



**Republic of Cyprus**  
**Ministry of Communications and Works**  
**Department of Electronic Communications**

## **“Digital Strategy for Cyprus”**



**Nicosia**  
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## Executive Summary

It is being recognized that the use of Information and Communication Technologies (ICT) plays a key enabling role to achieve smart, sustainable and inclusive economy and society. The use of ICT in all vital sectors of the economy of Cyprus like education, health, tourism, transport and generally in the exercise of every business activity is of paramount importance to the development of Cyprus into a regional service centre and to the attraction of foreign investments. The use of ICT is a catalyst to the increase of productivity and economical growth. It has direct impact on the increase of GDP, the creation of new high-value jobs, the modernization and productivity increase of the public sector, the increase of transparency and the promotion of democracy and culture.

Therefore, the Department of Electronic Communications (DEC) with the guidance of the Advisory Committee for Information Society has developed a comprehensive plan (for the period 2012-2020) for the development of information society in Cyprus and the uptake of ICT entitled “Digital Strategy for Cyprus”, that was approved by the Council of Ministers of Cyprus on 8 February 2012. Our digital strategy is in line with the objectives and actions proposed in the Digital Agenda for Europe, one of the flagships of the strategy “Europe 2020”, and will contribute substantially to economic growth, productivity increase and job creation. The strategy promotes the use of ICT in all sectors of the economy and society. The stated overall vision of the Digital Strategy for Cyprus is: “information and communication technologies to support the development and the competitiveness of the economy, and citizen participation in the social, cultural and political domains”.

The Digital Strategy for Cyprus will help Cyprus to overcome the crisis and will promote economical growth, increase of the competitiveness of the private sector and modernization of the public sector. The following objectives, measures and actions are included.

### 1. Objective 1: Connect Cyprus

It is necessary to connect the whole Cyprus with high speed networks, so that all citizens, businesses and public bodies have access to information society services and benefit from the use of ICT. This objective also includes measures for promoting competition in electronic communications, in order to create various infrastructures offering high quality and high speed electronic services to all citizens at affordable prices. It also includes measures to ensure the security of infrastructures and information. Cyprus aims to achieve universal broadband access and ultra high speed access until 2020 based on the targets of the Digital Agenda for Europe, namely:

- (i) By 2013, all households and businesses will have access to the Internet with at least 2Mbps.
- (ii) By 2013, 70% of the enterprises will have access to the Internet with at least 20Mbps.
- (iii) By 2020 all households and businesses will have access to the Internet with at least 30 Mbps.
- (iv) By 2020 50% or more of the households and businesses will have access to the Internet with at least 100 Mbps.

Cyprus has adopted a market-based national broadband approach to achieve the above targets. We will encourage market forces to invest in broadband infrastructures by providing the right incentives. Public investments can be used only in areas where there is a market failure and they should be carefully targeted, so that they are not deterrent to private investments.

The first target of all households and businesses to have access to the Internet with at least 2Mbps has already been achieved.

### **Measure 1 - Promotion of a stable regulatory framework**

- Action 1.1 Adopt the new amendments of the electronic communications framework.
- Action 1.2 Improve the existing framework for the rollout of fixed infrastructures. OCECPR has already issued two relevant Orders (Order 2012, Κ.Δ.Π. 10/2012 & Order 2005, Κ.Δ.Π. 338/2006) and plans to implement a GIS project to map the electronic communications networks.
- Action 1.3 Improve the existing framework for the rollout of wireless infrastructure.
- Action 1.4 Analysis of the broadband access market (markets 4 and 5).
- Action 1.5 Promote partnerships or cooperation of various players in electronic communications, so that the total investments are cost effective and thus feasible. The OCECPR is conducting a public consultation on the document entitled “Regulation strategies on the development of new generation broadband infrastructure (NGA) in Cyprus”.

### **Measure 2 - Licensing of wireless networks**

- Action 2.1 Prepare a plan for licensing radio frequencies designated for electronic communications services. This plan will include provisions related to technology neutrality, avoidance of spectrum hoarding, etc, in line with the Radio Spectrum Policy Programme.

### **Measure 3 - Promote competition and decrease broadband prices**

- Action 3.1 Evaluate consumers’ trends in 2011 (demand and pricing of broadband access products). During the broadband market analysis, OCECPR will review the cost of the end-to-end wholesale cost components for the provision of broadband services at the retail level and if necessary will impose appropriate regulatory measures to reduce costs and thus retail prices of broadband services. This action is related to the Action 3.2.
- Action 3.2 Extend the market observatory for the period 2011-12-13 to include a map of the infrastructure, a map of broadband coverage, a “catalog” of the available broadband products and a map of the use of the available broadband products.

### **Measure 4 - Establish Fiber to the Home network (FTTH)**

- Action 4.1 Adopt the regulatory framework for the installation and operation of FTTH network. This action is related to the Action 1.5.

- Action 4.2 Promote the consultations between operators in order to define the type of the FTTH network and the timetable of its implementation.
- Action 4.3 Evaluate the possibility of subsidizing wiring within customer premises.

#### **Measure 5 - Network and information security**

- Action 5.1 Take all the necessary actions and procedures (training, acquisition of software etc.) in order to make the Cyprus Government CERT fully functional.
- Action 5.2 Take all the necessary actions and procedures (training, acquisition of software etc.) in order to make the Cyprus academic CERT fully functional.
- Action 5.3 Expand the scope of the two CERTs in order to cover the business community.
- Action 5.4 Develop a strategy for the critical information infrastructure protection (CIIP).
- Action 5.5 Develop a contingency plan for the critical information infrastructure protection (CIIP).
- Action 5.6 Organize awareness campaign on security issues.
- Action 5.7 Safe Internet programs for children.

## **2. Objective 2: Modernize public administration and provide public electronic services**

The Government through the use of ICT aims to become smart, sustainable and innovative, more effective and efficient and more friendly to citizens and businesses. By using ICT for its internal functioning, the Government aims to become paperless and therefore decrease bureaucracy and cost and increase civil servant productivity. Furthermore, by providing public services electronically the government will offer better services to businesses and citizens and reduce business's cost.

#### **Measure 6 - Network and information security**

- Action 6.1 Design and build the government Next Generation Network (NGN).
- Action 6.2 Further develop the academic and research network.

#### **Measure 7 - Paperless Government and eGovernment Services**

- Action 7.1 Install the Web-enabled version of the Office Automation System (eOAS) in all Government Departments.
- Action 7.2 Revise the Information Systems Strategy (ISS).
- Action 7.3 Develop the Government Secure Gateway.
- Action 7.4 Develop the Central Government Data Warehouse.
- Action 7.5 Set up a Help Desk System.
- Action 7.6 Develop the Human Resource Management System.
- Action 7.7 Expand the Point of Single Contact (PSC).
- Action 7.8 Set in full operation the e-filing system for online registration of companies.
- Action 7.9 Online payments to Government (epayments).
- Action 7.10 Give incentives to citizens to use the available e-government services.

- Action 7.11 Define the basic public services that cannot be offered online and remove any existing obstacles eg amendment of legislations in order to enable the online provision of these services.
- Action 7.12 Develop more public eServices based on the citizens and businesses needs.
- Action 7.13 The public eServices should ensure social inclusion including vulnerable groups.
- Action 7.14 Develop cross-borders, interoperable egovernment services based on the European Interoperability Framework.
- Action 7.15 Provide access to citizens to their personal data.
- Action 7.16 Publish Information of the Public Sector (PSI).
- Action 7.17 Develop tools to promote eDemocracy.
- Action 7.18 Consolidate the several datacenters of the government into 3-4 major datacenters (Data Consolidation).
- Action 7.19 Set up and operate a call center for citizens and businesses to inform them about the services offered by the government.
- Action 7.20 Establish more Citizen Service Centers (CSCs) all over the island.
- Action 7.21 Review and amend the procedures of the public sector to achieve effective egovernment.
- Action 7.22 Establish an Advisory Committee to advise the Minister of Finance on egovernment issues.

#### **Measure 8 - Electronic Local Authorities**

- Action 8.1 Establish a centralized information management system that will be used to serve all municipalities.
- Action 8.2 Set up and operate a call center for citizens to inform them about the services offered by the Municipalities.
- Action 8.3 Install in public places a number of computers with fast internet access taking into account the vulnerable groups.
- Action 8.4 Give incentives to businesses and citizens to use the available online services.
- Action 8.5 Use social networks to increase the participation and involvement of citizens.

#### **Measure 9 - eHealth**

- Action 9.1 Install and operate in all hospitals the Integrated Health Care Information System that covers the key elements of the hospital procedures in order to control both quality of service to patients and hospital cost, in all public hospitals. With the Integrated Health Care Information System the Ministry of Health will achieve the standardization of hospital procedures at all public hospitals (the public hospitals will work the same way).
- Action 9.2 Install and operate the drug management system in all hospitals.
- Action 9.3 Create regional health networks to exchange information between all health care providers.
- Action 9.4 Create an Internet portal to provide private physicians access to patients' electronic health records.

Action 9.5 Design and implement an Ambient Assisted Living (AAL) program. Introduce an AAL program on a pilot basis by choosing a group of elder people that lives in a remote area. Depending on the results of the pilot project the AAL program will be expanded.

Action 9.6 Use Telemedicine

#### **Measure 10 - eID and esignatures**

Action 10.1 Every citizen will be issued an eID which will include personal identity data and passport (biometric) data. The eID will also be capable to store an advanced certificate for the creation of qualified signatures and other data.

Action 10.2 Implementation of the legal framework for electronic signatures.

Action 10.3 DITS to become Government Certification Service Provider (CSP).

#### **Measure 11 - Use of ICT to promote cultural heritage**

Action 11.1 Prepare a comprehensive strategic plan for the promotion of cultural heritage with the use of ICT.

Action 11.2 Digitize the major objects of the Cyprus museum.

Action 11.3 Expand the digitization of the objects of the Cyprus museum and link them with the respective archeological sites.

Action 11.4 Digitize exhibitions that will be organized during the Cyprus EU presidency.

Action 11.5 Develop a 3D digital museum.

#### **Measure 12 –Use of ICT to promote tourism**

Action 12.1 Prepare a strategic plan for the promotion of tourism with the use of ICT.

Action 12.2 Set up and operate a call center (single number) for tourists and tourism partners.

Action 12.3 Promote tourist attractions through social networks.

Action 12.4 Create an online tourism observatory through which tourism partners and the general public will be informed on the latest developments through detailed statistics and focus reports.

#### **Measure 13 –Knowledge park (Smart City)**

Action 13.1 Create a new area with state of the art facilities (eg telecoms infrastructure and smart buildings) to accommodate knowledge-based companies. The plan is for the government to offer the land (accompanied by terms to be agreed) and a strategic investor to implement the park. Incentives will be offered to the strategic investor as well as to the companies that will be accommodated in the park. A call for expression of interest by potential strategic investors will take place and depending on the outcomes we will proceed accordingly.

### 3. Objective 3: Inclusion of all (including vulnerable groups) into digital Cyprus

This objective includes the digital literacy of all businesses and unemployed people and the enrollment of all citizens in lifelong learning programs. Additionally, it covers inclusion issues and the use of broadband and ICT services by all citizens.

#### Measure 14 –Promote digital literacy

- Action 14.1 Implement a co-financed project entitled “eskills for all” based on the 7 sessions of the ECDL.
- Action 14.2 Implement a co-financed project entitled “Digital Citizen” which will offer very basic eskills for the digital illiterate.
- Action 14.3 Develop further programs to promote eskills.
- Action 14.4 Promote and expand the Cyprus Business Portal.
- Action 14.5 Develop eLearning programs for public servants.

#### Measure 15 –National program for broadband penetration

- Action 15.1 Install in public places a number of computers with fast internet access taking into account the vulnerable groups in order to enable citizens to transact electronically.
- Action 15.2 Install free wi-fi access in selected public places.

### 4. Objective 4: Education and Learning

Promote the Digital Education by using ICT as a dynamic tool aiming at the upgrade, the enrichment and the reform of the educational process.

#### Measure 16 –eEducation

- Action 16.1 Network all public schools with the datacenter with high speed physical connections and logical connections.
- Action 16.2 Complete the structure cabling in all schools.
- Action 16.3 Increase the number of personal computers (PC) in each school in order to achieve one PC per student.
- Action 16.4 Install computers and multimedia labs in every school.
- Action 16.5 Install interactive whiteboards in every school.
- Action 16.6 Expand the implementation of the Learning Management System (DIAS) in all secondary and technical schools. This platform was launched on a pilot basis in 7 schools in April 2009.
- Action 16.7 Develop digital Educational Content for the majority of primary and secondary schools.
- Action 16.8 Create distance learning applications.
- Action 16.9 Computerize the educational system. The new system will be interfaced with the Learning Management System (DIAS).
- Action 16.10 Further train teachers to further integrate ICT in the learning process.
- Action 16.11 Develop interactive learning centers.

- Action 16.12 Evaluate students' eskills and take measures to improve them.
- Action 16.13 Upgrade the infrastructure of the public tertiary education (E-UNIVERSITY). Three projects have been approved regarding the three State Universities: the University of Cyprus, the Cyprus University of Technology and the Open University of Cyprus. The projects aim to upgrade and develop the technological infrastructure that will provide the tools for integrated, automated and quality services for students, academic and administrative personnel.

## 5. Objective 5: Digital Entrepreneurship

This objective includes the promotion of digital entrepreneurship. It aims to help businesses use ICT extensively to support their functioning in order to increase their productivity and become more competitive in domestic and international markets. Moreover, research and innovation in the ICT sector will also be promoted in order to increase public and private spending on ICT research and development.

### Measure 17 –Promotion of Digital Entrepreneurship

- Action 17.1 Promote further the electronic commerce program “Epihirite Diadiktiaka”. The directive WCAG 2.0 will be taken into account in the development of the websites so that they are also accessible by vulnerable groups.
- Action 17.2 Introduce new programs for financial support of companies to use ICT in their internal procedures and in the provision of customer services (eBusiness).
- Action 17.3 Introduce a new subsidy program for SMEs to develop innovative ICT products or services.
- Action 17.4 Introduce a program for government bodies to enter into pre-commercial procurement agreements with innovation and research organizations.
- Action 17.5 Give incentives to businesses to use public electronic services.
- Action 17.6 Give incentives to businesses to implement eInvoicing and eReceipt.
- Action 17.7 Give incentives to businesses to use environmentally friendly technology and equipment and implement green policies and practices.
- Action 17.8 Develop policies to assist the participation of Cypriot ICT businesses in governmental projects.
- Action 17.9 Establish an annual ICT forum in order for ICT companies and DITS to get together and discuss issues for e-government.
- Action 17.10 Establish an Advisory Committee of experts to define the framework for doing business in cyberspace.
- Action 17.11 Establish a Working Group to develop a strategic plan to promote the export of ICT services.
- Action 17.12 Establish a mechanism to attract EU funds and develop subsidy programs (eg in the context of CEF) to promote digital entrepreneurship.

## 6. Objective 6: ICT for the environment

Encourage the economic institutions of Cyprus, including the government, to use technologies and equipment or implement policies and practices that are environmentally friendly both in production cycles and operations<sup>1</sup>. Furthermore, expand the use of ICT to confront the most pressing problems of the economy like water supply, public transport etc.

### Measure 18 –National Strategy for the Use of Intelligent Transport Systems (ITS)

- Action 18.1 Promote the cooperation between Governmental Departments that are involved in the management of the road traffic and associated incidents by signing Service Level Agreements (SLA).
- Action 18.2 Establish an open electronic platform to be used by all stakeholders (private and public sector) to exchange information and promote their cooperation for the development of ITS.
- Action 18.3 Prepare a national ITS strategy.

### Measure 19 –Water management system

- Action 19.1 Further introduction of the telemetry systems in water management.
- Action 19.2 Implement a pilot project to replace 3000 domestic and commercial standard meters with smart electricity and water meters.

### Measure 20 –Teleworking framework

- Action 20.1 Adoption of teleworking framework.

## Horizontal Measures

### Measure 21 –Communication Plan

- Action 21.1 Introduce a comprehensive communication plan to promote the Digital Strategy, raise awareness about the benefits of using ICT and promote the existing e-government services and digital literacy.

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<sup>1</sup> The following measures, that have been presented in the preceding sections, contribute to the implementation of this objective for the promotion of green ICT: Measures 6, 7, 8, 9, 10, 12, 16, 17 and especially Action 17.7 - incentives to businesses to use green ICT.