 2014 Recommendation (Wholesale central access provided at a fixed location for mass-market products) are being carried out by OCECRP, and are planned for public consultation in early 2022. The VULA services in the incumbent’s reference offer have not been taken up by alternative operators as the prices for backhaul were considered too high. Instead, alternative operators opt for grouping of traffic at a higher level.  Finally, the Cypriot Commission for the Protection of Competition, the Cypriot competition authority, has issued a decision against Cyta finding an infringement of a dominant position for pricing below cost of its pay-TV service Cytavision in bundled offers in 2013. In addition, the Administrative Court upheld an earlier decision of the Cypriot competition authority that found Cyta, inter alia, to charge unfair prices for the right of use of capacity in the submarine cable from Cyprus to London and Frankfurt. |

Cyprus has set ambitious objectives in the National Broadband Plan for 2025. The Cypriot government planned for strong improvement of its connectivity both in terms of fixed and wireless. In order to achieve these targets, the government partially relies on structural funds, and counts as well on CEF2 Digital. In addition, the private sector has presented plans on VHCN and 5G roll-out in the following years, which is likely to increase coverage in both fields. Finally, the deployment of a new submarine cable is a strategic goal through which Cyprus aims to position itself as attractive Member State for data centres.

# 3 Integration of digital technology

|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| |  |  |  |  | | --- | --- | --- | --- | | **3 Integration of digital technology** | **Country** | | **EU** | | **rank** | **score** | **score** | | **DESI 2022** |  |  |  | | DESI 2021 |  |  |  | | DESI 2020 |  |  |  | | Chart to be added |

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
|  | **Cyprus** | | | **EU** |
|  | **DESI 2020** | **DESI 2021** | **DESI 2022** | **DESI 2022** |
| **3a1 SMEs with at least a basic level of digital intensity** | **NA** | **NA** | **66%** | **55%** |
| % SMEs |  |  | 2021 | 2021 |
| **3b1 Electronic information sharing** | **33%** | **33%** | **34%** | **38%** |
| % enterprises | 2019 | 2019 | 2021 | 2021 |
| **3b2 Social media** | **38%** | **38%** | **42%** | **29%** |
| % enterprises | 2019 | 2019 | 2021 | 2021 |
| **3b3 Big data** | **5%** | **6%** | **6%** | **14%** |
| % enterprises | 2018 | 2020 | 2020 | 2020 |
| **3b4 Cloud** | **NA** | **NA** | **42%** | **34%** |
| % enterprises |  |  | 2021 | 2021 |
| **3b5 AI** | **NA** | **NA** | **3%** | **8%** |
| % enterprises |  |  | 2021 | 2021 |
| **3b6 ICT for environmental sustainability** | **NA** | **NA** | **NA** | **66%** |
| % enterprises having medium/high intensity of green action through ICT |  | 2021 | 2021 | 2021 |
| **3b7 e-Invoices** | **11%** | **13%** | **13%** | **32%** |
| % enterprises | 2018 | 2020 | 2020 | 2020 |
| **3c1 SMEs selling online** | **12%** | **15%** | **17%** | **18%** |
| % SMEs | 2019 | 2020 | 2021 | 2021 |
| **3c2 e-Commerce turnover** | **8%** | **5%** | **5%** | **12%** |
| % SME turnover | 2019 | 2020 | 2021 | 2021 |
| **3c3 Selling online cross-border** | **9%** | **9%** | **8%** | **9%** |
| % SMEs | 2019 | 2019 | 2021 | 2021 |

On Integration of digital technology in business activities, Cyprus ranks xx in the EU. This is supported by the fact that the share of Cypriot SMEs with at least a basic level of digital intensity is 66%, above the EU average of 55%. Cypriot enterprises take advantage of technology capabilities using electronic information sharing (34% compared to the EU average of 38%) and the social media where Cyprus is above the EU average (42% versus 29%). 17% of enterprises sell online, almost reaching the EU average of 18%. The same goes for SMEs selling online cross border, which are 8% and almost in line with the EU average of 9%. 42% of enterprises use cloud services, above the EU average of 34%. However, only 6% of Cyprus enterprises use big data analytics (below the EU average of 14%) and only 3% use AI (versus 8% in the EU). This shows that there is ample room for improvement for reaching the Digital Decade 2030 target of at least 75% of enterprises taking up cloud services, big data and AI. Cyprus is also underperforming in e-commerce turnover with 5% (EU average is 12%) and in e-invoices with 13% and far below the EU average of 32%.

In May 2019, the Council of Ministers adopted the ‘[Cyprus Industrial Strategy Policy](https://energy.gov.cy/assets/entipo-iliko/%CE%9D%CE%95%CE%91%20%CE%92%CE%99%CE%9F%CE%9C%CE%97%CE%A7%CE%91%CE%9D%CE%99%CE%9A%CE%97%20%CE%A0%CE%9F%CE%9B%CE%99%CE%A4%CE%99%CE%9A%CE%97%202019-2030%20%20.pdf)’ for 2019-2030. The Strategy recognises the importance of the digital transformation of Cyprus’s industry, and the transition to a circular economy, including a National Action Plan in this regard. Strengthening the Cyprus digital industry is a key pillar of the strategy which, among others, aims to enhance adoption and use of various technologies (e.g. Cloud, Big data and AI). In addition, it aims to increase adoption rate of digital production systems and applications, creation of smart factories and incorporation of cutting-edge technologies and digital services infrastructures, thus reinforcing Cyprus’s transition to Industry 4.0.

As part of the implementation of the Strategy, the [Ministry of Energy, Commerce and Industry](https://meci.gov.cy/en/) maintains a state-aid subsidy scheme providing financial support for the ‘digital enhancement/upscaling of SMEs’. Investments eligible for non-refundable funding, include, but are not limited to Cloud, Big data and data analytics and the use of AI, provided that the overall project has an upscale impact on the digital level of the enterprise. [A call for proposals issued in order to encourage SMEs to adopt digital technologies](https://meci.gov.cy/gr/sxediaxorigion) was launched in December 2019 with a budget of EUR 6 million. It is now in the payments phase where SMEs-beneficiaries, following the implementation of their approved projects for digital enhancement, are now claiming payment of their approved subsidy. Out of this amount, 50% has already been allocated for the eligible investments. According to Cyprus’s analysis, this call for proposals has incentivised private investments. More specifically, for every EUR 1 of public aid, it yields in average additional EUR 1.3 of private investment. In addition, an improved version of this scheme (for digital enhancement of SMEs) is being prepared with a budget of EUR 30 million. The new scheme is planned to be announced within Q2 2022.

In January 2020, the government approved the [national strategy on AI](https://knowledge4policy.ec.europa.eu/sites/default/files/cyprus_ai_strategy.pdf), which will be implemented by DMRID. The strategy is based on four key pillars, to maximise investment through partnerships, to create national databases, to nurture talents and lifelong learning, and to develop ethical and trustworthy AI. The strategy includes actions such as upgrading public services, creating new models of cooperation through AI, and implementing AI solutions both on internal operations of the public services and in various citizen service centres and channels with the development of automated services such as AI chatbots. The timeframe of implementation is until 2026.

The DMRID decided to provide funding for only one proposal submitted by a Cypriot consortium under the ‘Digital Europe Programme 2021-2027’ for developing a [Digital Innovation Hub](https://digital-strategy.ec.europa.eu/en/activities/edihs) (DIH) in Cyprus. With regards to the national priorities set at the RRP and the Smart Specialisation Strategy, the DIH is expected to play an important role horizontally by providing digitalisation support to all sectors and vertically by leading or taking part in processes of mobilising stakeholders towards digital innovation. The relevant national co-funding amounts up to EUR 3.18 million for the period 2021-2027.

Regarding the National Blockchain Legislation, a [public consultation](http://mof.gov.cy/gr/%CE%B3%CF%81%CE%B1%CF%86%CE%B5%CE%AF%CE%BF-%CF%84%CF%8D%CF%80%CE%BF%CF%85/%CE%B1%CE%BD%CE%B1%CE%BA%CE%BF%CE%B9%CE%BD%CF%8E%CF%83%CE%B5%CE%B9%CF%82-%CE%B5%CE%B3%CE%BA%CF%8D%CE%BA%CE%BB%CE%B9%CE%BF%CE%B9-%CF%85%CF%80%CE%BF%CF%85%CF%81%CE%B3%CE%B5%CE%AF%CE%BF%CF%85/%CE%B4%CE%B7%CE%BC%CE%BF%CF%83%CE%B9%CE%B1-%CE%B4%CE%B9%CE%B1%CE%B2%CE%BF%CF%85%CE%BB%CE%B5%CF%85%CF%83%CE%B7-%CE%BD%CE%BF%CE%BC%CE%BF%CF%83%CF%87%CE%AD%CE%B4%CE%B9%CE%BF-%CE%BC%CE%B5-%CF%84%CE%AF%CF%84%CE%BB%CE%BF-%CE%BF-%CF%80%CE%B5%CF%81%CE%AF-%CF%84%CE%B5%CF%87%CE%BD%CE%BF%CE%BB%CE%BF%CE%B3%CE%AF%CE%B1%CF%82-%CE%BA%CE%B1%CF%84%CE%B1%CE%BD%CE%B5%CE%BC%CE%B7%CE%BC%CE%AD%CE%BD%CE%BF%CF%85-%CE%BA%CE%B1%CE%B8%CE%BF%CE%BB%CE%B9%CE%BA%CE%BF%CF%8D-%CE%BD%CF%8C%CE%BC%CE%BF%CF%82-%CF%84%CE%BF%CF%85-2021) was completed and feedback was received. Based on this feedback, the law is under finalisation. In 2020, Cyprus submitted, through CEF, a proposal for establishing European Blockchain Service Infrastructure (EBSI) node(s). The proposal was selected for funding, and Cyprus is among the few early adopters of the EBSI. The implementation of the two years project started in May 2021, and aims at the development of a fully operational national EBSI under the coordination of DMRID.

Cyprus is committed to developing new advanced technologies and investing in them through EU- coordinated programmes and plans. This concerns, among other things, HPC, AI and quantum communication infrastructure. In 2019, [Cyprus signed a declaration](https://digital-strategy.ec.europa.eu/en/policies/european-quantum-communication-infrastructure-euroqci) agreeing to explore, together with 24 Member States, how to develop and deploy a quantum communication infrastructure across the EU over the next 10 years. Cyprus is participating in the EuroHPC Joint Undertaking, since July 2019 and is co-funding the operation of the national HPC competence centre (NCC) with EUR 2 million for the two-year period 2020-22. These emblematic EU initiatives is expected to provide the means and the opportunities to SME’s to benefit from advanced technologies, increase their digitalisation and be part of the chain for the provision of high quality services and products.

Cyprus is also preparing its national plan on critical infrastructure that will include the National QCI Network and will be interconnected with the cross-border development of the EuroQCI network. The implementation of a national QCI network is also a major challenge with potentially great opportunities for industry, government security services, critical infrastructure in Cyprus and academia. A Working Group has been set up, consisting of the DMRID, the Department of Electronic Communications (DEC), the Digital Security Authority (DSA) and the European University of Cyprus.

The [National Cybersecurity Strategy](https://dsa.cy/strategy/csrc-2020), which was published in June 2020 includes a series of actions in the context of the ‘Security For All’ approach, aims at consolidating a secure electronic environment in the Republic of Cyprus, with special provisions and actions for the protection of critical information infrastructures. DSA is the National Cybersecurity Certification Authority and responsible for the full implementation of the EU Cybersecurity Act at national level. The budget for the implementation of the Strategy is currently set around EUR 6.5 million for 2022. The Steering Committee of the Strategy follows a dynamic approach and has the ability to request additional funds each year depending on the identified needs. This means that additional budget could be allocated for 2023 and 2024.

To boost the digital transformation of the Cypriot economy, it is important to raise awareness of the relevance of digitisation among SMEs. This will enable SMEs and entrepreneurs to reap the full range of benefits from adopting digital technologies. This is also important in the light of the Digital Decade 2030 target, where more than 90% of SMEs have to reach at least a basic level of digital intensity. Change management at all levels of enterprises is also required for addressing organisational and cultural challenges. DMRID, as the authority for developing and implementing the national digital policy and strategy, has to define and organise the use of resources, public sector processes, budget allocations and other modes in order for these changes to be successful. In this context, the full implementation of the ‘Cyprus Industrial Strategy Policy’, as well as the reforms and investments included in the RRP are crucial for the success of the digital transformation.

|  |
| --- |
| Highlight: Strategy for attracting businesses including High Technology, Innovation companies |
| In October 15, 2021 the government endorsed the enhancement of the strategy for attracting business to Cyprus focusing on high technology, shipping, innovation, start-ups and research and development, in a bid to turn the island into a business and trade centre in the wider region and Europe.  The strategy includes targeted actions in nine areas, and builds on the best practices employed by other European countries. The strategy is fully in line with the European acquis and aspires to turn Cyprus into a sustainable business and trade centre in the wider region and Europe. There are incentives included in the new strategy: residence and employment, taxation, simplification and digitisation of procedures, as well as promoting Cyprus as an attractive investment destination. |

# 4 Digital public services

|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| |  |  |  |  | | --- | --- | --- | --- | | **4 Digital public services** | **Country** | | **EU** | | **Rank** | **score** | **score** | | **DESI 2022** |  |  |  | | DESI 2021 |  |  |  | | DESI 2020 |  |  |  | | Chart to be added |

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
|  | **Cyprus** | | | **EU** |
|  | **DESI 2020** | **DESI 2021** | **DESI 2022** | **DESI 2022** |
| **4a1 e-Government users** | **58%** | **59%** | **63%** | **64%** |
| % internet users | 2019 | 2020 | 2021 | 2021 |
| **4a2 Pre-filled forms** | **NA** | **NA** | **31** | **64** |
| Score (0 to 100) |  |  | 2021 | 2021 |
| **4a3 Digital public services for citizens** | **NA** | **NA** | **56** | **75** |
| Score (0 to 100) |  |  | 2021 | 2021 |
| **4a4 Digital public services for businesses** | **NA** | **NA** | **86** | **82** |
| Score (0 to 100) |  |  | 2021 | 2021 |
| **4a5 Open data** | **NA** | **NA** | **91%** | **81%** |
| % maximum score |  |  | 2021 | 2021 |

Cyprus ranks xx in Digital public services. It performs above the EU average on open data with 91% versus 81%, while the level of online interaction between public authorities and the general public has been further improved and almost reaches the EU average of 64%, with 63% of Cypriot internet users to actively engage in the use of e-government services. Regarding pre-filled forms, Cyprus underperforms with a score of 31, well below the EU average of 64. Furthermore, in digital public services for citizens, Cyprus remains below the EU average of 75 with a score of 56. On the other hand, Cyprus performs well in digital public services for businesses, scoring above the EU average (86 against 82 of the EU).

The government has introduced the national electronic identification (eID) scheme following the [eIDAS Regulation](https://ec.europa.eu/digital-single-market/en/discover-eidas). The scheme includes a series of legislative acts, which were voted by the Parliament in April 2021. According to this legislation, Trust Service Providers (TSP) will be able to provide eID to citizens above 18 years old[[3]](#footnote-4). It is expected that the TSP will be operational in 2022 and will start providing eID to Cypriots within 2022. With the establishment of a national scheme on eID following the eIDAS regulation, and of an electronic signature (e-signature), the public will be able to access and interact digitally with the government through the [Government Gateway](https://eservices.cyprus.gov.cy/EL/Pages/Home.aspx%20%20%5d) simply by using their eID. This national eID scheme is expected to be notified to the European Commission in 2022.

The government is developing a ‘Digital Services Factory (DSF)’, a new delivery model for the development of end-to-end digital services. The DSF includes a set of standards to be followed for the design and development of e-services for both citizens and enterprises in order to achieve uniformity and consistency across all users, including the government. According to the implementation plan, the majority of public services is expected to be online by 2026.

Government IT systems in Cyprus are scattered in several government locations and data centres, with limited security provisions and very high maintenance and operating costs. In this vein, Cyprus aims to create a unified cloud environment that will provide cloud computing capabilities for the government by hosting governmental systems and services. The cloud environment will be hosted and operated either in a public cloud or a government private cloud (G-Cloud). Initially, the could environment will be utilised by a limited number of departments and Ministries of the government but it will be continuously improved and extended in order to cover most of the existing systems or other upcoming needs. The project is in the initial stage and its procurement phase is under preparation.

Cyprus is developing an ‘e-petition platform’ for the electronic submission of petitions by the public to the central government. The platform will allow the public to add online support to open petitions and will provide information about petitions already received. Cyprus is also developing a government ‘e-consultation portal’ that aims to serve as a single point where all public consultations will be published.

In the same context, the DMRID aims to establish a ‘Digital Market Place (DMP)’ in order to accelerate the delivering of high-quality services to the public and improve the way citizens and businesses interact with the government. The DMP will be supported by this procurement framework and will allow (a) the private sector to provide teams to research, test, design, build, and iterate digital services, and (b) public sector organisations to procure themselves services which are listed in the DMP in the form of a ‘mini-competitions’, thus implementing digital services from service providers. It is expected that the DMP would be operational in Q3 2022.

On e-health, the National eHealth Authority (NeHA) has been established, under law 59 (I)/2019, as an independent and autonomous entity with the objective to implement the ‘e-health Roadmap’ in Cyprus.

The first implementation phase of Cyprus’s e-health roadmap relates to the deployment of cross-border interoperable eHealth services. The services are based on the ‘eHealth digital service infrastructure (eHDSI)’ requirements and EU standards via MyHealth@EU operated by NeHA acting as the National Contact Point for eHealth (NCPeH)[[4]](#footnote-5). Supported by Cyprus’s recovery and resilience plan, the NeHA aims to extend the provided services to enable the exchange of additional data sets, as agreed with eHDSI. The work for this project is in progress since January 2022. From February 2022, NeHA is carrying out a project aiming to define the ‘Extensive set of health data’ for all ‘eHealth Records’. The results of this project are fundamental for NeHA’s strategy and are in line with Cyprus’s eHealth Roadmap.

Supported by EU4Health funds, Cyprus - through NeHA - participates in two project proposals. The first project aims to enable patients to gain access to their health data. The second one aims at bringing benefits through e-health to citizens and patients across EU, with an emphasis on cancer prevention and care.

Improving digital public services is particularly important for Cyprus’s digital transition. This will help the digital transformation of the public sector in line with the EU Digital Decade 2030 target, where all key public services should be made online accessible for citizens and businesses. Therefore, it is very important for Cyprus to implement the policy in line with the national digital strategy together with the Reforms and Investments included in its RRP.

1. 1 This is the case of the following targets: all European households are covered by a Gigabit network, with all populated areas covered by 5G; 100% online accessible provision of key public services for Union citizens and businesses; 100% of Union citizens have access to their medical records (electronic health records - EHR). [↑](#footnote-ref-2)
2. Digital Decade targets: (a) at least 80% of those aged 16-74 have at least basic digital skills; (b) at least 20 million employed ICT specialists are employed, with convergence between women and men [↑](#footnote-ref-3)
3. The TSP is obliged according to the legislation to follow a remote server solution using PKI infrastructure (the private keys are kept in an HSM server in the TSP premises) [↑](#footnote-ref-4)
4. The compliance check team concluded that “the Cyprus NCPeH is legally ready and technically well advanced to be ready for production service operation but it is important to finalise the contractual arrangements...” [↑](#footnote-ref-5)