AGENDA
DIGITAL
2015
NOVAS
TECNOLOGIAS,
MELHOR
ECONOMIA.

PLANO
TECNOLÓGICO
PORTUGAL
A INOVAR_

INDEX

Summary

Ever since 2005, under the auspices of the Technological Plan, Portugal has been embarked on a continuous investment effort in terms of knowledge, technology and innovation, allowing to reach European averages regarding innovation performance and to have a positive technological balance.

Up to 2012, Portuguese Society is going to invest close to 2,5 billion Euros on an added-value services, the creation of an infra-structure with national coverage in order to offer a larger bandwidth on internet connections available on the network. Close to 1100 million will be invested by fibre infrastructure operators active in the market, 600 million will be invested by various market agents in the development of services and content and 750 million in the development and modernization of networks. The rural networks programme, the only one with a direct share of public subsidies will harness 200 million Euros, including 106 million of public subsidies to guarantee universal and equal access.

Independent studies estimate that, with this investment coming into effect, it will generate a growth of 3 billion Euros, which corresponds to 1.8% of Gross Domestic Product (GDP) considering its direct impact and the ripple effect on other sectors, creating 15,000 to 20,000 qualified jobs and reducing 1.4 million tons of CO_2 emissions (1).

This investment will place Portugal in the cluster of best-equipped territories in these infra-structures, on a par with countries like Holland, Denmark, Sweden and Germany, and constitute an opportunity to have more and better services developed in Portugal available to businesses and households, and at the same time, spread solutions internationally and drive up national exports in the sector of solutions based on Information Technology and Next Generation Communications.

Digital Agenda 2015 is an action program under the Technological Plan aiming the improvement of services offered to citizens and to economic players able to use the potential of Next Generation Networks and in support of businesses and business consortiums to enter international markets and export the goods and services that are developed.

This push is focused on five priority areas of intervention – Next Generation Networks, Better Governance, Excellence in Education, Proximity Healthcare and Smart Mobility and includes 26 measures whose implementation will start from now. With the accomplishment of the Digital Agenda, among other measures and impacts detailed in the development of the agenda, the country:

1. Will have a universally accessible next generation broadband network available to it.

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1 BCG (Boston Consulting Group) study "The Economic and Social Impact of Next Generation High Speed Broadband" :http://tinyurl.com/kmpmxo

2. Will implement a simplified system of commercial licensing and services - Zero Licensing– through an integrated electronic registry system.

3. Will strengthen support mechanisms for learning mathematics via the creation of a Virtual Mathematics Tutor.

4. Will provide all citizens with an Electronic Health Record.

5. Will provide access to a universal transport ticket – the Passe Total– which will be able to be used in an integrated way, in not only all multi-modal collective transport systems but also in new models of sustainable mobility, like those proposed by the Electronic Mobility Programme.

PRIORITY LINES OF ACTION

The world is changing and so is the global economy. The response to the global crisis demands appropriate new approaches to new challenges, bringing about a new impulse to modernization plans being carried out.

The focus of the Technological Plan on the Digital Agenda 2015 envisions the creation of value and opportunities for entering international markets through competencies acquired and newly developed networks, taking into account the new challenges of the international economy and the strong investment in progress in New Generation Networks to make next generation broadband coverage available nationally.

Taking into account the challenges that face Portugal in the coming years, along with European priorities in terms of competition policy broached in the Europe2020 strategy and in the choice of the digital agenda and innovation as the prime objectives of that Strategy, Digital Agenda 2015 has identified five priority strands of action.

1. **Next Generation Networks**– The installation of a telecommunications network on a national scale, with raised broadband transmission and bandwidth capacities available to the end user, that makes possible the creation of high added value services for citizens and businesses alike, with an impact on their efficiency; these will also contribute to the reduction of carbon emissions and promote national equality and unity, be it social or economical. Finally, it should create conditions for the development of companies providing services and advanced products in the ITEC sector (Information Technology, Electronics and Communications), to help them reach international markets.

2. **Better Governance** – Guaranteeing that citizens and businesses alike can have access to better public services, hand-in-hand with the high level of online availability already achieved. The identification and promotion of solutions with an impact on Portuguese society and with high potential for export.

3. **Excellence in Education** – The creation of platforms that would motivate the different players in the educational community to implement practices that make possible the use of Information and Communication Technology (ICT) tools in teaching and learning contexts and to bring a new dynamism into the content market in the context of the official language, Portuguese.

4. **Proximity Healthcare** – To develop and implement intelligent platforms that would optimize the provision of proximity healthcare, generating solutions that could be exported to other markets. Guaranteeing that health information is available for the public and for the health professional that provide services to them, in a safe and suitable way, at the time and place they are needed.

5. **Smart Mobility** – To develop technological mobility solutions and support to Smart Mobility and energy optimization, with a strong home-grown technological input, based on national competencies in information technology, in smart grids and on knowledge of technologies associated with electronic mobility, "export clusters" which will work in close coordination with competitiveness hubs and the industrial clusters already in existence and already adapting to the new paradigms.

FRAMEWORK

Launched in 2005, the Technological Plan is a policy idea, a commitment and an agenda for action, which has helped to produce proactive measures to promote knowledge, technology and innovation, improving the competitive capability of the Portuguese economy in the midst of strong pressure for restructuring, all as a result of the political will of the government and Portugal joining the Monetary and Economic Union in 2000.

The Technological Plan agenda has started to mobilize Portuguese society in a very profound way, capturing imaginations and acquiring a very strong level of recognition and involvement in its achievement.

Portugal is today a global leader in domains as critical as Next Generation Networks (NGN), the use of computers in education, the quality of online public services, network and computing support systems in scientific activity or Renewable Energies.

The 2009 EIS (European Innovation Scoreboard) revealed that Portugal occupied seventh place in the EU in terms of progress in relation to Innovation in the period in which the Technological Plan was implemented, and was in first place in terms of the increase of private investment in research and development and second place in the progress charts for the qualification levels of its human resources.

In this European instrument for providing a comparative assessment of innovation performance, Portugal has gone up nine places since 2005, leaving the category of countries that are in "catching-up" and entering the category of "moderate innovators" countries, where it also had a relative performance that classifies it as a growth leader.

Portugal was the European country in which expenditure on Research and Development (R&D) grew the most in relation to its GDP, viewed on a global scale, and for the first time, more than 1.5% of its GDP (1.51%), equalling or overtaking the levels already attained by Spain, Ireland or Italy.

Private investment also overtook public investment for the first time, accompanied by a boost in the number of researchers in the active population, which is already above the European average, having gone over 3.8% in 2005 to 7.2% in 2008.

The modernization of Public Administration, carried out under the SIMPLEX programme, was considered a model example by the OECD. In the domain of technological modernization, Portugal has been in the top position since 2008 of the European Commission's rankings on the availability and sophistication of online public services.

The ambition to establish Portugal as an online country in an online world requires a clear reinforcement of the potential for integration and connection. The progress made by Portugal in this domain is considered a global example of good practice. The teaching of English has reached almost all pupils in the 'first cycle' of education (primary school) and results in terms of academic success have improved substantially. The average level of qualification of the Portuguese population has risen in the last few years, due to the active population taking strongly to the New Opportunities programme.

One million and three-hundred thousand laptops were distributed to students, education professionals and workers undergoing training under the scope of the e.Escolas [e-Schools] and e.Escolinhas [Magellean] programmes, and an ambitious Technology Plan for Education is turning Portuguese schools into hives of learning and reference points for modernity and innovation.

Portugal today has one of the highest rates of mobile broadband penetration in the world and in 2008 and 2009 it was the country with the greatest number of sales of laptop computers per capita.

All the results of this work are fuelling a drive forwards in which the competitive profile of the Portuguese economy is being turned around. The balance of investment in technology in 2007, which was positive for the first time since records began, maintained this trajectory in 2008 and 2009, despite the difficult international situation.

Other examples of the turnaround have been the capability of Portuguese companies in disseminating, to the global market, new concepts in domains such as technologies for education, border control, intelligent networks, sustainable energy, mobility, large-scale commercial premises management, logistics or the Internet of Things.

The implementation of an advanced network of technological infrastructures, encompassing all sectors of activity, is fundamental for raising levels of competitiveness of the economy and boosting the equitable modernization of the country. It also has an influence in the area of the reinforcement of collective efficiency strategies, which have already paved the way for the creation in Portugal of nine Poles for technological competitiveness with a global level of ambition and 14 sector clusters.

In this sense, not only do ongoing investments in New Generation Networks improve competitiveness in the economy in general, but they bring up new opportunities for the development of business activities with a higher added value; they give a new impulse to already recognized Poles and clusters and in particular to the Information Technology, Electronics and Communication (ITEC) Pole, and they are favourable to the development of new partnerships whose aim is to become international players.

The benefits to be taken from this constructive push will have all-encompassing implications for the whole economy and society, in particular in the lives of businesses, public entities and especially the lives of citizens, guaranteeing them access to better

services in critical areas such as access to public services, health, education and new resources for mobility and its management.

Next Generation Networks constitute an exceptional platform for the development of new content and services which, serving the modernization of Portuguese society, have equally strong potential for the world stage and for export, by also improving access to all sectors of the economy to international markets.

A policy of improving the communications infrastructure and promoting the use of technology must also be accompanied by a state-of-the-art and innovative knowledge creation and development strategy with the capability to compete in global markets and to guarantee the ability to export. Hence, there are two all-encompassing dynamics covering all the intended measures and that assume particular strategic importance:

- Strengthening research and the capacity for innovation in the area of ICT, with an emphasis on areas in which disruptive leaps associated with R&D can be anticipated such as the Internet of the Future, The Internet of Things, The Semantic Internet, Cloud Computing, Security and Critical Infrastructure Protection, Augmented Reality and Intelligent and Interactive Environments, in collaboration between the scientific system and businesses, in a strongly competitive internationally-focused environment.

- Development of advanced qualifications and talent for the digital economy, especially in higher education and with the specialization required for global competitiveness.

As well as the consideration of these two dynamics in the measures anticipated below, these two aspects will be the object of specific strategies to be decided at a later stage, linked to the Digital Agenda 2015, especially as they concern key components of the European Digital Agenda within the Europe2020 strategy.

Two other all-encompassing aspects of any digital strategy, and which will be considered as part of the measures already set out in the Digital Agenda of the European Union 2020 strategy in order to achieve the Information Society that is its goal, are:

- The promotion of the large-scale digitization of content, because in an economy based on knowledge the underlying information that is openly available and on which added value can be created, performs an infrastructural role which cannot be provided by physical communication infrastructures.

- Digital inclusion and the use of ICT for social inclusion, in a way that guarantees a wide penetration of technologies and the digital economy amongst the population and reinforces digital citizenship, including those based in remote areas, those with low educational levels, advanced ages, or special needs.

Hence, the Digital Agenda 2015 has as its basis the move towards modernization and change generated by the Technological Plan as a political idea, a commitment to action and an agenda to motivate Portuguese society. This also encompasses the strong push made by Portugal in its investment in New Generation Networks, in widespread access to broadband and the development of competencies for its use by young people, families, public administration and businesses, creating conditions to improve the availability and

sophistication of technology-based services and solutions and for their export and entry on the international market.

MEASURES FOR EACH LINE OF ACTION

1 – NEW GENERATION NETWORKS

VISION

To promote the development of an integrated group of New Generation Telecommunications Networks (NGN) on a national scale, for the provision of fixed line and mobile services.

KEY GOAL

To reach a level of national coverage of fixed Next Generation Networks by the end of 2012 and mobile NGNs by the end of 2015, putting Portugal in the top of development in this sector, guaranteeing across-the-board positive impact on the whole economy.

FRAMEWORK

The project to promote investment in New Generation Networks (NGN) has as its objective the availability of a group of highly advanced, state-of-the-art telecommunications networks, assuring nationwide coverage. For this purpose, the construction of fibre-optic Networks will be promoted, with national coverage and a wide spread of distribution points, as close as possible to the end user and with appropriate levels of symmetry and interactivity, to guarantee a greater two-way transmission of information. These networks will be integrated with others, constructed according to New Generation Wireless technology (e.g. LTE), allowing for mobility, and extending the levels of access coverage.

The NGNs of Information Technology and Electronic Communications – ITEC – have an all-encompassing role in the introduction of communications and intelligence in all economic and social processes and has an impact in all of the other high-priority lines of action of the Digital Agenda: Better Governance, Excellence in Education, Proximity Healthcare, Smart Mobility.

Investment in NGN-ITEC will constitute, as such, one of the great drivers of differentiation of the Digital Agenda 2015, developing an area of excellence in economic specialization, with the ambition of consolidating the industry and services that make it a by-word for quality and competitiveness in the European economic space and in the global market.

The development of the Digital Agenda 2015 will lead to the development of an industrial cluster whose aim is the international spread of solutions developed in order to modernize the Portuguese society and economy, increasing the proportion of GDP which is due to exports by the technological sector and leading to a growth in the exporting capacity of other sectors using tools made available by the push to improve technological platforms.

MEASURES

1.1 – New Generation Broadband for All

DESCRIPTION

Promoting the creation of a nationwide infrastructure that guarantees the provision of increased bandwidth (at a speed greater than or equal to 50 Mbit/s) in the connection to the end user, implemented via the integration of fibre optic networks linked to other networks, especially state-of-the-art, wireless-based, mobility support networks.

OBJECTIVES

a. To promote the construction of nationwide fibre optic networks that would guarantee, in fixed networks, communication services with large bandwidth to the end user and that would guarantee an efficient support network for mobile networks and other NGNs, especially within the new requirements demanded by 4th generation mobile networks.

b. To promote the evolution of mobile networks in a way that would guarantee the provision of larger bandwidth, for the satisfaction of the requirements of new applications of advanced mobile equipment like smartphones and mobile computers and other developments on the horizon.

c. To guarantee across the entire territory and especially in rural municipalities, for which guarantees have already been given for the construction of infrastructure with state financial assistance, the existence of premises for the public use of advanced services based on NGNs and with specialized support, especially reconverting infrastructures already embedded within support programmes for the information society. These premises will be centres that place new technologies in reach of society and the economy of the region and will be able to house smart work places, which will work towards accelerating the integration of rural economies with the most advanced economies of metropolitan areas.

d. To promote priority access to New Generation Networks for the hospital network, schools, courts, local authorities, cultural and tourist bodies, a network of public one-stop shops, in a framework to be defined according to what is set out in the main priorities of the Digital Agenda's "Better Governance". To also guarantee priority access to the future NGN Call Centres and Smart Work Places, especially in order to help the new services that fall within the objectives established for the areas of health, governance and education.

TIMESCALES

The fixed Network with national coverage will be concluded by the end of 2012 and the mobile network by the end of 2015, guaranteeing, aside from commercial priorities, priority coverage especially those defined within the objectives of points (c) and (d).

IMPACT

The new telecommunications and digital services paradigm that will be implemented, and the benefit that the public and the economy will take from this, will place Portugal on the front line of Europe in this sector, with the ripple effect that should then stem from it in terms of the development of society and the economy and its international positioning.

- Percentage of municipalities with fixed NGN network coverage: 100% in 2012.
- National LTE Coverage: 100% in 2015.
- Percentage of the population in rural municipalities with a Public Telecom Services carried over NGN Broadband and Smart Work Places: 80% in 2013; 100 % in 2015.
- Percentage of Government Services with access to NGN broadband for each one of the areas specified in the Digital Agenda: 80% in 2013; 100% in 2015.

1.2 – NGN-Based Services for the Development of the Economy and Society

DESCRIPTION

The development of services of a personal, business and Government-related nature, for the support of the new lifestyle and the demands of the way businesses function in the framework of the digital economy.

OBJECTIVES

a. To promote the development of integrated technologies, services and applications for the residential market, primarily television-based, that will guarantee access to content and information and facilitate the construction of an "Smart Home" platform, especially incorporating energy optimization solutions. To prioritize the development of applications to address the various focal points of the Digital Agenda, especially, in the component dealing with inter-relationships with the public, primarily to satisfy the segments of the population who are info-excluded, with difficulties in using computers.

b. To promote over the top TV services using residential gateways that open the way for interactive television entertainment, especially in the development of social relationships.

c. To promote the evolution of NGN Internet based services for public, personal and business use, guaranteed to get the very best out of the NGNs and based on servers that ensure the services are tailored to the various types of users and terminals (TV Computer, tablet and smartphone) in order for them to be able to access them. This evolution will be a priority, especially in its ability to serve as a demonstration, for the applications included in the Digital Agenda plan of action.

d. To promote the development of SMEs via the creation and promotion of a group of integrated application packages for the SME market, stimulating a reduction in bureaucracy, a rise in the organizational and communicational efficiency of SMEs in their internal workings, in their relationships with each other, with the market and with the State, converging towards the normalization of tools, methods and models. These tools should guarantee the dematerialization of information and the exchange of documents, guarantee the electronic business relationship between the supplier and the market, gain access to State websites for social and fiscal obligations and promote personal relationships via video-communication, minimizing travel and face-to-face meetings. These applications, especially some of the simplified versions, will be able to be subscribed to by businesses in a way similar to that of the "Business Kit", in line with the main priority of "Better Governance".

e. To promote the development of a website and its associated communications applications, that would act as a mouthpiece for rural regions with NGN integrating their talents with the culture of metropolitan populations, as well as

being able to function as a market for trading the goods and services of those regions, thereby getting the best out of NGN internet. Units that supply advanced services as referenced in measure 1.1 will function as Smart Work Places responsible for the insertion of Rural Economies in the new Digital Economy that is going to be constructed in the country.

TIMESCALES

The services associated with NGN will have a very strong development in 2011 and their dissemination will be stepped up from 2012, especially via the provision of public services that will in turn lead to the provision of private business services at a broader national level, achieving an impact that will shape the country's social and economic base from 2013. By 2015 the services will have become commonplace in society and the economy.

IMPACT

Portugal will have, from 2013, a society and an economy that will be users of NGN services. Government-Citizen related services will be the great advocates of the new capacities. By 2015, these dynamics will allow Portugal to become a socially and economically more prosperous country, more efficient and more capable of taking advantage of its resources, as well as having a decisive impact on the consolidation of an innovative and efficient home-grown industry and, therefore, with strong opportunities for international expansion.

INDICATORS AND GOALS

- Widespread provision of residential services: 2013.
- Widespread availability of NGN and multi-terminal internet services: 2013.
- Operators supplying residential and business customers with NGN applications: 100% in 2013.
- Percentage of homes with infrastructure for NGN services installed: 30% in 2013 and 60% in 2015.
- Percentage of homes with intelligent NGN home services: 5% in 2013 and 20% in 2015.
- Existence of SME business service packages that take advantage of NGN: 2012.
- Percentage of SME business customers with NGN applications: 20% in 2013 and 60% in 2015.
- Website to support economic development in rural areas: 2013.

1.3 – Business Support Platforms

DESCRIPTION

Development of technological platforms based on NGN to support business ecosystems, facilitating the production of services and promoting efficiency among businesses. Promotion of these platforms together with the various technological Poles, business clusters and businesses within the various economic sectors of the country that will use ITEC as tools for productivity and efficiency.

OBJECTIVES

a. To provide a stimulus for the emergence of companies that will enable the creation, publicizing and marketing of modular platforms and applications – service modules – preferably based on the Internet, and facilitate, accelerate and make more economical the development of services, information, intercommunication amongst individuals and interchange of documents, adaptable to the various business and professional sectors, especially relating to the work of SMEs.

b. To promote dialogue, sharing and exchange of knowledge between entities who have the capacity to offer services useful to the public and businesses, as well as operators developing television, internet and mobile phone platforms, to increase easy access for the public and businesses to information and intercommunication facilities.

c. To promote the development of a WEB services digital bus, on a national scale, complementary to and coordinated with the public service bus that is to be developed under the "Better Governance" line of action, where the digital resources of the public administration and other entities that are associated with the project will be made available e and which will permit the construction of multi-business, multi-technology applications that are useful to the public.

d. To promote NGN capabilities and services in the entire national industrial system, especially the sectors supported in clusters or technological hubs, to guarantee a faster diffusion of NGN technologies through the economy. To create a website with tools for providing and disseminating information, which will showcase new technologies and their usage across the various sectors. To promote the appearance of tools and e-learning that can facilitate the spread of ITEC technologies, and are capable of being adapted to the various economic sectors. To develop, through the website and its associated tools, the concept of the B2B (business to business) relationship, in the form of a directory of businesses and products, as well as the sale of products and provision of customer assistance.

TIMESCALES

2011-2012.

IMPACT

The sector will have a selection of work tools that will lead to a highly efficient networked level of performance, guaranteeing the rapid appearance onto the market of technologically evolved solutions which will particularly minimize development costs and can be made rapidly available to all economic sectors.

INDICATORS AND GOALS

e. The creation of a wide range of companies set up to sell and hire business efficiency modules and platforms: 2012.

f. The creation of a model for encouraging collaboration between the service and application development industry and the operators: 2011.

g. The creation of a WEB services Digital Bus: experimental in 2011 and fully operational in 2012.

h. A percentage of companies using the Bus who are either directly linked to the hubs or linked indirectly through associations: 100% in 2012.

i. The availability of the NGN tools website for B2B services spanning the whole economy: 1st pilot phase in 2011 and fully operational in 2012.

1.4 – Development of Networked ITEC and NGN Industrial Competencies for the World Market

DESCRIPTION

Promoting the development of new innovative and efficient industrial competencies in the sector of NGN-ITEC businesses, based on Competitiveness Poles and clusters that are active in the sector, as well as collective efficiency actions that will add value to and increase the capacity of these competencies on the world market. Actions for the worldwide marketing of technology-based products, services or business models will be supported, covering the prospecting of new opportunities, entry into new markets and the consolidation of export lines.

OBJECTIVES

a. To stimulate the appearance of one or several industrial clusters of ITEC products and services, supported by a national knowledge base, with good links to the university system and innovation and entrepreneurial networks, which will develop the competencies to bring about the establishment of NGN-based platforms and services, to support the implementation of the strategy espoused by Digital Agenda 2015, within its interventional remit. To stimulate the development of support tools for "NGN", "Governance", "Education", "Healthcare" and "Smart Mobility", capable of justifying the appearance of business clusters with various formats, following the very experience of the "A.C.E. Example" (Enterprise Group) devised for the area of education.
b. To promote expansion on to the world market, through the support of leaders in technology and A.C.E.s, through Competitiveness Poles and clusters or other groups of businesses that may eventually be formed, especially in cases in which the need to better incorporate complementary competencies becomes apparent.
c. To develop policies that stimulate cooperation between the big sales agents and business groups, especially in the area of advanced solutions research, which could in advance bring the advantages of NGN-ITEC to society and the economy
d. The use of tools and public incentives with a greater level of coordination, using research incentives in an integrated way for development, investment and worldwide marketing and supporting entry into new markets through economic diplomacy.

TIMESCALES

Portugal will have, in 2012, the basics of an organized and cooperative business ecosystem, with all the competencies needed to offer and disseminate NGN end products and services on a wide scale with an impact on the global market. In 2015, this sector will make a strong contribution to international recognition of the innovative character of the Portuguese economy, as a benchmark for best practice in boosting a forward-looking sector, in line with what is happening today in the renewable energy sector.

IMPACT

The economic impact of this evolution will mean that, by 2015, the contribution of this sector (NGN and ITEC) to national productivity will have evolved to a level at which we can achieve close to 10% of GDP.

INDICATORS AND GOALS

- The establishment of an integrated model of State support to companies for capacity-building in world marketing expertise: 2010.
- Percentage of GDP generated by businesses in this Sector: 10% in 2015;
- The existence of at least one top-ranked international company or an A.C.E. enterprise group in each NGN sub-sector of Health, Education, Governance, Mobility: 2013.
- Number of top-ranked companies or A.C.E. companies created in this sector with an international presence: 12 in 2015.

2. BETTER GOVERNANCE

VISION

To guarantee access for citizens and businesses to better public services, complemented by a higher level of online availability already achieved. To support the development of solutions with an impact on Portuguese society an on the export potential.

KEY GOAL

To maintain Portugal's benchmark position due to the availability and sophistication of its online public services, raising the use of these services amongst families by 50% and doubling exports due to the international marketing of the solutions developed.

FRAMEWORK

Since 2005 the Simplex Programme has actively contributed to improve the quality of public services, focussing on its users (citizens and businesses) and allowing the simplification, dematerialization and elimination of ineffective actions and procedures, channelling the savings generated into wealth, investment and the creation of jobs.

By uniting the policies of electronic administration and simplification in the same programme, the Simplex Programme has competed strongly to achieve the objectives of the Technological Plan.

It is in this area that electronic administration and simplification policies once again look to contribute towards the objectives of the Technological Plan, through multiple initiatives, the most relevant ones having been included in Digital Agenda 2015.

The first of these objectives looks to bring ever more comfort and quality of life to citizens, making public services available in line with the needs of each individual, the salient parts of this Digital Agenda being initiatives such as the provision of the most relevant public services through various integrated channels of assistance (multi-channel), the piloting of a single contact number – The Citizen Phone – for the main public services and the widening of the provision of public services through bank ATMs and through new channels such as television and the mobile phone.

This first objective does not end with these initiatives: there are other initiatives to be highlighted that are already in the pipeline such as: the Mobile One-Stop Shop, Citizen and Business Websites version 2.0, providing access to all of the electronic public services through these websites; the widespread use of single sign-on mechanisms in the Public Administration via the Citizen Card; the creation of a 'Cultural Pass', which brings the Citizen Card into play with cultural agents; and the study of the development of the Citizen Card, for example, so that it can function using radio waves (contactless) and to encourage its use even more and in better ways (example: use of the Citizen Card on public transport without inserting it into a smartcard reader).

Linked to this objective is the importance placed on simultaneously promoting digital inclusion and literacy, so as to stimulate the use of electronic public services, including

initiatives like "I know all about 'my own' electronic services". This initiative aims, on one level, to make a kit available (on a CD or floppy disc) to all members of the public and business people who go to their Citizen's Advice Bureau or Local Business Centre. This will contain information about all the readily available electronic public services and the ways they can be accessed, together with places to obtain help or a demonstration. In addition, this initiative includes measures towards increasing awareness and training in the use of electronic services.

The second of these objectives is intended to increase the competitiveness of businesses, with the following initiatives included in the Digital Agenda: "My Business on the Internet", which is intended to give companies access to a group of systems necessary for them to begin to function on the Internet, such as a web page, email services, e-business services (management of an online shopping trolley, electronic payments etc.); and "Zero Licensing", with the implementation of a simplified electronic registration system, at a single virtual service desk, for a number of economic activities.

The third objective intends to increase the transparency of Public Administration, via the Open Administration initiatives included in the Digital Agenda: the provision of the site "dados.gov.pt", which intends to publish and gather together information produced by the Public Administration in formats that can be read and reused by any member of the public, facilitating access to public information, cooperation and especially the creation of electronic public services for civil society; the creation of an electronic tool that permits the installation and free availability, in all municipalities that want it, of the tool: "Participative Budgeting".

Finally, and on a par with the objectives already referred to, the intention is also to promote and increase efficiency in Public Administration. Some of the initiatives included in this area are:

a) "Government Cloud", which intends to study the virtualization of the excess capacity existent in Public Administration data centres and the creation of a community data centre (Government Cloud), creating a common agenda for the use of the Government Cloud and thereby promoting the shared use of information systems and infrastructures (example: institutional websites, e-mail, document management systems, collaborative tools, etc.) and enabling the reduction of costs;

b) Rationalization of voice, data and video communications from the Public Administration, defining and implementing policies and strategies common to all Public Administration bodies in relation to communications, especially with respect to infrastructures and equipment, allowing for a more effective tracking system, an improvement in the quality of infrastructures and the flow of communications as well as more efficient management;

c) Reorganizing the information technology function in Public Administration, with a view to its rationalization in accordance with the capacities offered by innovations in the technology and communications infrastructures of Public Administration (Government Cloud, shared application services, broadband in communications etc.).

MEASURES

More comfort and quality of life for Citizens - Multi-Channel Public Services, tailored to our needs

DESCRIPTION

To make the most relevant public services available on various service channels (multi-channel), in an integrated way.

OBJECTIVES

a) To implement a multichannel strategy for the most relevant public services (example: business creation, activity initiation, job search, arranging medical appointments, moving home, etc.), allowing that service to be made available through various channels that share a single customer service back office (e.g.: firstly, the member of the public declares a change of address and contact details at the Citizen's Bureau service desk; secondly, the member of the public enquires about the status of his record on the telephone; thirdly, the member of the public confirms the new address and contact details on the Internet);

b) To widen the public services on offer by telephone and the bank ATM network and to develop services for new channels such as television and mobile phone, taking advantage of the potential offered by Next Generation Networks;

c) To promote a pilot experiment using a single contact number – the Citizen Phone – for the main public services (with the exception of the telephone numbers of the emergency services, like 112), which would serve as an entrance point to the different contact centres that the Public Administration today has at its disposal (Social Security, Health, Records, Finance, Border and Immigration Service, etc.).

TIMESCALE

2013.

IMPACT

Improvement of the quality of public services provided, with members of the public being able to opt for the channel that is the most convenient for them.

INDICATORS AND GOALS

To make available a pilot of the "Citizen Phone", making the most used public services accessible through that channel, without citizens needing to know which Public Administration organization they are using or which is the "right" one to deal with their issue.

2.1. GREATER BUSINESS COMPETITIVENESS

2.2.1. MY BUSINESS ON THE INTERNET

Description

Any developer of a good business idea currently needs to have sufficient funding to support the basic IT systems that are necessary for the visibility and the proper

management of an enterprise in the virtual world (e.g. a web page, email, etc.). There are difficulties for SMEs, especially for micro-enterprises, who are making a commitment to e-commerce, particularly given the need to construct a website and face the virtual market with the engines that are needed for credible e-commerce (e.g. a payment engine).

The objective of this measure is to reduce the amount of investment that companies require to start their business over the internet, thereby giving credibility to and encouraging electronic commerce in Portugal, encouraging exports, promoting entrepreneurship and building on the Government's infrastructure capability.

Objectives

a) To facilitate business access to a number of systems required for setting up on the Internet, e.g. a web page, email services, management of an online shopping cart, etc.
b) To allow domestic companies to host their site on the existing public internet server (*Government Cloud*) and to take advantage of current unused capacity.
c) To make a payment engine available, as a secure and reliable channel for the payment of goods through e-commerce.

Timescale
End of 2012.

Impact
To offer incentives for setting up e-businesses and make it easier for SMEs to gain access to the information society.

Indicators and Goals
To make features available that help entrepreneurs gain access to web page configuration services for their company, its contents and payment engine, through the Business Website, by the end of 2012, once they have chosen their Internet provider.

2.2.2 ZERO LICENSING

Description
Simplification of the system for setting up and making modifications to food and drink establishments, goods traders', service providers' or warehouse premises, together with all permits or related requirements, for terraces, awnings, freezers, flowerpots, advertising, etc., through an integrated e-record and a virtual one-stop-shop for all the information necessary to ensure compliance with current legal requirements.

This e-record satisfies the requirements of the "Services" Directive and adds new features to the idea of a one-stop-shop it proposes.

Objectives

d) To create a simplified system of e-registration, a virtual one-stop shop for setting up and making modifications to food and drink establishments, goods traders', service providers' or warehouse premises, together with all permits or requirements related to the exercise of such commercial activities.

e) To increase business community accountability, and to strengthen the system of inspections and possible penalties.

Timescale
June 2011.

Impact
Reduced administrative costs in starting up a business, standardization of procedures.

Indicators and Goals
Offering the electronic One-stop-shop to local government authorities, promoting its use through a network of business advice centres.

2.3 GREATER TRANSPARENCY IN THE PUBLIC ADMINISTRATION

2.3.1 OPEN ADMINISTRATION

Description
To develop a programme of Open Administration for publishing and organising local government information (e.g. the location of public services, enterprises, transport, etc.) in reusable formats, as happens today with weather information, which may be global, but appears in many different formats every day.

This measure is intended to make it easier for citizens and businesses to gain access to relevant information on public services by developing new added value applications (for example, to find out over the phone what is the best public transportation that allows you to travel to where you need to go, discover how many restaurants already exist in the neighbourhood where you plan to set up your own and where they are located, etc.) enabling user involvement in the production of informative content and transactional services.

Objectives
a) To create the site "dados.gov.pt" to publish and organise government information, in formats that can be read and reused by anyone. Amongst the data that the site will provide initially is:
   i. Geo-referenced data from requests placed in the service "My Street", its state of repair and relevant dates;
   ii. Geo-referenced location of relevant information on local government services, contact details and opening hours;
   iii. Data from the Simplified Business Information (IES) system and the geo-referenced Companies Registry, for example the location of registered companies by economic activity, so that potential investors have easy access to features of the business fabric by geographic area;
   iv. Geo-referenced statistical data on public service assistance, particularly with regard to complaints, praise and suggestions, as well as satisfaction studies and surveys (service barometer).

b) To provide the technological interface for the creation of new ways of delivering public services in collaboration with citizens and businesses, starting with the "My Street" service interface so that citizens and enterprises can incorporate the service in mobile phone applications, property management applications and so on.

Timescale
2012.

Impacts
To encourage transparency in information access, collaboration, and in particular the creation of electronic public services by society in general.

Indicators and Goals
To provide Public Administration data in areas where it is possible to use that information to develop value-added services for citizens and businesses.

2.3.2. PARTICIPATORY BUDGETING

Description
The creation of an electronic tool, providing free installation of an instrument for "participatory budgeting" to all municipal governments who wish to have one. This instrument shall include i) an " instructions and procedures manual" to assist in drawing up participatory budgets and ii) a software application that can be used for that purpose by the municipal authorities.

Objective
To make the tool available to most municipal authorities, to encourage citizenship and civic participation.

Timescale
First half of 2012.

Impacts
- To increase civic and political participation in the local authority decision-making process.
- To disseminate best practices and exchange of experiences amongst local authority users.

Indicators and Goals
To launch a pilot scheme with at least three local authorities in 2012.

2.3.3. MY BILLS AND MY SCHEDULE

Description
This initiative aims to create an electronic tool allowing any citizen to obtain a summary of their financial status and the maturity of their obligations with the state. At first, there will

be a pilot scheme with the services most in demand from central government. This summary is available via the Citizen Website, using the secure electronic identification mechanisms offered by the Citizen Card. This will be a One-stop-shop to check the situation of the payment instalments due between citizens and the authorities (e.g., amount of tax payable, excess retentions due, etc.), as well as scheduled obligations (e.g., periodic vehicle inspections).

Objectives
- To create a personal summary so that citizens can always see the details and balances of their financial relationship with the public administration and any scheduled obligations, at any time.
- To harness the full technological potential of the Citizen Card and provide a useful, easy to use tool that can significantly improve citizens' lives.

Timescale
2014.

Impact
To improve the relationship between citizens and the public administration.

Indicators and Goals
To launch a pilot scheme by 2014.

3 – EXCELLENCE IN EDUCATION

VISION

To encourage the use of next generation networks by educational communities through the provision of educational services and content of educational interest, enhancing the existing infrastructures and technological equipment in public schools.

KEY GOAL

To consolidate Portugal's position of as a benchmark in the availability and use of NGN-ITEC as tools to improve the teaching-learning process.

FRAMEWORK

The Technological Plan for Education (PTE), approved by the Council of Ministers Resolution No. 137/2007 of 18 September 2007, is the innovation and technology modernization programme for Portuguese schools that places Portugal alongside the most advanced European countries in the technological modernization of education.

The PTE is based on policy and guidance documents that stress the importance of building the skills needed for the Information and Knowledge Society and the role of Information and Communication Technology (ICT) as basic tools for learning and work, along with the Lisbon Strategy and the Education and Training Programme 2010, in line with the agenda for technological modernisation and improvement of the qualifications of current and future generations in Portugal as proposed by the Technological Plan and the National Strategy for Sustainable Development.

Three years after implementation, the PTE has reversed the major factors inhibiting the use of ICT in Portuguese schools, promoted equality between schools with regard to access and use of technology and educational content in teaching and put Portugal at the top of international rankings regarding critical technology for success in learning and educational achievement.

The measures recommended by PTE and covered in its three areas of action - Technology, Content and Training - helped educational communities from pre-school, primary and secondary education, particularly in schools with pupils between 4th and 12th grades, and at the secondary education level has reached a population of over 1 million individuals, as well as hundreds of thousands of young people and adults in training.

The PTE intends to continue investing to improve teaching and learning in schools, maximizing infrastructure and technological equipment already available, promoting the use of next generation services in school and the educational community.

The most significant measures in this new phase of the PTE represent an important contribution to the Digital Agenda 2015.

Objectives

a) To offer services to enhance the effectiveness of educational activities using the communication and collaboration facilities of online services involving digital content platforms and other tools to support students and teachers available on the Schools Website, which is the collaborative platform implemented in the first phase of the PTE.

b) To provide parents and guardians with mechanisms for overseeing the educational progress of students and their interaction with the school.

c) To disseminate the use of intelligent management systems in schools.

Measures

3.1. Spaces for Students, Teachers and Parents (Educational Supervisors)

Description

These personal areas are available on the Schools Website, where students, teachers and parents have access to the tools, communication mechanisms and content of educational interest necessary to encourage greater involvement in school life and their own educational progress.

Objectives

▪ To systematically ensure the availability of up-to-date information concerning students' academic records, including timetables, test dates and work deadlines (with an alert mechanism), as well as field trips, with provision for online authorisation.

▪ To provide management and content production features, for creating personal folders for displaying their own contents, interactions, collaboration and e-portfolio.

▪ To improve the availability of content, support materials for teaching activities, tools to support career management as well as production and content editing tools.

Timescale

• Parent/Educational Supervisor Space: As of 2012.
• Student Space: As of 2011.
• Teacher Space: As of 2011.

Impacts

• Parent/Educational Supervisor Space: Greater involvement of parents and Educational Supervisors in school life and greater ease in monitoring their children's progression.
• Student Space: Safer use of social networks by students and greater ease in building the student's electronic portfolio.
• Teacher Space: Increased classroom management efficiency.

Indicators and Goals
- Provision of personal spaces for students, teachers and parents in 2012.

3.2. Virtual Learning Platform

Description
Collaborative platform for content delivery by subjects and disciplines for different levels of education, with areas dedicated to students and teachers, encouraging self-education and independent learning.

Objectives
- To provide content for self learning (E-learning), and educational support for students, such as virtual reality simulators, videos, educational games, tests and assessment tools, exercises and activities.
- To provide content training for teachers, enabling their self-training in curriculum areas, teaching and the use of ICT in the teaching and learning process.
- To provide interaction between students and teachers, including the creation of work groups, forums, practice communities, and so on.

Timescale
As of 2012.

Impacts
To expand self-education, independent learning and collaboration opportunities in teaching and learning.

Indicators and Goals
- Number of digital content packages provided for educational use, aimed at students, teachers, guardians and school administrators: 10,000 in 2015.
- Number of subject areas made available. Goal: All subject areas to be covered in 2015.

3.3. Virtual Workbooks

Description
School Website Area with interactive workbooks to support the learning process.

Objectives
- To provide interactive workbooks that can support the learning processes inside and outside the classroom and adapt the content to different learning stages.
- To provide students and teachers with activities and exercises along with their solutions, allowing each student's results to be recorded.

Timescale
2012.

Impact
Improved learning conditions and greater independent learning by students.

Indicators and Goals
- Number of subjects with workbooks available. Target: 4 in 2015.
- Number of school years with workbooks available: Goal: every school year in 2015.

3.4. Portuguese Language Cyber-School

Description

Schools Website Area aimed at learning Portuguese as a native and foreign language at different levels of education.

Objectives
- To provide a digital library, with literary and non-literary texts and databases with summaries.
- To provide interactive tests to check reading and comprehension.
- To provide exercises and interactive games.
- To provide theoretically-based help and hints on exercises and tests.
- To provide glossaries and special terms for students of Portuguese as a second language.

Timescale

Implementation in 2010 and continued development until 2012.

Impacts

To improve the mastery of Portuguese language skills.

Indicators and Goals

Number of contents available. Goal: 5,000 in 2015.

3.5. Online Enrolment and Certification

Description

Online sites for the enrolment and automatic placement of students in schools and to look up student's academic records and request certificates.

Objectives
- To develop a site for student enrolment that allows for different kinds of simplified, automated enrolment.
- To simplify the process for requesting and providing student's academic certificates.

Timescale
- Online enrolment: 2011.
- Online certificates: 2011.

Impacts

- Online enrolment: Streamlining of the procedures for enrolment and transfer of students.
- Online certificates: Streamlining of certificate requests.

Indicators and Goals

- Online enrolment: Percentage of enrolments made via the Web. Target: 100% in 2012.
- Online certificates: Percentage of certificates requested via the Web Target: 100% in 2015.

3.6. Virtual Maths Tutor

Description

Virtual system for learning mathematics, aimed at Primary School (1st to 4th grade) to take advantage of the large number of homes and schools with Internet connections and the computers that are already available for students in these grades, provided through the "e.escolinha" programme. This project is of particular relevance to the national objective of improving basic skills, particularly in terms of mathematics.

This is a wide-ranging plan, as it involves various stakeholders in education, and is particularly innovative in providing support to parents and guardians so that they can see how their children are progressing in learning mathematics.

The potential expansion into other disciplines will also be another asset of this project, once its effectiveness has been proven.

Objectives

- To help students in learning mathematics, through virtual tutoring sessions.
- To help teachers in teaching mathematics, through learning tools that can be used with computers and / or interactive whiteboards and digital creativity tools that allow teachers to create their own content.
- To support parents and guardians, enabling them to follow how well their children are learning mathematics.
- To provide technical support to students, teachers and guardians regarding technical queries related to the use of the virtual tutor.

Timescale

2010/2011 academic year (pilot scheme); Expansion to 2015.

Impacts

Improved mathematics teaching and learning conditions for Primary 1 to 4, and greater ability of parents and guardians to monitor their children's learning.

Indicators and Goals

- To provide a virtual platform to support the teaching and learning of mathematics in 2012.

4 –PROXIMITY HEALTHCARE

VISION

To ensure the provision of informed, quality health services, through the provision of health information to the citizens along with electronic health services, wherever, however and whenever they are needed. Access to information and services by the citizen or a health professional will be conducted in a proper, consensual and safe manner.

KEY GOAL

A basic record of every citizen's health information is to be created by late 2012. It will be accessible electronically, anywhere and at any time by the citizen or licensed health professional attending him/her. The health information will be available with complete records by late 2015, so as to be ready for integration throughout Europe.

FRAMEWORK

The National Health Service (NHS) is the main pillar of the national health system and is admittedly one of the most important achievements of Portuguese democracy and the social concerns at its root. It has undergone many changes over the years in response to the challenges that social changes and advances necessarily bring. The Portuguese NHS's policy is therefore patient focused and aims to offer more and better health care.

Part of this policy has been to introduce profound changes to the management models and the provision of health services in Portugal. Health Information Technology and Communications have played an important role in helping to facilitate access, simplify procedures, improve quality and ensure the efficient use of resources.

A proper Health Information System has been fundamental in order to replace the logic of providing stand-alone health care in an integrated fashion, and this will ensure that the different health units, of whatever size, aims or specialisms, can work together to provide better healthcare to citizens in an integrated and patient-centred way.

However, providing more and better health does not stop new challenges from arising and these have to be resolved. Paradoxically, it is sometimes the improvements in the health system, such as increased life expectancy, changes in quality of care or greater enjoyment of life, that raise new problems requiring new solutions.

Complex challenges arising from an aging population, the consequent increase in the burden of chronic diseases, due to the creation of new health care quality, must be addressed without calling into question the health system's social, economic and financial sustainability.

Information and Communications Technology has an important role to play regarding the availability of electronic information and the creation of new health services, primarily

aimed at promoting healthier life styles, preventing disease or combating more serious illnesses. Services that complement current supply, that are closer to the citizen and that arise out of cooperation and involvement of society are nowadays commonly referred to as Health 2.0.

This new idea of Proximity Healthcare is an ambitious and complex project, benefiting from facilitating and motivating factors that make it not only credible but also desirable. In addition to the on-going reorganization of health services, a greater focus on the individual, the implementation of an integrated and interoperable Health Information System, it must also take into account any advances arising from the policies implemented in New Generation Network technological infrastructure, increased computer literacy, improved national R&D and technology transfer, as well as supporting the development of many technology-based companies with potential for innovation and entrepreneurship.

The setting of an agenda that brings together the challenges facing the health system and the potential of new infrastructures and a national knowledge base, means that innovative solutions can be created that meet the various fundamental objectives, namely:

- Improving the quality of services, including providing citizens with new close at hand healthcare services;
- Simplifying proper use of resources, ensuring the sustainability of the Health System:
- Supporting the development of technological solutions and domestic companies that are capable of asserting themselves on the European and global markets, thus contributing to the quality of our manufacturing industry and thereby improving our competitiveness.

MEASURES

4.1. New-generation health network

Description
Availability of a next-generation network, with a strong fibre optic component, will provide the health care facilities with fast access to new kinds of information, specifically clinical information, in multiple formats (text, sound, images, and video). Implementation of the network will be carried out in 2 phases.

Objective
Ensure that all NHS health care institutions and facilities have broadband access.

Timescale
End of 2012.

Impacts
- The new-generation health network - together with the health care data processing centre and the interoperability platform – will ensure a technology infrastructure that is fundamental to implementing the public and private projects that depend on it.
- The new-generation network will allow advances in health outreach projects, bringing eHealth services to the public in their homes.

- Ensuring broadband access to all NHS health care institutions and facilities will be, simultaneously, a necessary element and a catalyst for development of health care services in Portugal.

Indicators and goals
- Hospitals: 1 Gbps by the end of 2012.
- Health Centre Groups (ACES) / Health Centres / Family Health Units (USFs): 100 Mbps by the end of 2012.

4.2. Electronic Health Record

Description
This broad-ranging project is creating the conditions to "ensure that, by the end of 2012, all Portuguese people will have an electronic health record", as specified in the Programme of the XVIII Constitutional Government.

The project is building on the results of an initial planning and specification phase in 2009 and on the successful multidisciplinary work involving professionals from different walks of life (doctors, nurses, ICT professionals, lawyers) and representing the various stakeholders in the field (central administration, hospitals, primary health care, health authorities, professional associations, universities).

To implement this project, a National Commission for the Electronic Health Record (EHR) was established, and the project's national coordinator was appointed, to be supported by an executive team.

The mission of this framework is to ensure compliance with the approved plans, which envisage adoption of a summary version of the EHR for use in Portugal, and implementation of a full European EHR by the end of 2015.

This record will be created with input from the various providers of health care and allied services, regardless of their nature or social setting, thus placing the citizen at the heart of the system.

Objective
To implement each citizen's Electronic Health Record (EHR).

Timescale
- Summary version: by the end of 2012
- Full version: by the end of 2015

Impacts
- Being able to provide secure, appropriate access to clinical information for health care professionals treating a member of the public will have an immediate impact on the quality of health care and in reducing its cost.
- Given its scope and complexity and its structural role, this project will produce an area of opportunity for new projects, creating objective conditions for generating technology solutions that can then be internationalised. In this regard, and given that this is a matter on the global agenda (and, of course, on the European Union

agenda), there is a greater potential market for these solutions and a greater chance that Portuguese companies will become key players in these broader contexts.

Indicators and goals
- Availability of a summary EHR for all citizens, in a national context, by the end of 2012.
- Availability of a full version for all citizens, integrated into the context of the EU, by the end of 2015.

4.3. Online Access to Health Care Services

Description
The Ministry of Health has been developing a set of electronic services that give members of the public access to information and to health care facilities: consulting the National User Registry, scheduling primary health care appointments, requesting prescription renewals for people with chronic illnesses, access to the management system for users registered for surgery (SIGIC).

To promote "proximity healthcare", there are plans to roll out an integrated platform that allows simplified, consistent access to the enabled services and increases the number and quality of services provided through the system.

Objective
To give citizens integrated access to eHealth services.

Timescale
Implementation in 2011, with new features being added by 2015.

Impacts
- This measure responds to the goals of simplifying access, describing the services and optimising resources.
- Through this measure, citizens gain direct, unmediated access, without travel costs, to information related to their access to a set of health care services. This contributes to their transparency and gives the public hands-on control of services provided by this Public Authority.

Indicators and goals
- To implement a platform giving citizens access to eHealth services by the end of 2011.
- To ensure that the computer applications, specifically the new or revised ones, include a web interface seamlessly integrated into the platform, whenever the information being processed is of relevance or interest to the citizen, by the end of 2011.
- To identify and implement new eHealth services designed for "proximity healthcare" by the end of 2011:
    1. Look up their Paperless Vaccine Record;
    2. Track the process of setting up a hospital appointment with a specialist;

3. Find out one's personal "bill" for the cost of medications.

4.4. Tele-health services for elderly and/or chronically ill citizens

Description
This measure, which relies on the potential of new-generation networks, builds on the services of classical tele-medicine, projecting them from health care facilities into the elderly and/or chronically ill citizen's own living space.

Technological conditions and basic processes will be created to implement tele-monitoring and tele-homecare systems tailored to different needs. To support these processes, local or regional call centres and monitoring centres will be set up to serve the needs of elderly and/or chronically ill citizens, whether the contact is initiated by the user or is an active response to automatically triggered alert/alarm situations. This measure will also be an integral part of a response to the social issues arising from the phenomena of isolation associated with increased life expectancy and changing social patterns.

Objective
Implement a tele-health system to serve elderly and/or chronically ill people. The monitoring and support will occur under the auspices of the National Commission for Tele-medicine and Tele-health, which is yet to be established.

Timescale
Launch of medium-scale pilot projects in 2011.
National coverage by the end of 2013.

Impacts
- Modern societies face significant challenges due to the aging of the population as well as the resulting increase in chronic illnesses and the necessary creation of new quality health care services, in a context of financial support for the health care system.
- These measures are being realized using a model recognised as the appropriate one for these challenges. It is based on prevention, early detection and intervention, and on education/adaptation of lifestyles.
- In addition, this measure offers a high potential for innovation and for creating products that can be generalised and exported to global markets. In fact, once the platforms and the basic monitoring and response services are in place, this is a very adaptable area.

INDICATORS AND TARGETS:
- Install five local or regional tele-health pilot schemes for elderly patients or chronically ill patients. By the end of 2011.
- Expand successful tele-health projects (or currently operational tele-medicine programmes) to a national scale. By the end of 2013.

4.5. Paperless Clinical and Administrative Processes in Hospitals

Description

Paper records and non-integration of information into the health care cycle are significant obstacles to improving access, modifying services and optimising resources. Eliminating paper and integrating information can potentially raise the services to a higher level of efficiency and effectiveness.

This measure does not merely aim to automate the existing processes, since this would only serve to automate inefficiencies and "modernise" the bureaucracy. Instead, it is meant as a major effort to re-engineer and streamline administrative processes.

Computerising and modernising hospital procedures (both clinical and administrative) naturally dovetails with the ongoing modernisation of transversal and national systems and repositories (i.e. SIGIC, CTH, e-Agenda, EHR) and creates conditions for providing citizens with new online services, thus supporting the implementation of objective 3.

Objective

Paperless clinical and administrative processes in hospitals

Timescale

 Hospital clinical processes should be paperless by the end of 2013.
 Clinical and administrative processes at hospitals, as well as Primary and Continuing Health Care centres by 2015.

Impacts

- Eliminating paper and integrating information could greatly improve the efficiency and effectiveness of the services, if accompanied by significant efforts to reorganise processes.
- In addition, this modernisation of the health care facilities is essential for achieving a systemic, natural, necessary integration with the national repositories and systems being implemented.
- Because of its scope, complexity and importance to the Health Care System, computerising hospital processes can serve as a catalyst for new opportunities for the country's ICT industry. This modernisation impacts two areas (Clinical Information Systems and Workflow/Document Management Systems) in which Portugal has solid knowledge and experience, which means that products developed or generated can be leveraged with an eye to their internationalisation.

Indicators and goals

- Integrated systems for clinical processes, integrated with Primary Health Care and Continuing Care, in all hospitals by 2013.
- Integrated electronic systems, in the administrative areas, in all hospitals by 2013.

4.6 Paper-Free Prescriptions for Pharmaceuticals and for Complementary Methods of Diagnosis and Treatment (CMDTs).

Description

Eliminating paper prescriptions and requisitions improves service to citizens, reduces administrative costs and allows more accurate billing. Considering the already advanced level of automation at the start and end of the cycle – namely the computerised prescription process in place at health care facilities and the high level of computerisation among providers (pharmacies and CMDT centres) – the challenge lies in implementing a system that acts as an interface, central repository and "clearing house".

Objective

Paperless Electronic Prescriptions for Pharmaceuticals and CMDTs.

Timescale

Integrating electronic prescription systems (at health care facilities) with those of the dispensary services (pharmacies) through the creation of and access to a shared repository by the end of 2011.
Expanding the processes to handle prescriptions and provision of CMDTs by the end of 2012.
Integration with the bill payment and checking mechanisms by the first half of 2013.

Impacts

- Paperless processes for prescribing treatments.
- Increased speed, quality and security of the checking/payment process.
- Real-time tracking of the status and cost of the services provided. Obtaining effective management indicators on the tactical and strategic level.

Indicators and goals

- Expanding the electronic prescription of medication to all health care facilities of the NHS. By the end of the first quarter of 2011.
- Implementation of the National Prescription Database (BDNP). By the end of the first half of 2011.
- Implementation of 3 pilots of the integrated prescription and dispensing system involving hospital facilities, primary health care facilities, and pharmacies in different regions of the country. By the end of the first half of 2011.
- National process for integrating the electronic prescription and dispensing of medications. By the end of 2011.
- National rollout of prescription for CMDTs. By the end of 2012.
- National integration with bill checking and payment mechanisms. By the first half of 2013.

4.7. Transmitting Advanced Emergency Clinical Information from the Scene of Treatment

Description

In medical emergencies (sudden illness or accident) this measure will let the team dispatched to the scene use a set of diagnostic aids immediately and supply the results to specialised health care professionals based in Guidance Centres for Emergency Patients

(CODUs). This measure will mark the evolution of health care systems in their various forms and will capitalise on the highly qualified human resources available and the efforts to modernise emergency response resources.

Objective

An "Express Lane" for Emergency Medical Information. Direct connection between the emergency scene and the guidance centre.

Timescale

Local testing by the end of 2011. Expansion to the entire Integrated Medical Emergency System (SIEM) by 2013.

Impacts

- Improving the quality of diagnoses and initial care to the patient while making advanced information available to hospitals will contribute considerably to the quality of care, reduction of mortality, speed and quality of recovery, optimisation of resources and the sustainability of the system.
- This is an objective with potential to affirm Portugal's capacity for innovation and to bring great success.

Indicators and goals

- To conduct 2 differentiated pilots by the end of 2011.
- Expansion to all SIEM resources by the end of 2013.

5. SMART MOBILITY

VISION

To develop technology solutions for mobility and support for smart mobility and energy optimisation, with a strong emphasis on Portuguese technologies, building on the country's strengths in information technology, smart grids, and knowledge about e-mobility technologies, generating "export clusters" that will operate in close cooperation with the competitiveness clusters and existing industrial clusters that are already gearing up for the new paradigms.

KEY GOAL

To position Portugal as a Benchmark Country in the development of sustainable mobility, including the creation of integrated platforms for e-mobility and developing flexible systems that facilitate either the intermodal use of transport or the use of other services, such as e-mobility services, by developing a cluster of industries and services that produce and export these solutions.

FRAMEWORK

The transformations underway in the world economy mean that communications and mobility are essential to the competitiveness of the national economy.

Responding to the need to transport people and goods in contemporary societies, the aim is to move towards smart mobility that minimises the use of resources, particularly energy consumption, and helps reinforce the endogenous renewable component of the global energy mix.

Smart mobility infrastructures based on a more intensive use of information, communication and electronic technologies (ITEC) will become increasingly widespread and will interact, through all channels, with the citizen, traffic management agencies, the bodies that manage the electricity system, and the vehicles themselves.

The citizen will have all the information available in order to make the best decisions, being able to choose between private and public transport, using a single payment method for all such trips.

It is also important to emphasise the integration of the telecommunications and mobility networks with the electricity system. Thus, the connection between smart grids and electric vehicles will have positive impacts in terms of electricity production, storage and consumption, given the possibilities offered by new batteries but also by ICTs, which will allow more efficient grid-to-vehicle and vehicle-to-grid charging, and which will help stabilise the grid when the system is under stress.

These grids are also essential for efficient incorporation of renewable energy sources, which have a high level of penetration in Portugal, and the increased consumption of electricity arising from this new form of mobility.

Electric vehicles will gradually become the privileged form of personal mobility, being integrated in a smart system that manages traffic and the generation, storage and consumption of energy, contributing decisively to the improvement of energy efficiency and to reducing the carbon footprint.

We should mention the projects being developed in Portugal in this sphere. Mobi.E, the e-Mobility Programme, is implementing a comprehensive set of initiatives to promote widespread use of electric vehicles in Portugal. At present it is the only national programme and is the most advanced to be implemented anywhere in the world.

Inovgrid aims to provide the electricity grid with information and equipment able to automate grid management, improve quality of service, reduce operating costs, promote energy efficiency and environmental sustainability, and increase the penetration of renewable energy and electric vehicles.

InovCity is another initiative and consists, in this phase, of installing 35,000 energy boxes in Évora, as part of the first smart city in this country and one of the first in the world.

There are universities and research centres involved in transnational research projects, which will eventually play a key role in implementing our national ambition in this field and will be vital in ensuring the implementation of these measures.

MEASURES

5.1 – Passe Portugal Total (Portugal-wide Travel Pass) - involvement in developing a smart mobility system for use by the public

Description
To create a universal transport payment card/medium that facilitates integration between travel by public transport and travel by car. This card must allow the consolidation of all the monthly passes (or individual tickets) that public transport passengers typically acquire, leading to the complementary development of a smart platform to support management and information about public transport. This pass will be integrated with the Mobi.E system, leading to a single, integrated approach to sustainable mobility. Along with the card, to guarantee its efficiency, a multi-terminal information system will be made available.

Objectives
  a. To develop the technological support system for a single transport payment card that provides certified quality and interoperability across all existing ticketing systems, removing the bureaucracy from between the user and public transport. Just one transport card is all that people will need in order to use public transport in Portugal, and topping it up will be easier and faster. To ensure integration between the Passe Total and the Mobi.E system, contributing to an integrated approach to sustainable mobility.

b. To guarantee development of a shared data-bus that incorporates data about traffic, parking and public transport, which can serve to develop services to support the activities of the traffic management agencies to optimise the ways it meets the market's need for space. It would include components reachable through applications in terminals that are accessible to end users, letting them optimise their mobility while privileging public transport. To encourage telecommunications providers to include smart mobility apps on all terminals, namely smartphones.

c. To use the mobility public system to promote the concept of electric car sharing, or alternatives within the concept of light vehicles, such as two-wheel vehicles, encouraging companies to offer such products, in order to discourage the use of traditional private transport.

d. To develop and implement systems for traffic assessment, management, information and signalling, particularly in large metropolitan areas, which would allow public and private vehicles to maintain a higher average speed, reduce consumption, increase safety, and reward rational users while penalising irrational use.

e. To ensure conditions that make it possible to develop an easy-to-use Public Database with an appealing format, indicating the energy characteristics of all vehicles meant for private use, when used at different levels of their capacities, allowing the public to assess the rationality of driving and riding in them.

Timescale

By 2012, much of Portugal's mobility system will be supported by a single payment card and information systems supporting optimisation of mobility on personal and public terminals. By 2015, the country will have a universal, integrated payment and information system for all public mobility options.

Impacts

Mobility using public services and vehicle sharing will be more and more attractive and efficient, with an expectation that these forms of mobility could gain a 20% market share within 5 years.

Indicators and Goals

- Universal payment system: 80% usage in 2013 and 100% in 2015.
- Fully developed shared data-bus: in 2012.
- Experimental car sharing system: in 2012; commercial availability in 2013; general deployment in 2015.
- Traffic management pilot system: in 2013; large-scale traffic management in 2015
- Energy characteristics information system: demo in 2011; full system in 2012.

5.2 – Smart Mobility Support Infrastructures

Description

Development of an open technology infrastructure to stimulate cooperation between systems offering smart mobility support services. The infrastructure will have to promote the development of new business models for safe, sustained mobility based on collaborative networks of business partners that will guarantee the availability of multiple services to the public to promote safe, optimised mobility.

Objectives

a. To promote development of an open infrastructure in the form of a public digital data-bus supporting collaborative networks to offer integrated services to the public in a context of optimised mobility.

b. To develop smart services compatible with mobile terminals (such as smartphones) to ensure the best information for decision-making by the driver and/or vehicle in different contexts and with an eye to optimising routes and access to parking, information on electric car sharing, energy consumption, obstacles along the route, accidents, road conditions, weather and so on.

c. To develop an open infrastructure for cooperation between vehicles, and between vehicles and the infrastructure, to support mobility management services and active safety in the vehicles, combining positioning technologies and broadband networks to support new services based on the vehicles' constant connectivity.

d. To develop infrastructures that allow timely authorisation of hazardous transport, having vehicles always connected in an open framework that supports the mobility of hazardous goods, and hazardous transport in particular.

e. To develop demo vehicles in motorway and urban environments using secure, short-range, high-speed communication, and whenever possible run the demos using a significant number of vehicles equipped with on-board smart terminals (preferably electric cars) and active safety applications to avoid accidents through prevention or by acting proactively on the vehicle.

f. To foster the emergence of a technology ecosystem supporting Transport and Mobility, comprising a network of Innovation Catalyst Companies supported by entities in the Science and Technology Sector that, based on the experience in the Portuguese market, can be internationalised and exported.

Timescale

From 2011, Portugal must gradually acquire the skills and know-how to develop a smart mobility management infrastructure and will have to invest in pilots starting in 2012 to successively foster the spread of proven practices.

Impacts

- The public will have access to a new range of mobility services, supported by an open infrastructure allowing cooperation between systems, which should catalyze the development of new business models for safe, sustained mobility.

- When the companies in this sector share common strategies that drive development, they will enable the technological progress of the national infrastructures for mobility by road, rail, airports, ports, river, and in urban settings, with a focus on smart infrastructure, identifying the channels to be used and supplying them with all information that could permit safe, efficient mobility. Portugal could thereby have an export cluster.

Indicators and Goals

- Creation of the data-bus: testing in 2011, with a gradual phase-in from 2012 to 2015.
- Information systems: phase-in from 2012 to 2015.
- Collaborative infrastructure between vehicles: testing in 2012, with general use in areas of proven effectiveness by 2015.
- Transport authorisation: evaluation in 2012 and in use in 2013.
- Short-range communication between vehicles: testing in 2013; efficient developments in 2015.
- Establishment of specialised ACE group clusters: in 2011; internationalisation from 2013.

5.3 Mobi.E Platform for the Promotion of Electric Vehicles

Description
Developing electric vehicles and their subsystems and establishing a new paradigm for mobility and energy optimisation relying heavily on Portuguese know-how.

Objectives
a. In tracking Technology Research and Development investments being made in the context of the Mobi.E programme, to continue to support the development and implementation of optimised charging solutions for home charging, quick charging and Street+Indoor charging.
b. To develop the information system on charging stations and the range of charged vehicles, accessible from personal terminals, improving the communication between the vehicle and the management infrastructure.
c. To develop new e-mobility solutions, specifically two-wheel solutions and driverless electric vehicles.
d. The aspects that flow from the new mobility paradigm based on electric vehicles must include further study of energy storage and its integration with the grid, giving thought to distributed generation of renewable energy and the possibility of developing vehicle-to-grid facilities.
e. To develop a smart electrical energy management and information system for a relevant fleet of electric vehicles, aiming for integration with smart buildings in the context of next-generation networks. In this context, the creation of "smart neighbourhoods" should be promoted, particularly in new developments or areas being redeveloped, where new end-user technology solutions can be tested and where various new solutions can be added, integrating the home and mobility.
f. To stimulate a research agenda for e-Mobility, guaranteeing the creation of a network that involves bodies from the Science and Technology Sector with a capacity to support the companies conducting research, development, testing and production in this sector.

Timescale
This programme will be developed between 2010 and 2015.

Impacts

These targets aim to entrench electric mobility in Portugal and guarantee its integration into an optimised smart energy system with significant benefits for the country's energy bill in general, especially for families and businesses. Main impacts:

- Development of marketable, highly technological new goods and services that could position Portuguese companies more competitively in foreign markets.
- Better integration between the mobility model and the electricity system, allowing a better integration of renewable energy and the consequent reduction of foreign energy dependence or the environmental impact of energy consumption.
- Development of a smarter mobility model that reduces travel costs or travel time.

Indicators and Goals

- Numbers of companies in the sub-sector/strategic hub with an international presence: 30.
- Export of goods and services from the sub-sector/strategic hub: €800 million.
- Number of companies and turnover (domestic and external markets) of the sub-sector/strategic hub: 50 companies / €1 billion.
- Number of jobs: 4,600 jobs.

KEY GOALS

New-Generation Networks

To achieve national coverage with fixed New-Generation Networks by the end of 2012 and mobile networks by the end of 2015, placing Portugal in the vanguard of development in this sector, ensuring a positive impact across the whole economy.

Better Governance

To maintain Portugal's leadership position in implementation and development of online public services, attaining a 50% increase in the use of those services by families and doubling the exports resulting from the internationalisation of the solutions developed.

Educational Excellence

To bolster Portugal's position as a Benchmark Country in the implementation and use of new-generation networks as well as information, communication and electronic technologies as tools to improve the teaching/learning processes.

Proximity Healthcare

By the end of 2012, a basic health information record will be created for each citizen, electronically accessible from any place at any time by the citizen or by an authorised health care professional providing service to that citizen. By the end of 2015, the health care information will be available through a full record prepared for integration with the European system

Smart Mobility

To position Portugal as a Benchmark Country in the development of sustainable mobility, including creation of integrated platforms for e-mobility and developing flexible systems that facilitate either the intermodal use of transport or the use of other services, such as e-mobility services, by developing a cluster of industries and services that produce and export these solutions.

Digital Agenda 2015

Summary Table of Measures and Indicators

Measures	Timescale	Indicators/Goals
NEW GENERATION NETWORKS		
New Generation Broadband for All	Fixed network: end of 2012; mobile network: end of 2015	- Percentage of municipalities with fixed NGN network coverage: 100% in 2012. - National LTE coverage: 100% in 2015. - Percentage of population in rural areas with Public Telecom Services carried over NGN Broadband and Smart Work Places: 80% in 2013; 100 % in 2015. - Percentage of Government Services with access to NGN broadband for each of the areas specified in the digital agenda: 80% in 2013; 100% in 2015.
NGN based services for the development of the economy and society	2011-2015	- Widespread provision of residential services: NGN 2013. - Widespread availability of NGN and multi-terminal internet services: 2013. - Operators supplying residential and business customers with NGN applications: 100% in 2013. - Percentage of homes with infrastructure for NGN services installed: 30% in 2013; 60% in 2015. - Percentage of homes with NGN intelligent home service: 5% in 2013; 20 % in 2015. - Existence of SME business service packages that take advantage of NGN: 2012. - Percentage of SME business customers with NGN applications: 20% in 2013; 60% in 2015. - Website to support economic development in rural areas 2013.
Business Support Platforms	2011-2012	- Creation of a wide range of companies set up to sell and hire business efficiency modules and platforms: 2012. - Creation of a model for encouraging collaboration between the services and application development industries and the operators: 2011. - Creation of a WEB services "Digital Bus": experimental in 2011; fully operational in 2012. - Percentage of businesses using the Bus who are either directly linked to hubs or linked indirectly through associations: 100% in 2012. - Availability of the NGN Tools Website for B2B services spanning the whole economy: 1st pilot stage in 2011; fully operational 2012.
Development of networked ITEC and NGN Industrial Competencies for the World Market	2012-2015	- Establishment of an integrated model of State support to companies for capacity-building in global marketing expertise: 2010. - Percentage of GDP generated by businesses in this sector: 10% in 2015; - Existence of at least one top-ranked international company or A.C.E. enterprise group in each NGN sub-sector of Health, Education, Governance, Mobility: 2013. - Number of top-ranked or A.C.E. companies created in this sector with an international presence: 12 in 2015.
BETTER GOVERNANCE		
Multi-Channel Delivery of Public Services, Tailored to Our Needs	2013	Launch of the pilot project "Telefone do Cidadão" (Citizen Phone) by 2013 (thereby enabling access to high demand services, without the citizen having to know the customer service organization being used or the 'right' agency to answer their query).

My Business on the Internet	End of 2012	• Provision of a Business Website offering assistance to business people so that, once they have chosen their internet provider, they can access facilities for setting up their own company website, organising the content and installing a payment engine.
'Zero Licensing' - a Simplified Licensing Scheme	2011	• Provision of an electronic one-stop-shop for municipal authorities, promoting its use through the "Loja da Empresa" (One-Stop_Shop for Business) network.
Open Administration	2012	• Provision of a data set produced by the Public Administration in areas where it is possible to use this information to develop value added services for both citizens and businesses.
Participatory Budgeting	2012	• Launch of a pilot study among at least three municipalities during 2012.
My Accounts and my Business Schedule	2014	• Launch of a pilot project, by 2014.
EXCELLENCE IN EDUCATION		
Spaces for Students, Teachers and Parents (Educational Supervisors)	2011-2012	• Provision of personal spaces for students, teachers and Parents (Educational Supervisors) in 2012
Virtual Learning Platform	2012	• Number of digital content packages provided for educational use, aimed at students, teachers, guardians and school administrators: 10,000 in 2015. • Number of subject areas made available: all subjects to be covered in 2015.
Virtual Workbooks	2012	• Number of subjects equipped with virtual workbooks: 4 in 2015. • Number of school years provided with virtual workbooks: all school years in 2015.
Portuguese Language Cyber-School	2010-2012	• Number of content packages made available: 5,000 in 2015.
Online Enrolment and Certification	2011	• Online Enrolments: Percentage of enrolments made via the Web: 100% in 2012. • Online Certificates: Percentage of certificates requested via the Web: 100% in 2015.
Virtual Maths Tutor	2010-2011	• Provision of a virtual platform to support the teaching and learning of Mathematics in 2012.
PROXIMITY HEALTHCARE		
New Generation Health Network	2012	• Hospitals: 1 *Gbps* by the end of 2012 • ACES (Health Centre Groups)/ Health Centres /Family Health Units: 100 *Mbps* by the end of 2012
e-Health Register (RSE)	2012-2015	• Provision of a basic EHR covering all citizens nationwide, by the end of 2012. • Provision of a complete register covering all citizens and integrated at European Community level, by the end of 2015.
***Online* Access to Health Services**	2011-2015	• Implementation of a platform for providing citizens with access to online services, by the end of 2011. • Guarantees that computer applications, especially new or revised ones, will be equipped with a Web interface that is fully compatible with the above platform, in all cases where the information being processed is relevant and/or of interest to the public, by the end of 2011. • Identification and implementation of new online health services, designed for "proximity healthcare", by the end of 2011 (Consulting the Paperless Vaccination Record; tracking the appointments procedure for specialist hospital care; finding out one's personal "bill" for medication costs).
Tele-health Services for the Elderly and/or Chronically Ill	2011-2013	• Setting up five tele-health pilot schemes, at local or regional level, for the elderly and chronically ill by the end of 2011.

		• Expansion of successful tele-health (or currently operational tele-medicine) projects nationwide: by the end of 2013.
Paperless Clinical and Administrative Records in Hospitals	2013-2015	• Integrated medical record systems, linked to Primary and Continuing Health Care, in all hospitals by 2013. • Integrated electronic administration systems in all hospitals by 2013.
Paper-free Procedures for Prescribing Medicines and Complementary Methods of Diagnosis and Treatment	2011-2013	• Widespread introduction of the electronic prescribing of medicines in all NHS health centres: by the end of the first quarter of 2011. • Implementation of the BDNP (National Prescription Database): by the end of the first half of 2011. • Implementation of three pilots for an integrated prescribing and dispensing system, involving hospital units, primary health care units and pharmacies in different regions of the country: by the end of the first half of 2011. • Nationwide process for integrating the prescribing and dispensing of medicines: by the end of 2011. • Expansion of the prescription of Complementary Methods of Diagnosis and Treatment nationwide: by the end of 2012. • Nationwide integration of mechanisms for checking and payment of bills: by the first half of 2013.
Transmission of Advanced Emergency Medical Information from the Scene of Treatment	2011-2013	• Two differentiated pilots to be carried out by the end of 2011. • Extension to all SIEM (Integrated Medical Emergency System) facilities by the end of 2013.
SMART MOBILITY		
***Passe Portugal Total* (Universal Transport Ticket) - as part of the development of an intelligent mobility system for public use**	2010-2015	• Universal payment system: 80 % utilization in 2013; 100 % in 2015. • Integrated development of the shared data-bus: in 2012. • Experimental car-sharing system: in 2012; commercially available in 2013; general deployment 2015. • Pilot traffic management system: in 2013; large-scale traffic management in 2015 • Information system on energy characteristics: demo version in 2011; fully operational in 2012.
Support Infrastructures for Smart Mobility	2010-2015	• Creation of the data-bus: testing phase in 2011, gradual introduction between 2012 and 2015. • Information systems: beginning in 2012, fully widespread by 2015. • Infrastructure for cooperation between vehicles: testing phase in 2012, commonplace in areas of proven efficiency by 2015. • Vehicle licensing: under assessment in 2012 and in use in 2013. • Short-distance communication between vehicles: testing phase in 2013; efficient developments in 2015. • Creation of specialised A.C.E. group companies: in 2011; global marketing from 2013.
Mobi.E Platform for the Promotion of Electric Vehicles	2010-2015	• Numbers of companies in the sub-sector/strategic hub with an international presence: 30. • Exporting of goods and services from the sub-sector /strategic hub: € 800 million. • Number of companies and turnover (domestic and external markets) in the sub-sector /strategic hub: 50 companies / €1 billion. • Number of jobs: 4,600 jobs.