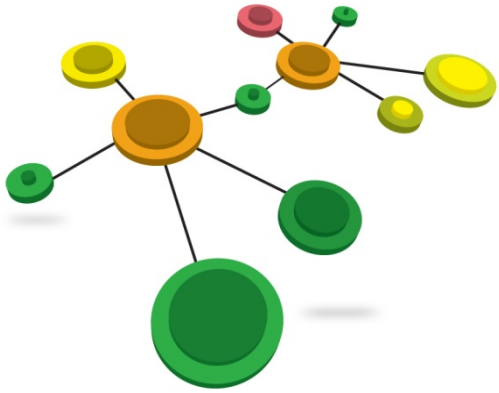

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# Research on Greek Policies and Practices

WP3: Research on National Policies and Practices

Publication date (final version):

30.09.2012

LEONARDO DA VINCI - MULTILATERAL PROJECT
ELGI - eLearning for eGovernment
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EACEA Education, Audiovisual & Culture Executive Agency

Education and Culture DG
Lifelong Learning Programme

Education and Training

# Research on Greek Policies and Practices

WP 3: Research on National Policies and Practices

Version 1.0 (Final Deliverable 3.3)

State of the Art National Report

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## ABBREVIATIONS

| | | |
|---|---|---|
| ABIE | - | Aggregate Business Information Entity |
| AIS | - | Administrative Information System |
| ASBIE | - | Association Business Information Entity |
| BBIE | - | Basic Information Entity |
| CCTS | - | Core Component Technical Specification |
| CSCs | - | Citizen Service Centres |
| DIGIT | - | Directorate-General for Informatics |
| EETT | - | Hellenic Telecommunications and Post Commission |
| EGSR | - | eGovernment Services Registry |
| EIF | - | European Interoperability Framework |
| ELSTAT | - | Hellenic Statistical Authority |
| ESF | - | European Social Fund |
| GCL | - | Government Category List |
| GFOSS | - | Greek Free/Open Source Software Society |
| GSIS | - | General Secretariat of Information Systems |
| HPARCA | - | Hellenic Public Administration Root Certification Authority |
| ICT | - | Information and Communication Technology |
| IKA | - | Social Insurance Fund |
| IT | - | Information Technology |
| OAEE | - | Organisation for the Insurance of Self-Employed Professionals |
| OPIS | - | Operational Programme for the Information Society |
| PA | - | Public Administration |
| PEGS | - | Pan-European eGovernment Services |
| PSI | - | Public Sector Information |
| SBD | - | Specific Business Document |
| TUN | - | Transaction Unique Number |
| UBL | - | Universal Business Language |

## TABLE OF CONTENTS

## INTRODUCTION

*The aim of this document is to identify and summarize the national aspects and peculiarity in the field of interoperability for the partners' Countries (strategic frameworks, laws, regulations, implementation, specific requirements, organizational aspects, technical aspects, case studies, best practices, etc.).*

*The template is composed of five sections. Each of them is designed to receive and analyse all data considered preparatory to the final filling of the national dossier provided by the project and to prepare the learning materials for the course aimed to create a consistent common level of competence in the area of interoperability of online services.*

*Some sections require the filling out of open fields to answer, which, depending on the complexity of the latter are specifically limited to particular indications.*

*The first part of the template, related to more general information on the partner's Country in question, tends to make a rough estimate of the situation of citizens, companies and public administrations in order to identify the features of each Country involved in the project to understand dimensions and background of state of the automation in PA.*

*The second section focuses in particular on the regulatory and legal aspects that already exist or will help to create a list of legal changes on online services interoperability of each Country involved.*

*The third section focuses on the organizational aspects and the effects they have on PA structures and on the performance of the services provided. In addition, the goal is also to analyse the changes that have produced some valuable innovations.*

*The fourth section deals with the technological aspects, not only with the identification and exploitation of the best solutions in the field of innovation processes within the PA, but at the same serves to detect unsuccessful attempts, analysing the strengths and weaknesses of a given action taken in each case.*

*The final section includes a detailed description of a success example of a best practice and an in progress experiment of interoperability in each Country.*

# 1. STATISTICS ABOUT GREECE

## 1.1. COUNTRY

Name of the Country

Greece

Others information

The first Greek Government's strategic approach to eGovernment was laid down in the White Paper Greece in the Information Society: Strategies and Actions, which was published in February 1999 and updated in 2002. The white paper places great emphasis on raising the quality of public services to ensure social cohesion and contribute to economic objectives in terms of living standards. The Greek eGovernment strategy advocates that electronic services should be characterised by ubiquity, uniqueness of reference (i.e. single point of service), dematerialisation, quality and cost effectiveness. e-Services are seen as essential business infrastructures that should only be planned and deployed as such. Key methodological steps for developing and implementing them include:

- identifying critical areas of service;
- determining business priorities and critical success factors;
- identifying business partners and building consensus; and,
- determining the scope of a pilot application.

## 1.2. POPULATION

Population

| Total | Men | Women |
|---|---|---|
| 10.787.690 | 5.303.690 (49,2%) | 5.484.000 (50,8%) |

Other information

Information Society Indicators

- percentage of households having internet access at home: 46,40 % (2010, according to the Hellenic Statistical Authority – ELSTAT);
- percentage of households with a broadband connection: 41 % (2010, according to the Hellenic Statistical Authority – ELSTAT);

Internet access and use in 2011 according to Eurostat, reference period: first quarter of 2011

- percentage of internet users having used internet in the last 12 months for obtaining information from websites of public authorities: 42%;
- percentage of internet users having used internet in the last 12 months for submitting completed official forms to public authorities: 24%;
- percentage of internet users having used internet in the last 12 months for ordering goods or services for private use: 33%.

## 1.3. PUBLIC ADMINISTRATIONS

Estimate of public organizations on the national territory

Greece, officially called the Hellenic Republic, is a Parliamentary Democracy, established in December 1974 following the abolition of Monarchy by referendum.

Legislative Power is held by a unicameral Hellenic Parliament. Its 300 members are elected by means of a direct, universal, secret and compulsory ballot, which is cast by citizens with a legal right to vote.

Executive power is exercised by the President of the Republic and the Government. The President of the Republic, who is the Head of State, is elected every five years by the Parliament. Executive power thus mostly lies with the Government, headed by the Prime Minister. The Government consists of the cabinet, which is made up of the prime minister and the ministers (15 Ministries) , alternate ministers, and deputy ministers.

The administration of the Greek state is organised on the basis of the principle of decentralisation. According to the recent Kallikratis administrative reform of 2010, the Greek administrative organization comprises 7 decentralised administrations, 13 peripheries (regions), and 325 municipalities. The peripheries and municipalities are fully self-governed, responsible for the administration of all local matters.

Employees' distribution in the public sector: 768.009 (according to the census made in July 2010)

| Sex | Number of employees | Percentage |
|---|---|---|
| Male | 412.859 | 54% |
| Female | 355.150 | 46% |

Comments

- President of Hellenic Republic: http://www.presidency.gr/
- Prime Minister's office: http://www.primeminister.gov.gr

Ministries:

- Ministry of Interior, http://www.ypes.gr
- Ministry of Finance, http://www.minfin.gr/portal/en
- Ministry of Foreign Affairs, http://www1.mfa.gr/en
- Ministry of Administrative Reform and E-Governance, http://www.ydmed.gov.gr
- Ministry of National Defence, http://www.mod.mil.gr/
- Ministry for Development, Competitiveness and Shipping, http://www.mindev.gov.gr/
- Ministry of Environment, Energy and Climate Change, http://www.ypeka.gr/
- Ministry of Education, Lifelong Learning and Religious Affairs, http://www.minedu.gov.gr/
- Ministry of Infrastructure, Transport and Networks, http://www.yme.gr/index.php
- Ministry of Labour and Social Security, http://www.ypakp.gr/
- Ministry of Health and Social Solidarity, http://www.yyka.gov.gr/
- Ministry of Rural Development and Food, http://www.minagric.gr
- Ministry of Justice, http://www.ministryofjustice.gr/
- Ministry of Citizen Protection, http://www.minocp.gov.gr
- Ministry of Culture and Tourism, http://www.yppo.gr/0/gindex.jsp

## 1.4. COMPANIES

Estimation of the firms in the Country

| Type of companies | Number of firms | Percentage |
|---|---|---|
| Micro (0 – 9) | 820.021 | 96,49 |
| Small (10 – 49) | 25.789 | 3,03 |
| Medium (50 – 249) | 3.579 | 0,42 |
| SMEs | 849.389 | 99,94 |
| Large (250 +) | 431 | 0,06 |

Percentage of companies listed on the web

Internet access and use of ICT in enterprises in 2011 according to Eurostat:

- 93% of enterprises have Internet access while 76% of enterprises have fixed broadband connection;
- the share of enterprises having mobile broadband connections to the internet grew in Greece from 6% to 38%, from 2010 to 2011;
- 64% of enterprises in Greece have a website while 14% of the enterprises have a website with online ordering/ booking/reservation facility;
- with regard to eGovernment and the interaction with public authorities, 82% of enterprises obtain information from public authorities' websites and 87% of enterprises submit completed forms electronically.

# 2. REGULATORY AND LEGAL FRAMEWORK

## 2.1. LEGISLATION - ESSENTIAL ELEMENTS

- Law 3979 on eGovernment, adopted by the Greek Parliament (on 24 May 2011). The Law on eGovernment constitutes the institutional framework for the organisation and simplification of the relationship between the government and citizens/businesses through ICT [1];
- Article 27 of the Law 3731/2008 regulating the Greek eGovernment Interoperability Framework (eGIF) [2];
- Law 3431/2006 on Electronic Communications and other Provisions (2006) [3];
- eSignatures Legislation - Presidential Decree 150/2001 on electronic signatures and advanced electronic signatures [4];
- eCommerce Legislation - Presidential Decree 131/2003 on eCommerce [Government Gazette (FEK) A 116/16-5-2003];
- Law 2472/1997 on the Protection of Individuals with regard to the Processing of Personal Data (1997)[5];
- Law 3471/2006 was adopted on 28/06/2006, revising Law 2472/1997 on the Protection of Personal Data and Private Life with regard to Electronic Telecommunications (2006)[6];
- Law 3674/2008 on Strengthening the Institutional Framework to Safeguard Privacy of Telephone Communications (2008)[7];
- eProcurement Legislation - Presidential Decree 118/2007 on the Regulation of Public Procurement[8];
- eProcurement Legislation - Presidential Decree 60/2007 on the coordination of procedures for the award of public works contracts[9];

## 2.2. LEGISLATION - A BRIEF DESCRIPTION

Law 3979 on eGovernment creates a general framework for eGovernment in public administration by: defining concepts; setting forth the basic principles; specifying the obligations of public sector bodies for the use and exploitation of new technologies; giving rights to citizens in relation to the processing of personal data and ICT use; regulating issues regarding the storage and transmission of electronic copies, files and protocols and; examining issues related to the authentication of user services.

The Act lays particular emphasis on:

- electronic communication and data exchange between natural/legal entities and the public sector;
- public sector information and the method to be useful in facilitating citizens and businesses;
- the capacity of institutions in taking initiatives in a specific context to facilitate natural/legal entities;
- issues regarding personal data protection and privacy;
- matters such as electronic payments and the automatic search request for files and documents etc;
- open access to public data.

The Greek eGovernment Interoperability Framework is institutionalized based on the Greek State Law (Article 27, Law 3731/2008, 263/23-12-2008) in December 2008. This framework is part of the overall design of the Greek Public Administration aiming to provide eGovernment services to enterprises and citizens. It is the cornerstone of the Digital Strategy for the period 2006-2013. At the same period the Service of Information Development of the General Secretariat of Public Administration and Electronic Government, Ministry of Interior has been made in charge of the operation of the framework and the coordination of the stakeholders.

Law 3431/2006 sets out the broad framework for the provision of electronic communications networks and services in Greece, while at the same time applies full transposition of EU regulations 2002/19/EC, 2002/20/EC, 2002/21/EC, 2002/22/EC and 2002/77/EC to the National Law.

The basic principles of this Law are as follows:

- the free provision of networks and services for eCommunications;
- the insurance to every company of the right to operate and provide services of eCommunications;
- the compliance with the principles of equality, impartiality, transparency, proportionality, protection of competition and avoidance of market distortion by ensuring, as far as possible, technological neutrality of the regulations imposed, especially for those targeting to ensure effective competition;
- the promotion of competition in network supply and/or electronic communications services.

Presidential Decree 150/2001 came into effect on 25 June 2001 and implements the European Directive 1999/93/EC of 13 December 1999 on a Community framework for electronic signatures. It defines electronic signatures and advanced electronic signatures. It also deals with the legal consequences of electronic signatures, liability of suppliers of certification, obligation to protect personal information, terms in effect for recognised certificates and suppliers, assurance of the liability of the creation of a signature and recommendations for the verification of the signature.

Presidential Decree 131/2003 on eCommerce was adopted on 16 May 2003. This presidential decree transposes the Directive 2000/31 of the European Parliament and the Council on certain legal aspects of information society services, in particular electronic commerce, in the Internal Market (Directive on electronic commerce).

Law 2472/1997 on the Protection of Individuals with regard to the Processing of Personal Data was adopted in April 1997. It establishes the terms and conditions under which the processing of personal data is to be carried out so as to protect the fundamental rights and freedoms of natural persons and in particular their right to privacy. It also allows any person to obtain their personal information held by government departments or private entities. The law is enforced by the Hellenic Data Protection Authority. It is complemented by Law 2774/1999 on the Protection of Personal Data in Telecommunications, and by Law 3115/2003 that establishes the Hellenic Authority for the Information and Communication Security and Privacy in order to protect the secrecy of mailing, the free correspondence or communication in any possible way, as well as the security of networks.

Law 3471/2006 intending to the enactment of preconditions with regard to the personal data processing and for the assurance of the confidentiality in telecommunications.

Law 3674/2008 sets out the obligations of the service provider for the security of telephone services. According to these provisions, the provider is responsible for security matters under the supervision of premises, facilities, connections and hardware systems and software. To this end the provider has an obligation to take appropriate technical and organisational measures and to use hardware and software that ensure the confidentiality of communications and the detection of breach, or attempted breach, of confidentiality of communications.

Presidential Decree 118/2007 on the Regulation of Public Procurement, simplifies the public procurement procedures, broadens participation to public sector competitions and introduces increased penalties in case of non compliance to the specific competition terms and conditions. The new decree partially revises the existing legislation in this area while at the same time still maintains a major part of it.

Presidential decree 60/2007, of 16/3/2007, implements into national law the Directive 2004/18/EC of the European Parliament and of the Council of 31 March 2004 on the coordination of procedures for the award of public works contracts, public supply contracts and public service contracts [10].

## 2.3. SUBJECTS INDICATED OR INVOLVED

Organization 1: Ministry of Administrative Reform and eGovernment (Policy / Strategy / Coordination Actor)

The Ministry is the ultimate initiator of eGovernment strategies and policies aiming to develop IT in the public sector. In addition, it shapes the institutional framework and sets the guidelines for the structure and proper functioning of all public services that are dedicated to serving society, in relation to IT. Furthermore, the Ministry is responsible to conduct studies and develop projects related to eGovernment.

The Ministry is responsible for the organisation and operation of the public sector. Thus, it coordinates public sector bodies on issues such as the modernisation of the organisational structure, the overall policy agenda and the development of IT. In addition, the Ministry supervises the National Centre for Public Administration, Information Society SA and, the Observatory for Digital Greece.

http://www.ydmed.gov.gr

Organization 2: Computerisation Department (Policy / Strategy / Coordination / Implementation Actor)

The Department is responsible to define and shape the framework for delivery of eGovernment services and in particular the standards, rules and basic concepts relating to the design, development, maintenance and operation of web sites and information systems of public administration. Furthermore, it streamlines relevant training programmes, depending on the needs of the public sector.

The Department coordinates all IT and eGovernment activities across the board of the public sector. In more detail, it is responsible to coordinate and promote all relevant government departments, and to provide information services and electronic transactions via the Central Web Portals of the Public Administration. Furthermore, it coordinates and monitors the operation of horizontal projects of the Ministry of Interior to support the development and delivery of complete eGovernment services.

The Department is a catalyst in the process of modernisation and digitalisation of the Greek public administration. One of its primary aims is to horizontally implement government policy both for the introduction and development of Information and Communications Technology (ICT) in the public sector. It furthermore oversees the implementation of eGovernment activities of all public bodies and authorities.
http://www.yap.gov.gr/

Organization 3: IT and Communications Committee (Policy / Strategy / Coordination / Implementation Actor)

The Committee was founded in 2011 and its main responsibility is to prepare and submit the Digital Agenda to the Prime Minister for approval. The Digital Agenda is a national Strategic Plan, which includes among other programmes, the national programmes for Broadband Services, Digital Convergence and eGovernance aiming at the development of Information and Communications Technologies (ICT) in general and particularly in the public sector.

The Committee is responsible for the implementation of the institutional framework governing the development of IT and electronic communications both for private actors and public administration. It recommends improvements, operational and organisational restructuring for operators and services of the public sector, including ministries, for the most effective promotion of government work in the field of eGovernment. Furthermore, it establishes management teams to oversee, monitor and promote the implementation of relevant projects.

http://et.diavgeia.gov.gr/f/primeminister/ada/4%CE%91%CE%98%CE%95%CE%98%CE%A9%CE%A0-%CE%94

Organization 4: Observatory for Digital Greece (Policy / Strategy Actor)

The Observatory aims at conducting relevant studies and contributing to the policy formulation processes to the Greek Government and any other party interested.

The mission of the Observatory for the Greek information society is twofold: First, to measure and evaluate the national progress made towards the Information Society and second, to contribute to the accomplishment of information society's strategic goals on a national level. For example, the Observatory transfers and diffuses best practices and assists the exchange of experience, technical expertise and information among agencies in Greece and abroad. Finally, it supports the work of the Greek IT and Communications Committee or the body responsible for the national ICT strategy.
http://www.observatory.gr

Organization 5: Special Secretariat of Public Administration Reform (Coordination Actor)

The Special Secretariat of Public Administration Reform, of the Ministry of Administrative Reform and eGovernment, became operational in February 2008. Through the coordination of a series of projects with effect to all the Prefectures and sectors of the Greek Public Administration, the new Secretariat will aim at the acceleration of the government's reform plan.
http://www.epdm.gr

Organization 6: Special Secretariat for Digital Planning (Implementation Actor)

The Special Secretariat for Digital Planning is responsible for implementing the Operational Programmes 'Digital Convergence' and 'Information Society', and promoting IT and digital technologies in all areas of economic and social activity in the country and the Public Administration.
http://digitalplan.gov.gr/portal

Organization 7: Information Society S.A. (Implementation Actor)

This state-owned company is intended to be the main government agency implementing projects related to information technology, communications, eGovernment and administrative reform. This will be achieved by merging the company with other institutions that maintained activities in the relevant field. The company, created in 2001, also supported the implementation of the Operational Programme for the Information Society (OPIS), and the new Operational Programmes 'Digital Convergence' and 'Public Administration Reform'.

The Information Society S.A. supports government departments and agencies in all stages of ICT project design, implementation and follow-up.

http://www.ktpae.gr

## 2.4. MAIN INSTRUMENTS ACTIVATED AND/OR USED

Tool 1: Ermis (National Portal of Public Administration)

'Ermis' is the Governmental Portal of Public Administration aiming to inform citizens and businesses, and ensure the safe use of eGovernment services through digital certificates established and operated for the first time. The portal provides, from a central point, completed briefing to the citizens and the enterprises with regard to all their transactions with the Public Administration (natural or electronic).

Ermis functions as an electronic shop of the Public Administration running in three key areas:

- provision of information: It reliably informs citizens and businesses on their transactions and interactions with the state apparatus;
- interoperability: The portal provides the necessary infrastructure to fully support interoperability between information systems of public administration;
- security of transactions: Ermis provides secure eGovernment services at every level with the use of modulated digital authentication methods.

http://www.ermis.gov.gr

Tool 2: Opengov.gr

'Opengov.gr' is a portal dedicated to respond to citizens' needs for information, merit and participation in shaping decisions. It offers the maximum possible publicity in all activities of government policy-making and administrative chain, aiming at creating good practices that will be introduced as ways of governance. The portal is designed to serve the principles of transparency, deliberation, collaboration and accountability and includes three initiatives:

- open calls for the recruitment of public administration officials. Top level and mid-level openings in the public sector are available on the Internet. Applications are submitted online using a platform available on the opengov.gr website;
- electronic deliberation. Almost every piece of draft legislation or even policy initiative by the government, is posted in a blog like platform prior to its submission to parliament. Citizens and organisations can post their comments, suggestions and criticisms article-by-article;
- labs OpenGov. An open innovation initiative that brings together ideas and proposals from citizens, the public and the private sectors. http://labs.opengov.gr/ attempts to release the

power of decentralised knowledge and explore new ways to tackle modern public administration problems.

http://www.opengov.gr/home/

Tool 3: The Citizen Service Centres (KEP) and their online platform (eKEP)

The 'Citizen Service Centres' (or 'KEP' in Greek transliteration) are the administrative one-stop service centres, where citizens can have access to public service information and to over 1 000 standardised administrative procedures. The network of the 'KEP' is also supported by an online platform - 'eKEP'. The Citizen Service Centres are linked together by an IP network and use the 'eKEP' platform to file and manage citizens' requests, create a relevant eDirectory, electronically register 'KEP' mail, and monitor the requests' progress all the way through settlement. Accessible through the one-stop service centres across the country or through the Internet, the eKEP platform supports the use of certified digital signatures, enabling real time on-line transactions between Public Administrations.

The service is complemented by a 24/7/52 administrative information call centre (four-digit 1500 telephone service), where citizens and enterprises can request and obtain a large amount of different certificates. The Citizen Service Centre Internet portal receives over 9 million visits each month. More than 60 000 citizens visit the Citizen Service Centres every day for their transactions with the Government, while since March 2007, Greek enterprises are also capable of making their transactions with the 59 Chambers of the country more quickly and easily, through the Citizens Service Centres.

http://www.kep.gov.gr

Tool 4: Startup Greece

The portal 'Startup Greece', an information, networking and collaboration space aimed at creating a new generation of entrepreneurs in Greece was launched in April 2011. It is supported by the Ministry of Development, Competitiveness and Shipping and the Greek Government in collaboration with communities of young entrepreneurs. 'Startup Greece' is a 'no stop shop' aimed at inspiring young people to believe in their own ideas, to cultivate novelty and innovation, to start their own business.

http://www.startupgreece.gov.gr

Tool 5: E-Themis Online Legislation portal

The E-Themis online legislation portal has been realised within the framework of a project regarding the 'Design and Implementation of a System for Automating the Administration, Archiving and Dissemination of Legislation to the Broader Public'. This project was initiated in December 2006 with a budget of € 2.3 million and was carried out by the Information Society S.A. The E-Themis portal, which was introduced in November 2008, is aimed at providing online access to the complete Greek legislation (including laws, decrees and regulative decisions as published in the Official Government Gazette) since the establishment of the Greek State. This service is offered free of charge, while the content of the portal is regularly updated.

Within the portal, the legislation is clearly structured around a total of 40 thematic areas and fields of interest, which are particularly tailored to meet the needs of different categories of users, including citizens, enterprises and layers. In addition, a keyword based search facility allows users to easily locate the desired legal information. The service is complemented by a telephone-hotline for the provision of support.

http://www.e-themis.gov.gr/Portal/default.aspx?page=home

Tool 6: TAXISnet - TAXation Information System Network

TAXISnet is in operation since 2000 and provides services to citizens, enterprises and corporate tax-payers, including electronic submission of VAT forms and payment of VAT via banking system services, electronic submission of income tax forms, personalized electronic notification of the results of the tax return clearance process, and the electronic issuing of certificates by fax.

www.taxisnet.gr

Tool 7: Geodata

The website is the first national attempt to make available free geospatial data of the wider Civil Service to all citizens.

Geodata.gov.gr is a catalogue and web mapping framework providing open geospatial data to citizens. The service was designed, developed, and maintained by public bodies, and is built exclusively on open source technologies and standards. Geodata.gov.gr is currently one of eleven governmental services worldwide providing open data to citizens. Operating for less than nine months, geodata.gov.gr has succeeded in providing savings of more than 15M euros for the public administration (data re-use), and has aided hundreds of SMEs, engineers, and researchers in their work.

The service aims to achieve economies of scale for geospatial data through data re-use, enhance the repurpose and efficient exploitation of government owned infrastructures through virtualization technologies, and improve environmental protection. Geodata.gov.gr promotes the national and European agenda towards open Public Sector Information (PSI) in the framework of Digital Europe / Digital Greece 2020.

http://www.geodata.gov.gr

Tool 8: Manpower Employment Organisation (OAED) Portal

The Information Technology infrastructure of OAED consists of six separate subsystems whose key goals are to:

- provide faster service to citizens;
- reduce bureaucracy;
- minimise the amount of time spent on administrative duties;
- ensure safety of data and transactions;
- tackle abusive practices;
- rationalise and reduce unnecessary operating expenditure.

The strategy of OAED aims to fully implement eGovernment services by adopting low-cost modern technologies (open source) and by creating economies of scale, namely the development of a centralised system for an installation that would require limited equipment and would minimise maintenance costs/support.

The eGovernment and financial management information systems of OAED, as well as their objectives and future objectives are as follows:

Management Information System: The total record of transactions between citizens and OAED is stored in a single form, whereas applications can be submitted electronically. The system, combined with the financial management system, performs over 5 million transactions per year in a completely secure, transparent and accountable manner. The time required to complete administrative operations has been reduced from more than 60 days to 3-5 days. Similarly, the number of documents requested by citizens has decreased, since the majority can be drawn electronically. At the same time, applications for participation in programmes and the points awarded to the candidates can be performed strictly by electronic means. The electronic issuance of unemployment certificates was activated along with the launch of the updated OAED portal on 1 September 2012.

Financial Management Information Systems, electronic procurement and materials management: The system covers the most innovative and efficient processes for electronic procurement (eProcurement), for materials and financial management for all OAED departments. All financial management functions are performed in real time for all of OAED services, covering the entire management of both national and EU funds; this also results in monitoring the budget execution in real time. OAED is a pioneer among other public bodies in the electronic management of procurement centres and the economic cost of all of its units. The system has an integrated platform of electronic procedures which covers the entire procurement procedure, thus helping to reduce and rationalise expenditure overall.

Upgrading the OAED portal: The main purpose of the portal is to become a platform for interactive communication and interaction with working and non-working individuals and businesses. It will also enable labour supply and demand online, as well as to enter job seekers' resumes and job vacancies from employers, without the involvement of the OAED Employment Promotion Centres and the physical presence of the interested parties. Specifically, the new web application for online matching of labour supply and demand is expected to:

- provide a flexible, user-friendly real-time job search and workforce tool;
- partially relieve the work of consultants who are involved with labour supply and demand, as well as Curriculum Vitae and vacancy entry;
- provide services to non-registered users, people who do not visit the Centres for Employment Promotion, or who are employees that wish to improve their work position.

In addition, the portal provides individuals with the opportunity to submit electronic applications for employment policy programmes and training, thus ensuring transparency in the outcome of the results, eliminating inconvenience for citizens and businesses, while also reducing the workload of public services.

http://www.oaed.gr

## 2.5. NATIONAL INTEROPERABILITY FRAMEWORK

The Greek eGovernment Interoperability Framework (eGIF) (http://www.e-gif.gov.gr/ ) defines standards, specifications and rules for the development and deployment of web-based front and back office systems for the Greek Public Administration, at National and Local level, which will accelerate the development of electronic collaboration of public agencies, for the delivery of high quality and secure one-stop eGovernment services to businesses, citizens and other public bodies.

The eGIF consists of the following:

- The Certification Framework for Public Administration web sites and portals, which specifies the directions and standards which must be followed during the developing of public web sites for the Greek Public Administration;
- The Interoperability and Electronic Services Provisioning Framework between information systems and e-Government transaction services of public administration, which involves the technical specifications, the standards, that should be used during the development of eGovernment systems;
- The Digital Authentication Framework, which sets the standards, the procedures and the technologies required for the registration, identification and authentication of the users (Citizens / Enterprises);
- The Documentation Model for Public Administration Processes and Data which has to do with the development of metadata standards and XML schemas.

The Greek eGIF has been regulated in the Greek Legal system with the article 27 of the Law 3731/2008. The Hellenic Ministry of Interior, Decentralization and eGovernment is responsible for the maintenance of Greek eGIF in co-operation with the public agencies in Greece. The Greek eGIF also provides several xml schemas, core components, codelists according to the UN/CEFACT/CCTS, in order to describe the documents and the data that the Greek public administration exchanges.

The results of the Greek eGIF regarding e-services, responsilbilities, processes, documents, data, xml schemas, core components, codelists etc, are stored in the interoperability registry hosted by the Public Administration National Portal "Ermis" www.ermis.gov.gr.

## 2.6. EGOVERNMENT ROADMAP, COUPLED WITH GOALS, VISION AND STRATEGY

The eGovernment RoadMap is an Action Plan (http://www.egovplan.gr ), supported by the Ministry of Administrative Reform and eGovernment, whose aim is to effectively implement the Greek eGovernment Act. The main axes of the RoadMap are as follows:

- It captures best practices from Greece and abroad that can be effectively used in the proposed design;
- based on past studies, it presents the existing information systems of public administration;

- It specifies the required horizontal actions to facilitate the Act's implementation. These actions are related to the utilisation of existing infrastructure, the national registries, new horizontal applications and other activities to bridge the digital divide;
- It proposes the methodology for development and delivery of services to citizens and businesses and the strategic application of the eGovernment Act;
- It prescribes the organisational model for supporting and monitoring the implementation of the Act;
- It specifies the sources and the ways of funding where necessary.

Strategy

A/ Operational Programme 'Digital Convergence' (2007-2013)

The Operational Programme 'Digital Convergence' specifies strategy and actions aimed at the efficient utilisation of Information and Communication Technologies (ICT) in the period 2007-2013. This operational programme has already passed since 2008 to its second phase of materialisation and it has been developed in compliance with relevant national and international strategies, taking especially into consideration particular strategic decisions, as described in the Greek 'Digital Strategy 2006-2013' (http://www.digitalplan.gov.gr/portal/).

Based upon a comprehensive analysis of the country's weaknesses and strengths in this field, the programme focuses on the following objectives:

- to improve digital/online services to enterprises and re-engineering of relevant public administration processes;
- to promote Internet and ICT usage by enterprises;
- to increase the overall ICT contribution to the Greek economy;
- to improve quality of daily life through ICT;
- to develop digital/online services for citizens.
- the programme has a strong regional character, as major part of the described actions and interventions concern all 13 regions of Greece.

B/ Operational Programme 'Public Administration Reform' (2007-2013)

The Operational Programme 'Public Administration Reform' (http://www.epdm.gr/) for the period 2007-2013 specifies strategy and actions aiming at the upgrade of the institutional environment of Public Administration and the rationalisation of existing administrative structures on the basis of fighting against red tape, simplifying and speeding up the administrative procedures and the general reorganisation of public sector, the regional administration and the local government.

This strategic approach, according to the orientation of the European Social Fund for reinforcing administrative efficiency and the demands of the revised Lisbon Strategy, is the core of the developmental vision of the current operational programme, which is pursuing:

- limitation of weaknesses of administrative action and levying of any barriers that have not permitted until today the Public Administration and the Local Government to respond to current challenges and the developmental needs of the country;
- enactment of a series of necessary reforms on HRD policies, the institutional framework, organisation and operation of public services and the services of regional administration, the local government authorities, as well as, in the procedure of policy making and undertaking initiatives on the basis of providing quality services to citizens and businesses.

The strategic objective of the operational programme is to improve the quality of governance by means of supporting efficiency and effectiveness of public organisations, as well as support accountability and public administration ethics, via a broader social consultation and participation of the social partners.

The strategic objective is further specialised in four (4) general objectives, on the basis of which the OP is structured in axes:

- General objective I: Enhancement of public policies quality through the modernisation of the regulatory framework and the reform of structures and procedures;
- General objective II: Development of human resources in Public Administration;
- General objective III: Reinforcement of gender equality policies in the whole range of public action;
- General objective IV: Technical assistance and implementation support

# 3. ORGANIZATIONAL ASPECTS

## 3.1. ORGANIZATIONAL ADVANTAGES OF ONLINE SERVICES INTEROPERABILITY – FOCUS ON PA VS CITIZENS-BUSINESS RELATIONSHIP

Transparency

The Greek government has recognized the critical factor of transparency, accountability and citizen engagement to enable the transition to a new public administration model that is looking for new ways to continuously improve the services provided to citizens. The government has introduced a set of open government initiatives aiming to introduce significant levels of transparency, accountability and citizen engagement within all levels of the Greek public administration and to establish a new "social contract" between the citizen and the state.

Having access to eGoverment services (gates, websites, smart cards, special planned services etc), through new ICTs, means that there is a plethora of opportunities for transformation of the ways that services are offered to citizens. eGoverment provides the opportunity of developing a new relationship between the government and the citizens, based on trust and participation of the civilians, raising transparency and narrowing corruption.

To this end, in March 2005, the 3-year programme 'POLITEIA 2005-2007' for the 're-establishment of Public Administration' was launched. The objectives of the programme are to better serve all citizens by focusing on their real needs, increasing transparency in public administration, implementing eGovernment in all administrative levels, restructuring agencies and processes, protecting citizen's privacy and consolidating the Rule of Law.

Moreover, the portal 'Opengov.gr' (http://www.opengov.gr) is dedicated to respond to citizens' needs for information, merit and participation in shaping decisions. It offers the maximum possible publicity in all activities of government policy-making and administrative chain, aiming at creating good practices that will be introduced as ways of governance. The portal is designed to serve the principles of transparency, deliberation and collaboration.

Di@vgeia («Cl@rity») program (http://diavgeia.gov.gr) implements one of the major transparency initiatives of the Greek government. Beginning October 1st, 2010, all government institutions are obliged to upload their decisions on the Internet. Further, the decisions of all public entities can not

be implemented if they are not uploaded on the Di@vgeia website. Each uploaded document is digitally signed and assigned a transaction unique number (TUN) automatically by the system.

So far all public legal entities have implemented the Di@vgeia program, including independent and regulatory authorities, the State Legal Council as well as local government. In less than a year 1.409.703 decisions have been published in Di@vgeia by 2.441 institutions. For the first time in Greece the Di@vgeia program introduces the obligation to publish all the decisions of government and administrative entities on the Internet, with special attention to issues of national security and sensitive personal data. It is an innovative program, aiming primarily to ensure the maximum publicity of government policy and administrative actions. The use of the Internet meets the requirement for wide publicity and access to information, progressively contributing to a culture change in the whole Public Administration.

The implementation of the Di@vgeia program contributes substantially to the creation of a more transparent relationship between the citizen and the State. Through this program citizens are able to exercise fully their constitutional rights, such as the right to information and to participation in the Information Society. At the same time, the compulsory uploading of all decisions by legal entities exercising public authority on the Internet leads to the reinforcement of responsibility and accountability. In short, the Di@vgeia program enacts the dissemination and re-use of Public Sector Information (PSI), providing the necessary tools for open and thorough access to it.

The following strengths can be identified with regard to the improved relationship between public administration and citizens:

- meet the regular and routine demands of the general public;
- servicing particular needs of individuals and groups;
- increase citizen participation thereby induce democratic governance;
- reduce opportunities for corruption and promote transparency;
- IT-proficient people can have better opportunity for employment;
- reengineer administration processes thereby improve efficiency;
- reduction of citizen's dependence from civil servants.

Monitoring of responsibilities

Main actors that define eGovernment priorities and actions are the Information Technology Committee and the Ministry of Administrative Reform and eGovernment (http://www.ydmed.gov.gr/ ) with its specific department for eGovernment, the General Secretariat for Public Administration and eGovernment (www.gspa.gr) Sector specific eGovernment projects can also be implemented by individual government bodies.

The Information Technology Committee was established in 2004 [11] and is operating as a common platform for planning and development of Information Technology [12]. Its task is to coordinate and monitor the initiatives of public institutions aiming to promote the use of new technologies and eGovernment. In particular, the Committee is responsible for developing Greece's Digital Strategy for the period 2006-2013, as well as for the coordination of the public institutions'actions and interventions concerning the use of new technologies and eGovernance.

The Ministry of the Interior, Public Administration and Decentralization is formally assigned with the responsibility for the development of eGovernment in Greece. Within the Ministry, the General Secretariat for Public Administration and eGovernment was established (by the amendment of the existing Secretariat for Public Administration) by Article 24 (1) of Law 3200/2003, with main responsibility to tackle eGovernment issues. The role of this body is central for the development of eGovernment in Greece.

Validation and better data management

Central Portal "Ermis": This citizen portal, known as Hermes, is the interface between users and ministerial departments. Its main purpose is to bring electronic services together providing a common interface between citizens and public sector, operating as a one-stop shop.

Assignment of the offered services to different Trust Levels: All electronic services offered through the Hermes Portal have been assigned to pre-determined levels of trust; these levels are understood as "The level of confidence at an end-user's electronic identity along with the assurance that the security measures and procedures deployed to safeguard the access, the processing and the transmission of data are adequate".

Per Sector Identifiers: The identification of the users wishing to utilize one of the Greek public sector services is accomplished through "per sector identifiers". These identifiers are given to each citizen the first time he/she requests to use a service (through the registration process) of a specific sector, identifying him/her uniquely within that specific sector.

The proposed framework enables secure storage and privacy compliant management of user data and documents, based on privacy preferences and the privacy policies of the corresponding Service Provider. The innovative feature of the proposed framework lays in its ability to utilize different user privacy preferences for each different piece of information. This segregation supports an improved and much more detailed comparison between Privacy Preferences and Privacy Policies, thus allowing a better data management.

Uniqueness of data processed

The Greek eGovernment strategy advocates that electronic services (e-services) should be characterized by ubiquity, uniqueness of reference (i.e. single point of service), de-materialisation, quality and cost-effectiveness.

Ermis (http://www.ermis.gov.gr) is the Greek national Governmental Portal for the Provision of Information and Secure e-Transactions to Citizens and Businesses. The aim of Ermis is to become the electronic single point of contact (one-stop shop) for government services.
Ermis is based on three axis:

- Content Provision;
- Interoperability of service;
- Authentication of citizens and businesses.

Ermis aims to serve as the electronic single point for the provision of government information. As such, the content of the portal has to be complete, accurate, consistent, and up to date so as to be a reliable and lawful source for all interested parties. Care should be taken of the following issues regarding content management:

- Creation. Not all of the content included in the portal is original. Recreating the original content that is already available on other sites is not an efficient approach. Still though the collected content has to be checked for its completeness and in some cases complemented;
- Exchange (primarily provision);
- Processing and homogenization;
- Characterization (based on metadata);
- Syndication and management;

- Delivery. It should provide multi-access capabilities based on the subject (life episodes and fine grained thematic categories) by different groups (business, citizens and special groups e.g. students, pensioners etc.;

Initially it has been verified that more than 250 authorities can provide content that can be of interest to the users of Ermis.

These authorities have been categorized based on the following criteria:

- the Content volume;
- the publics that are served by these authorities; niche publics are not excluded, but they are characterized as low priority publics;
- the frequency of content updating.

Important technical issues have been taken into consideration for the content provision from multiple sources. Manual, semi-automated and automated (web services, RSS) ways have been explored.

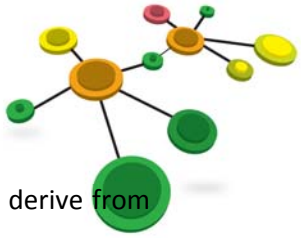
- content and metadata insertion on behalf of the third-party authorities, using forms;
- retrieval of content and metadata on behalf of the Ermis system, invoking the web services provided by the authorities;
- provision of content and metadata on behalf of the authorities invoking the web services provided by the authorities;

Ermis has thematically organized all service and content areas. This organization is based on three criteria:

- the Government Category List (GCL);
- the users;
- the government authorities;
- this way a set of metadata has been created that support the – to a certain degree – automatic categorization of new content;
- all ways of content provisioning (from the manual to the automated) enforce the usage of metadata;
- all tasks are supported by a well defined workflow engine.

<u>Administrative load reduction (time savings)</u>

The 'Governance in the Age of Web 2.0' study, conducted by the Observatory of the Greek Information Society, demonstrates the Greeks' positive feedback towards the use of eGovernment services.



According to the study, the Greek Internet users recognise the significant benefits that derive from the use of eGovernment services. More precisely, they seem to appreciate: the fact that there are no restrictions in the operating hours of the electronic services (83.6 %), the time and cost-efficiency of the eServices' use (82.1 %), the decrease of face-to-face transactions (70.9 %), the fast response to citizens' requests (61.2 %), the cost savings for the public administration per se (56.6 %), the reduction of paper use (55.6 %) and the greater transparency in government services (45.9 %). [13] www.observatory.gr

Administrative load reduction (Costs savings)

The main comparative advantages of TAXISnet (www.taxisnet.gr) project, with respect to internal IT support for paper-based transactions, include:

- elimination of paper work and physical transport;
- continuous service availability, reduced response time and a substantial decrease of errors, and
- Open API specifications for integration of TAXISnet service calls into third-party commercial software products (office automation packages, ERP systems etc.).

A key issue in the deployment of TAXISnet services has been the minimization of additional technical know-how and economic investments required on behalf of end-users; since nearly all TAXISnet applications run server-side, only an Internet-enabled computer and a browser (most probably already available to end-users) are needed to access the full range of TAXISnet services.

Without taking into account any increase in the current number of registered users, and considering the transactions that are expected during a 1-year period, the net gain in productive time that arises from the electronic implementation of these transactions amounts to about 3,600 person-months, which is equivalent to personnel cost reduction of about 3.6 Meuros (considering a minimum salary of 1,000 euros). From these figures it follows that there is a yearly net reduction in operational costs of about 3.2 Meuros, which far exceeds the size of the initial 600,000 euros investment.

Better accessibility to online services

ERMIS, the National Portal of Public Administration (May 2009), encompassing the most modern technological infrastructure for ensuring interoperability between the computer systems of public services as well as secure transaction of public information through digital certificates, and providing 100 online services - organized in various ways to facilitate the navigation for the citizens - and 11

complete transactions (http://www.ermis.gov.gr ). ERMIS Interoperability Infrastructure and Portal is linked to all Citizen Service Centres, and offers one-stop, automated, interoperable digital services delivery for citizens and businesses.

ERMIS offers:

- a systematic, collaborative toolset to manage service transformation, from paper-based to electronic, already populated with a substantial set of information on services and documents;
- a set of guidelines and standards for managing portal creation and operation, back- office and front-office interoperability, eID management and service documentation – the main pillars of eGovernment;
- a centralised interoperability infrastructure that can be the delivery point of truly interoperable, one-stop, highly automated services while also federating on-line content from a variety of sources;
- an infrastructure for publishing available or needed Web Services on-line, so that service composition and mashing-up can be further promoted;
- digital services that can be delivered in one stop, in one second and at no extra cost. This is extremely important especially for services that span several organisations and thus take a lot of time during manual delivery;
- full on-line documentation of the whole spectrum of governmental services, the providing organisations and the legal framework, in four languages, with advanced semantic search mechanisms;
- a set of guidelines and standards for offering high-quality ICT services to the public sector, through the Greek National Interoperability Framework (for the ICT industry);
- the ERMIS Service Delivery Platform provides more than 100 highly sophisticated interoperable, cross-organisational digital services, in levels 3 and 4. More than 1,000 services currently exist at level 2. The most important services, provided at full-online availability, are the birth, citizenship, and family certificates;
- compound financial gains, including both the administration and the citizens cost, amount to 30 EUR per certificate issued, generating an annual gain of more than 10 million EUR.

The project “Access to eGovernment services for people with disabilities”

The project has been developed in the context of the Operational Programme "Information Society", Measure 2.2 "Government online". The web portal was developed by the "Access for the disabled to eGovernment services" project, which is co-funded by the European Social Fund (ESF) and the Hellenic Ministry of Interior. The aim is to offer to people with disabilities fully accessible online

services for eGovernment and to provide a fully accessible eGovernment portal. The project is linked strongly to the general implementation of eGovernment services in Greece via the network of Citizen Service Centres (CSCs - KEPs).

In addition to ensuring that disabled people have access to the same services provided to everyone else through CSCs (e.g. making the online channel accessible), the following online services are offered:

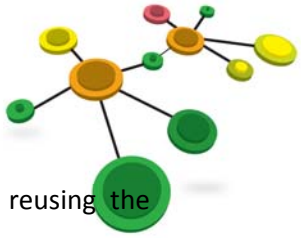
- an online job finding service for disabled people;
- a digital library of information and links on assistive technology products and services;
- a voice portal as an alternative channel for the online CSC;
- Access is through a dedicated web portal for disabled citizens (www.amea.gov.gr ), which provides a route into the CSC/KEP and host the other services mentioned. The portal also serves as a point of information exchange and dissemination.

Better accessibility to documents

Online access to the collections of the parliament's library is provided to the Greek and international scientific and educational community, as well as to anyone wishing to do a search via the online catalogue from the comfort of their homes. Through the http://catalog.parliament.gr portal, users can do a simple or a combined search in the printed and microfilms collections in order to find the literature they need and to stay informed about any new Greek or foreign-language titles available in the Greek Parliament's library.

At this stage, the content of 3 000 titles of newspapers and magazines from the 19th and mid-20th century is available online, allowing users to read pages of material published up to 1940. These are newspapers with a high circulation rate in major urban centres, as well as local and smaller-sized newspapers, which show aspects of the Greek society and the expatriate life. The library has digitised more than 15 000 microfilms (from a total collection of 21 000), which equal to 8 million digital documents and more than 3 000 rare manuscripts and publications.

The digitalisation of the Greek Parliament's Library collections has been implemented under the 'Documentation, Development and Dissemination of the Collections of the Greek Parliamentary Library' project, of the Operational Programme 'Information Society' (Third Community Support Framework).



Reusing of existing IT infrastructures, services and their monitoring

The integrated modelling approach of GENESIS (http://www.genesis-ist.eu) aims at reusing the existing elements of Universal Business Language (UBL) and Core Component Technical Specification (CCTS) as templates and the definition of new elements where neither UBL nor CCTS do provide sufficient support. Therefore the meta model must be able to depict the existing UBL templates in the modelling tool ADONIS14 and the definition of similar but new templates. Furthermore the meta model has to provide easy-to-use and easy-to understand modelling entities.

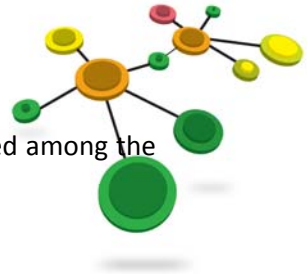
A main target of the integrated GENESIS modelling approach is to refrain from creating redundant information. The key element in terms of describing business information in the context of the GENESIS framework is the "Specific Business Document" (SBD), which serves as an entry point as well as a data repository. Even though the objects (re-)using the SBD may vary in context of the modelling stage it always references the same SBD.

A real world paradigm applying the GENESIS Modelling Methodology is built on Greek VAT Statement. It is one of the most critical documents exchanged between citizens and businesses and the State and appears in all countries of the European Union.

VAT Statement declaration in Greece takes place every 3 months. Citizens working as freelancers and businesses are obliged to submit their VAT Statement declaration and to pay or be credited the subsequent tax amount. The transaction can be fully automated with the use of TAXISnet (www.taxisnet.gr) or can take place directly in the authorized Tax Agencies in the jurisdiction of which the liable to tax person or business belongs. TAXISnet (the word stands for TAXation Information System) is a set of electronic services for taxation accessible through Internet to all citizens and enterprises. Its main services are: e-VAT, e-filling of VAT forms and VAT payment through Banking System, e-Income Tax service, e-filling of Income Tax Forms and the e-Income Tax-Assessment info service which provides personalized information for Income Tax Assessment.

Adhering to the aforementioned GENESIS modelling methodology, the fields of the VAT Statement were analyzed and categorized. In the next step the necessary Business Information Entities (BIEs) were identified and then the core components provided by the UBL common library which could be reused in the VAT Statement context were assembled and customized according to the particularities of the VAT Statement document in Greece and finally the specific business document was created. In the proposed approach, the type (Basic Information Entity – BBIE, Association Business Information Entity – ASBIE mapping to an Aggregate Business Information Entity – ABIE),

the name complemented with the data type, the occurrence and the context are placed among the crucial metadata for an information entity.



Homogeneity / compliance of online services' front-end provided by public organizations

ELGI
Learn to connect
Interoperability essentials

The Greek eGovernment interoperability Framework (Greek e-GIFJ defines standards, specifications and rules for the development and deployment of web-based front and back office systems for the Greek Public Administration. at National and Local level, which will accelerate the development of electronic collaboration of public agencies, for the delivery of high quality and secure one-stop eGovernment services to businesses, citizens and other public bodies.
http://www.e-gif.gov.gr/portal/page/portal/egif/

Rules and standards for the web sites of public administration relating to the design, the development and functioning of the web sites:

- the colors and color combinations used in the presentation of content and background of the website should be uniform across all the pages of the public administration web sites;
- the content of a public administration web site should be displayed with dark letters while the and background of the website should be light;
- web site visitors should be in position to change the fonts used in the presentation of the content according to the functionalities of the browser they are using;
- the images used in the web site should be the same and should function uniformly in all the pages of the web site;
- the size of images should be proportional to their intended use and their location. Images should be accompanied by descriptions, which will be used either as an additional way of describing the image or as an alternative way of presentation. The use of verbal description of an image from automatic narrative systems for visually impaired users should follow the instructions for accessibility on the Web Content;
- the names of links should be representative of the content to which the link leads. General descriptions such as "Please click here" should be avoided;
- if one link leads to another website it is recommended that this is obvious to the user;
- the websites of public administration should display the terms and conditions of use;
- the transition of the visitor from the start up page to the last one should not require more than three clicks on the vertical scrolling bar;

- the size of the homepage should not exceed 200KB;
- the size of the remaining pages should not exceed 250KB;
- the content of each site should:
  - be simple and understandable;
  - aim to serve the needs of visitors;
  - use simple expressions in Greek;
  - not include spelling, grammatical or syntactical errors;
  - be small in size;
  - be addressed at the broadest possible audience;
  - It is recommended that the content of the web site is structured into short paragraphs or chapters. Where the theme of the content is changed it is recommended to add short title, which reflects the content that follows, written in bold.
- formatting of the web site content should be developed by using Cascading Style Sheets (CSS);
- use of bold and italics should not be useless;
- use of underline should be avoided during the formatting and presentation of the content to prevent confusion with the links listed on the website;
- use of blinking text should be avoided. [15]

Some examples of public administration websites:

- Prime Minister's web site: http://www.primeminister.gov.gr/
- Government web site: http://government.gov.gr
- Ministry of Public Administration Reform and eGovernment: http://www.ydmed.gov.gr/
- Ministry of Interior: http://www.ypes.gr
- Ministry of Finance: http://www.minfin.gr
- Ministry of Foreign Affairs: http://www.mfa.gr/
- Ministry of National Defence: www.mod.mil.gr
- Ministry of Education, Religious Affairs, Culture and Sports: http://www.minedu.gov.gr/
- Ministry of Environment, Energy and Climate change: http://www.ypeka.gr/
- Ministry of Employment, Social Security and Care: http://www.ypakp.gr/
- Ministry of State: http://www.ypep.gr

<u>Capability to provide and manage online payment services by online outlays</u>

TAXISNet - TAXation Information System Network

Organization in charge of implementation and operation: General Secretariat of Information Systems (GSIS)- Agency of the Ministry of Economy and Finance.

The 'TAXISnet' service, introduced in May 2000 and now available through the website of the General Secretariat for Information Systems, provides services to individual and corporate taxpayers, including electronic submission of income tax forms, personalised online notification of the results of the tax return clearance process, electronic issuing of certificates by fax, electronic submission of VAT forms, and payment via banking system services. These services are available through the Internet at the GSIS and TAXISnet web sites (www.gsis.gov.gr and www.taxisnet.gr respectively).
With TAXISnet there is no longer any need to visit tax offices and wait for hours in line. An online help-desk and FAQs provide all the support that a user may need. TAXISnet offers:

- simplification of procedures;
- reduction of time and costs;
- easy access to forms;
- direct information.

Customer satisfaction, feedback analysis to identify or define better services

The Opengov.gr (http://opengov.gr )project was initiated by the Prime Minister's Office in October 2009 and has been designed to serve the principles of transparency, deliberation, collaboration and accountability. It includes, among two other initiatives, the Electronic deliberation for participatory rule making. The citizen needs for timely information as well as their participation into public affairs consist the central scope of the opengov project.

Electronic deliberation. Almost every piece of draft legislation or even governmental policy initiative by the government, are posted in a blog-like platform prior to their submission to parliament. Citizens and organisations can post their comments, suggestions and criticisms article-by-article. All submitted comments are gathered and assessed by competent authorities and in many cases they are incorporated in the final regulations. As of October 2009, when the first deliberation concerned the regulation of state owned cars launched, 153 deliberations have taken place via opengov by 14 ministries while the total number of citizens comments amounts to 67.929.

Citizens' collaboration and e-participation

Digital Greece 2020 Forum

The Forum Digital Greece 2020 (http://www.digitalgreece2020.gr ) is a horizontal action, based on the participation of active citizens from business, education, research and public administration in policy-making. It gives the opportunity to all interested parties to address policy proposals to the central and local government, representative organisations, as well as the academic-research community with regard to the initiatives that have to be taken and the targets that have to be set for Digital Greece 2020.

"Digital Greece 2020" is a permanent tool for consultation and formulation of policy proposals for the use of ICTs in critical sectors that will configure Digital Greece of 2020. Utilizing the quantitative and qualitative data on the penetration and application of new technologies in public administration, education, research and the productive process, the Forum is open to the participation of all bodies or citizens that use the Internet as a tool for information, communication and the production of digital content.

The organizational structure of the Forum includes the following:

- the Organizing Committee;
- the Strategy Committee;
- the Working Groups: The Working Groups in the Digital Greece 2020 Forum have been divided into 7 units:
    1. Interoperability, Free Software/Open Source Software (FS/OSS) and Open Content;
    2. Trust and Security on the Internet;
    3. Next Generation Access Networks;
    4. Public Administration and Society;
    5. Education, Research and Innovation;
    6. Digital Gap.

Labs.OpenGov (http://labs.opengov.gr) is the first Greek web laboratory for e-Governance. It is an action, held under the aegis of the Greek Ministry of Public Reform and eGovernment which aims to bring out creative ideas, inspire people and introduce innovation in the relations of citizens and businesses with the state. It has a dual presence, both physical and digital. In its physical form, Labs.OpenGov operates through open workshops that allow for the exchange of views and the synthesis of different proposals. In its digital form, the Forum operates through a platform where every citizen can submit proposals and participate in a virtual dialogue by using the most modern tools of networking.

Labs OpenGov action is organised in recurring thematic cycles. During each cycle, any citizen who visits Labs.OpenGov.gr can submit ideas and suggestions via an open call. Afterwards, the suggestions and ideas on the open calls are published on the platform enabling the rest users to comment or rate the proposals in a forum like rationale. The accumulated content is subject to moderation and part of it is presented in a public event.

The fifth thematic cycle that is currently in progress is devoted to proposals aiming to reduce the operational costs of public bodies and to improve administrative procedures relating to transactions between government and citizens or businesses.

Multi-channel PA services

The Citizen Service Centres (operational since 2002) provide an advanced multi-channel system for the delivery of public services, regardless of digital literacy level, social orientation or locality. Currently comprising 1036 CSCs, as the administrative one-stop public service delivery centres, where citizens can have access to public service information and to over 1000 standardised administrative procedures, also supported by "eKEP", an online platform, allowing to manage citizens' requests and monitor their progress, and supporting the use of certified digital signatures, to enable real time on-line transactions between Public Administrations (http://www.kep.gov.gr ). The Citizen Service Centres are to be gradually upgraded and renamed to Integrated Transaction Centres.

The service is complemented by a 24/7/52 administrative information call centre (four-digit 1500 telephone service), where citizens and enterprises can request and obtain a large amount of different certificates.

## 3.2. ORGANIZATIONAL ADVANTAGES OF INTEROPERABILITY OF ONLINE SERVICES – FOCUS ON PA VS PA RELATIONSHIP

Improved circulation / exchange / delivery of data and information between PA organizations

SYZEFXIS network (http://www.syzefxis.gov.gr ) is a project of Greek Ministry of Interior, Public Administration and Decentralisation.

The 'Syzefxis' National Public Administration Network is the main project for the provision of advanced, telecom and telematics services with a high added value to public sector agencies. These advanced services include access and communication by telephone (telephone conversation between operators), data (computer - Internet) and Video (video - tele). It covers the entire Greek territory, linking approx. 6 000 public sector agencies and bodies in 2010, and is the largest and most modern broadband network administration across Europe.

Through 'Syzefxis' the most modern practices and advanced services in telecommunications and the Internet are being made available to public bodies. The network ensures the infrastructure required to link the information systems, in order to develop and provide electronic services to citizens and businesses. At the same time it contributes to a drastic cost reduction of any telecommunications carrier and the Greek public sector in general. In July 2007, 'SYZEFXIS' became the fourth national network (following those of Belgium, Luxembourg and Spain) which has been connected to the modern European public administration network 's-TESTA' (Secure Trans European Services for Telematics between Administrations), the successor of the 'TESTA II' system.

The network provides:

- voice and data connectivity for the nodes;
- broadband internet services and E-mail;
- a website for each node supporting value added services, like directory services etc.,;
- public key infrastructure for the users;
- synchronous and asynchronous education;
- teleconferencing services;
- free telephony based on VoIP technology between all nodes.

The national public administration network 'SYZEFXIS' is complemented by the development of 'Metropolitan Area Networks' (optical rings) infrastructures in approximately 75 municipalities across Greece, and wireless networks in 120 cities and 20 smaller local associations of municipalities. The metropolitan networks link more than 3 000 points of public interest, such as educational institutions, public services, public hospitals, municipal libraries, museums; while their total length exceeds 700 km. This extensive broadband infrastructure development project in the Greek periphery (€ 210 million), financed by the Operational Programme for the Information Society (OPIS) was launched in February 2007 with simultaneous growth of broadband services.

Responsibility

Ministry of Administrative Reform and eGovernment

The Ministry is the ultimate initiator of eGovernment strategies and policies aiming to develop IT in the public sector. In addition, it shapes the institutional framework and sets the guidelines for the structure and proper functioning of all public services that are dedicated to serving society, in relation to IT. Furthermore, the Ministry is responsible to conduct studies and develop projects related to eGovernment.

Computerisation Department

The Department is responsible to define and shape the framework for delivery of eGovernment services and in particular the standards, rules and basic concepts relating to the design, development, maintenance and operation of web sites and information systems of public administration. Furthermore, it streamlines relevant training programmes, depending on the needs of the public sector.

IT and Communications Committee

The Committee was founded in 2011 and its main responsibility is to prepare and submit the Digital Agenda to the Prime Minister for approval. The Digital Agenda is a national Strategic Plan, which includes among other programmes, the national programmes for Broadband Services, Digital Convergence and eGovernance aiming at the development of Information and Communications Technologies (ICT) in general and particularly in the public sector.

Observatory for Digital Greece

The Observatory aims at conducting relevant studies and contributing to the policy formulation processes to the Greek Government and any other party interested.

Validation/data processing

The security of information and authentication of transactions (transmitted and performed via the 'Syzefxis' network) are ensured through the Public Key Infrastructure on the basis of the Authentication Principle. This constitutes a guarantee for the creation of an appropriate and secure environment which is necessary in order to fully exploit the advantages deriving from the overall framework of eGovernment services.

For this purpose, digital certificates are being issued for fifty thousand (50,000) public administration officers in Greece, plus a further two thousand (2,000) digital certificates for the server authentication of information systems and applications using the SSL protocol in a Web environment. [16]

Uniqueness of data processed

The Syzefxis project provides data exchange and voice over IP services, broadband and e-mail services, offers an e-Learning platform that would be used to provide guided instruction to civil servants, and operates an Internet portal that offers value-added services, e.g.directory, tele cooperation, teleconference and help desk services. It also provides PKI infrastructure services, i.e. electronic signatures and digital certificates that will be used for cross-agency transactions, introducing thus an electronic identity management scheme.

Administrative load reduction in terms of costs and time savings

Uniform, efficient and effective management of state expenditure for telecommunications services. Telephone calls within the 'Syzefxis' network are free of charge, whilst a single pricing policy is applied to calls outside the network (local, long-distance, mobile, international). The operation of the network translates into significant cost savings on telecommunications charges, plus the upgrading of services provided.

40 M€ is the annual saving because of the new telephony for the 6000 actors of 'Syzefxis' network. (http://www.witsa.org/awards10/nominees/public/SYZEFXIS_SupportingDocument1_presentation_and_benefits.pdf)

Documents' accessibility

'Syzefxis' involves the development of value-added services that substantially contribute to the utilisation of the telecom services provided to the public sector. Two among those value-added services should be mentioned here:

A Virtual Workplace: With applications for electronic message transfer, interactive message transfer in real time, organisation chart monitoring, bulletin board, common-use document management system, shared address book, shared work calendar, work assignment monitoring and automatic forwarding of work projects.

Portal/Directory Services: these are services aimed at supporting the participating agencies, as well as for communicating the content and operation of the Network.

Reusing of existing infrastructure and systems

One of the most challenging issues has to do not with the standalone application, dealing with "local" data (i.e. data owned by the competent authority), but with composite services. Such

services have to re-use the components of other services, provided by different authorities. Rigid technical guidelines (focusing on SOAP-based web services) are provided in order to enable such a fine-grained collaboration. While the adherence to such guidelines is relatively easy for new systems, it is more complex in the case of existing, legacy systems, where the need for a wrapper is usually foreseen as a temporary solution.

This approach has been followed in the TAXISnet project, whose services are directly accessible to the public in the form of a web site (www.taxisnet.gr ). TAXISnet applications have been developed from re-usable TAXIS application components. The need for application software modifications or any other architectural adjustments has been minimized, thus also minimizing implementation time and costs. It was introduced in May 2000 as a web-based extension of an existing internal information system. In an eGovernment approach, focusing on the citizen as customer, the General Secretariat for Information Systems (GSIS) of the Greek Ministry of Economy and Finance has deployed TAXISnet, a pilot project offering VAT e-filing services directly to the general public, as a web-based extension to the TAXIS internal information system. Experience from TAXISnet development and operation has been generalized into a framework of critical success factors for deploying e-service schemes, as well as e-service-centered indicators for evaluating IT projects.

Homogeneity / compliance of online services' front-end delivered between public organizations

Business Case

As a ubiquitous infrastructure for storing and retrieving standardized components, the Service Registry is addressed to all Public Administration bodies (ministries, prefectures and other governmental organisations) providing any type of service through interaction with the external environment as well as citizens and enterprises as beneficiaries of the registered services.

In the direction of facilitating the process and data modeling of eGovernment services the Registry provides through its front-end component standard management functionality (create, edit, delete) for all the main and secondary eGovernment elements, each of which corresponds to a menu item. Thus, the items of the elements' management menu are Services, Public Bodies, Documents, Document Fields, IT Systems, Websites and Other Elements such as Projects, Addressees etc. Users can list all the available elements, view the details of any element and search for a particular element providing the keywords that describe its properties.

Authorized users can moreover create, update and delete instances of the eGovernment elements via detailed-view web forms. The three main categories of reports provided by the registry include:

- Main Elements Reports (Type A): simple or advanced reports related to the main elements of the Registry, representing requested properties, relations etc. Authorized or anonymous users (with limited data access) can choose among a plethora of criteria and also select the details' level which they are interested in;
- Integrity Control Reports (Type B): a specific type of reports which have a notifying role for the integrity and in/completeness of data, relations and constraints stored and represented in the Registry;
- Sophisticated Reports (Type C): complex reports representing indirectly derived results and statistical information crucial for further utilization and public sector further development and improvement.

The Service Registry provides patterns and guidelines for systematically transforming service and document definitions and can be used to coordinate the business process re-engineering efforts in the public sector.

**Interoperability Features**

The Service Registry facilitates interoperability at organizational, semantic and technical levels in the public sector. The system is easily deployable and scalable and can be used as a central repository to support federated management of services' descriptions as well as on the-spot electronic service composition from existing services and immediate propagation towards all administrations involved.

**Deployed Technologies**

- ASP.NET for the Web Interface
- Source code in Visual Studio 2005 C#
- Reports in ActiveReports
- SQL Server 2005 for the DBMS

Definition and adoption of precise expertise

### 3.3. CHANGES IN ORGANIZATIONAL STRUCTURE AND LOGISTICS AS CONSEQUENCE OF AUTOMATIC PROCESSES

Facing the citizen's displeasure towards public sector institutions, the Greek government had to employ new managerial practices in order to provide more efficient services to citizens. More specifically, it had to set new standards for public services by improving the relationship between citizens and government, dealing with citizens in a helpful and courteous manner, reducing the time taken for fulfilling requests, simplifying procedures, and eliminating redundant formalities. The Citizen Service Centres (CSCs) were designed based on the "one-stop-shop" philosophy with the purpose to deliver more efficient services to citizens from a single point of interaction. The main purpose of this reform was the progressive simplification of administrative processes and their integration into a system of transactions, which was shared among public administrations with as singular interface for the citizens the CSC Offices. The new system provides a significant advantage in terms of accessibility and reliability of public services. Compared to the previous situation, people no longer had to interact with several administrations, both local and central with sometimes unclear boundaries of intervention and responsibility, to obtain information, authorisations or other services. More specifically, the Greek Citizens Service Centers offered a wide variety of public services to citizens, resulting in streamlining more than 870 transactional processes.

The CSCs initiative was governed by the Ministry of Internal, Public Administration and Decentralization in cooperation with all the Municipalities, the Regions and the Prefectures of the country as well as with the technological companies responsible for the design, implementation, maintenance and development of the IT applications supporting the transaction processes.

The Ministry of Internal, Public Administration and Decentralization. was trying to import a new model of transactions in the public sector based on the New Public Management principles, involving radical and revolutionary changes of the public sector.

More specifically, the basic objective of this effort was to separate the "production" from the "services" in order to deliver more efficient information to citizens. To achieve that, the Ministry of Internal, Public Administration and Decentralization required from the CSC's employees to have a more technology-based profile. Hence, there was a need for training existing employees that were moved from municipalities to CSCs but mainly recruiting new younger employees, who were more competent at using new technologies.

CSCs constitute an innovative change effort for the Greek Public administration that tried to introduce new managerial and administrative practices, harmonized to the European Union directives along with private sector practices. The use of new technologies resulted in simplifying many processes for the advantage not only of the citizens but also towards minimization of the

public sector's administrative costs. Taking advantage of ICT, many services were integrated while there were actions for decentralizing service delivery and monitoring.

The main changes that CSC change effort brought in the Greek public administration can be summarized as the following:

- Changes in the relationships between the central, regional and local level of administration;
- Changes in the organizational design of public services;
- Changes in the principles of financial management;
- Changes in the design of public policies;
- Changes in the evaluation of administrative outcomes and outputs;
- Changes in the relationship between state and society or between public services and citizens;
- Changes in internal but also inter-organizational processes of public administration bodies.

### 3.4. RE-ENGINEERING OF ADMINISTRATIVE INFORMATION SYSTEMS: PROCESSES AND ORGANIZATIONAL ASPECTS

TAXISnet (www.taxisnet.gr) applications have been developed from re-usable TAXIS application components, whereas the aforementioned technical architecture required a minimal amount of re-engineering in the original TAXIS applications and database schema. Therefore, the need for application software modifications or any other architectural adjustments has been minimized, thus also minimizing implementation time and costs.

After a short initial, fully electronic, registration procedure, TAXISnet users receive electronic credentials which enable them to access the full range of TAXISnet services. Now TAXISnet offers e-filing services for VAT and income tax forms, allowing the corresponding tax payments to be received via banking system infrastructures. Further services include e-issuing of tax certificates and e-provision of tax information. These services are available through the Internet at the General Secretariat for Information Systems (GSIS) and TAXISnet web sites (www.gsis.gov.gr and www.taxisnet.gr respectively) as well as through GSIS call centers and fax servers (TAXISphone service). In its current status, TAXISnet offers 24x7 service availability and real-time response for all transactions, plus on-line FAQs and email-based help desk services for registered and prospective users. The main customer segments addressed by TAXISnet are (a) individual citizens, with emphasis on remote regions, (b) professional accountants and (c) private businesses, with emphasis on SMEs.

## 3.5. CERTIFICATION PROCESS FOR INTEROPERABILITY

According to the Presidential Decree 150/2001 "Adaptation to Directive 99/93/EC of the European Parliament and of the Council on a Community framework for electronic signatures", and Law 3431/2006 the Hellenic Telecommunications and Post Commission (EETT) is the authority responsible for control and supervision of certification-service providers for electronic signatures which are established in Greece, as well as for ascertaining compliance with "secure signature creation devices".

The Presidential Decree 150/2001 defines electronic signatures and advanced electronic signatures (or else digital signatures). It also deals with the legal consequences of electronic signatures, liability of certification providers, the obligation to protect personal information, terms in effect for recognised certificates and certification providers, it contains provisions for secure signature-creation devices for secure signature verification.

Law 3448/200629 established the Hellenic Public Administration Root Certification Authority (HPARCA) in March 2006 and on the 10th of November the HPARCA Certification Practices Statement was issued. The Certification Practices Statement sets the terms and conditions for the provision of certification services of the Public Administration in general, via the use of Public Key Infrastructure of the Hellenic Public Administration Root Certification Authority (HPARCA). The Statement defines also the terms, conditions and the technical specifications for the approval, issuing, handling, use, revocation and renewal of digital certificates and the provision of relevant certification cervices from the issuing Certification Authorities.

One of the standards of the Greek eGovernment Interoperability Framework regarding the implementation and delivery of eGovernment services is the Digital Authentication Framework which provides the guidelines for identification and authentication of users utilizing eGovernment services and sets the rules regarding issuance and usage of public key certificates for the electronic services authentication and digital signatures.

ERMIS, in line with the Digital Authentication Framework, deploys a number of different authentication methods to deal with the diversity of the corresponding e-services requirements, ranging from the traditional use of username-password to the strongest method of digital certificates combined with the use of smart cards.

ERMIS has established a Certification Authority (CA), which has undertaken the task of issuing digital certificates to citizens and businesses for the purposes of authentication, digital signatures, and confidentiality. This CA is part of the Greek Public Sector Public Key Infrastructure (signed by the Hellenic public administration root certification authority) which was established in the context of the SYZEFXIS project, the Greek Public Sector Network.

Citizens or businesses that wish to make use of the provided e-services that require strong authentication have to obtain from EMIS CA three different digital certificates:

- Certificate for Digital Signatures and Authentication: This certificate, when issued with a smart card, can be used for qualified electronic signatures based on the EU Directive 1999/93/EC;
- Certificate for Encryption. This certificate is used for providing confidentiality on exchanged data and documents;
- Special Purpose Digital Certificate. This certificate is used for conveying sector ids in encrypted form. Is used only for the initial.

These three certificates are “bound” together by the use of a common, yet unique to each certificate holder “Certificate Administration Code”.

The ERMIS certification services are complemented by the issuance of certificates to all civil servants for the purposes of performing their duties in a secure manner. More specifically, civil servants that communicate data and handle documents are issued with two digital certificates (one for qualified electronic signatures and authentication and one for encryption).

# 4. TECHNOLOGICAL ASPECTS

## 4.1. ANALYSIS OF ADMINISTRATIVE INFORMATION SYSTEMS THAT MEET INTEROPERABILITY REQUIREMENTS

The web-based open source application Scriptum has been developed to maintain electronic protocol books and to create a case management system for public sector services.

Scriptum is aimed at eliminating bureaucracy and document loss, while providing to the public administration an extensible and integrated environment for document publishing, categorisation and administration. The overall project involves two basic sub-projects:

- eProtocol;
- Case Management.

eProtocol handles incoming/outgoing mail messages and their attachments. Users can benefit from the advanced properties of the document management system OpenKM in order to manipulate such messages. It provides a simple method to complete forms relevant to incoming/outgoing mail and form letters from templates. In addition, eProtocol maintains a document repository equipped with document based security.

The case management system provides a well-established workflow for treating documentation relevant to specific organisations' operations. Assignment of operations provides a standardised means for managing and directing specific actions to be taken by the public administration in carrying out tasks.

Requirement analysis and specifications for Scriptum resulted from a public consultation which concluded on 30 September 2010 and was jointly carried out by the Office of the Vice President of the Hellenic Government and the Greek Free/Open Source Software Society (GFOSS)[17]; Scriptum has already been installed in the Office of the Vice President as well as on the following organisations:

- General State Archives;
- Decentralized Administration of Macedonia and Thrace;
- Network Operations Center (NOC) – Aristotle University of Thessaloniki;

- Region of South Aegean;
- Mediterranean Agronomic Institute of Chania;
- Earthquake Rehabilitation Division (T.A.S.) of the prefecture of Achaia, which belongs to the Ministry of Infrastructure, Transport and Networks.

Scriptum extends the document management system OpenKM. It is designed in such a way so as to be customisable for both the public and private sectors.

Scriptum is based on JAVA technology and combined by using the document management system OpenKM. The technologies used to develop the project are:

- J2EE 6
- Hibernate 3
- Spring Framework
- ZK 3.5
- JBOSS 4.2.3.GA
- OpenKM 5.0
- MySQL Server 5.1

## 4.2. STANDARDS AND TECHNICAL RULES FOR IMPLEMENTATION (FOCUSED ON ON-LINE SERVICES)

Standard 1

Interoperability and Electronic Services Provisioning Framework

This framework defines the basic principles and the general strategy to be followed by the public agencies, when developing eGovernment Information Systems. It also provides organisational and semantic interoperability guidelines, as well as the technical specifications and communication standards. [18]

The guidelines for the design and implementation of public organizations' information systems for the provision of electronic services towards citizens, enterprises and other organizations should take into account the following principles and directions:

- Transparency and Extroversion through explicitly defined and well-documented interfaces, in order to provide easier integration with and access from other systems;

- Reusability as a key issue in achieving Public Systems' Interoperability at its full spectrum;
- Flexibility, since Public Sector Information Systems have to allow for relatively simple and cost effective adaptation to new conditions and operational requirements, prioritising tasks that deal with the transaction volume, the response time and the service provision security;
- Standards: The design and implementation of Public Information Systems has to be based on widespread standards, in accordance with the Interoperability Framework;
- Scalability: The services provided by a Public Information System might be required by a large amount of other Public Sector Organizations, therefore scalability and extensibility capabilities, through the hardware/ software addition/ upgrade, have to be provided, in order to accommodate for the increase of Data Transfer Requirements;
- Performance and Response: Public Information Systems have to be capable of minimising the response time for service requests, irrespective of the volume of data and complexity of processing required for each operation;
- User Friendliness: Public Information Systems have to provide a user friendly interface for their services;
- Availability: Public Information Systems, which provide electronic services have to be always available and without any errors;
- Fault Tolerance: In case that software or hardware failures are presented, fast recovery and data integrity have to be ensured;
- Maintenance and Updating: Public Information Systems have to be designed and implemented bearing in mind that the use, maintenance and upgrade will be performed/ supervised by organizations/ individuals who were not involved in their implementation;
- Security: System reliability depends heavily on the data/ process security of the Public Information System.

Therefore, the technical standards to be adopted cover the following aspects of interoperability:

- Interconnection – standards related to networks and system development, which layer enables communications between systems;
- Data integration – standards for the description of data that enables exchange between disparate systems;
- Content management and metadata – standards for retrieving and managing government information;
- Information access and presentation – presentation of data to the user in the various means of access to eGovernment services;

- Business services – standards to support data exchange in particular business areas such as e-learning, e-health, etc;
- Web-based services – standards to connect and integrate web-based applications over the Internet;
- Security – standards that ensure safe access and exchange of information in public services.

The Greek eGovernment Interoperability Framework has adopted a multi-criteria methodology that takes into account appropriate thresholds for compliance in each sub-framework and weights in rules categories and classification levels (i.e. Obligatory, Recommended and Under Consideration), as well as in standards' maturity levels (White List, Grey List and Black List).

Greek eGIF provides an identical detailed standard life cycle management process. It provides one additional level of a classification scheme for standards, where three lists - white, gray and black - are maintained and standards are placed into these lists depending on the stage of their maturity level and life cycle. It also provides the detailed mechanism of how standards move in and out of such a list and are placed in the GIF under a given label indicating its degree of preference for its use in developing government information systems.

The document also defines semantic interoperability elements which can be perceived as an important infrastructure for facilitating and achieving semantic interoperability:

- Code Lists;
- Core Data Components;
- Data types;
- Standard XML Schemas;
- Metadata;
- Ontologies;
- Interoperability Registry .

The document also presents the most advanced technologies and best principles and architectures for designing and developing web applications for Public Administration organisations.

More precisely, the following architectures and technologies are analysed:

- Multi-level Architectures (client layer, presentation layer, business logic layer, data storage layer) ;

- Component Based Development;
- Service-oriented Architecture (SOA), and
- Web Services Technology (Simple Object Access Protocol - SOAP, Web Services Description Language - WSDL, Universal Description, Discovery and Integration - UDDI, Business Process Execution Language - BPEL4WS, WS-I, WS-Security).

Standard 2

The document accompanies the first publication of standardized XML schemas that were designed for the needs of the Greek Interoperability and Electronic Services Provisioning Framework (or eGovernment Interoperability Framework - e-GIF).

The aim of the document is to present the principles and rules for XML schemes used in the public sector projects. It also aims to apply and verify the modelling methodology of documents proposed by the Documentation Model as well as to specify the conditions, rules, key points and recommendations for the development and adaptation of XML schemes.19

Standard 3

Adopt an open philosophy for implementing Public Information Systems, which consists of compliance with open technological standards and specifications for the design and implementation of public administration applications, systems and websites.

Standard 4

Align the national ICT strategy with international initiatives, in order to ensure the provision of cross-border services. This is especially important for European countries which need to align with the European Interoperability Framework (EIF) and other EU initiatives, in order to deliver Pan-European eGovernment Services (PEGS).

## 4.3. IS THERE AN OFFICIALLY ADOPTED LIST OR REGISTRY OF STANDARDS RELATED TO INTEROPERABILITY

The Interoperability Registry Platform

The architecture that implements the Interoperability Registry comprises of three layers:

1. the Web-based and UDDI (Universal Description, Discovery and Integration) interfaces for various groups of users,
2. the tools layer including ontology management, process and data modelling and

3. The information repository for interconnected data elements, process models, XML schemas and Web Services descriptions.

These three layers are integrated through a relational database engine (based on Microsoft SQL Server) and common access control and application engine integrating the tools level with the various interfaces. The front-end platform components are as following:

- The Interoperability Framework Web Site found within the Greek eGIF WebSite, which publishes the various documents of the eGovernment Framework but also gives access to citizens and businesses for publicly available data;
- The Services Registry, accessible to authorized users that gives access to the Registry Tools (meta-data management, process and data modelling);
- The Registry UDDI interface, where administrations publish their We bServices or find existing, available Web services to use through their information systems, constructing truly interoperable, one-stop services.

The mission of the Services Registry developed is to facilitate the eGS ontology integration into an intelligent and scalable software tool. In order to provide an automated methodological process and data modelling for eGovernment services, an ontology-based intelligent web information system is necessary. For it, the portal implemented as an eGovernment Services Registry (eGSR) offers simple data entry and management, facilitates electronic data automated imports with custom system modules, and also allows different user groups to be aware of the public sector administration and services provision through a wide range of simple, complicated and statistical reports. The target audience of eGS Registry includes the Ministry of the Interior, Public Administration and Decentralization (as the Registry Authorized Monitor), every Public Body that provides any type of governmental services, and ultimately citizens and enterprises as beneficiaries of the registered services.

Users and rights

Services Registry has been implemented as an easy-to-use and useful tool in order to capture and manage huge information volumes. From a usability perspective, five types of users can be distinguished:

- Administrator: responsible for the users' rights and roles management, the data updates tracing;

- Super Users: responsible for publishing the adequate information in the Registry, verifying the reliability of the information provided by Public Bodies;
- Public Sector Employees: users who are in charge of providing specific governmental services and they have access only to data related to these specific services and the public body they work for. Except for querying, they have the right of editing and reformulating these specific data. Each update of these has to be approved and confirmed by the super users;
- Registry Monitors: they are senior managers of the Ministry of the Interior, Public Administration and Decentralization, responsible for the healthy use of the Registry and the published data conformity to the related legal framework. Super Users are accountable for the whole system performance and use to the Registry Monitors;
- Citizens /Enterprises: they have free read - access to main data of services, documents and public bodies only for informational and service provision beneficial reasons.

The eGSR portal described above has been developed by using the latest web programming techniques. The Web Interface has been developed with ASP.NET 2 web application framework running in integrated mode on Internet Information System 7.0. The DBMS used in the development of this system is SQLServer 2005. SQL Server 2005 has been chosen for its performance and scalability as one of the last trends in database development.
www.e-gif.gov.gr

### 4.4. EXISTING METHODOLOGIES IN THE MANAGEMENT OF IT SERVICES

The main rules and regulations developed for defining methodologies and management of software development are defined within the Law on eGovernment which constitutes the institutional framework for the organisation and simplification of the relationship between the government and citizens/businesses through ICT. The law creates a general framework for eGovernment in public administration by: defining concepts; setting forth the basic principles of eGovernment; specifying the obligations of public sector bodies for the use and exploitation of new technologies; giving rights to citizens in relation to the processing of personal data and ICT use; regulating issues regarding the storage and transmission of electronic copies, files and protocols and; examining issues related to the authentication of user services. Of particular importance for the success of the endeavour is the active involvement of public sector officials, who are in effect tasked with implementing this new framework. [20]

The Ministry of Administrative Reform and eGovernment is the ultimate initiator of eGovernment strategies and policies aiming to develop IT in the public sector. In addition, it shapes the institutional framework and sets the guidelines for the structure and proper functioning of all public services that are dedicated to serving society, in relation to IT. [21]

The Computerisation Department is responsible to define and shape the framework for delivery of eGovernment services and in particular the standards, rules and basic concepts relating to the design, development, maintenance and operation of web sites and information systems of public administration. Furthermore, it streamlines relevant training programmes, depending on the needs of the public sector. [22]

The IT and Communications Committee is responsible for the implementation of the institutional framework governing the development of IT and electronic communications both for private actors and public administration. [23]

## 4.5. IS THERE A NATIONAL CLEARING-HOUSE OF DATA ELEMENTS AND XML-CONSTRUCTIONS AND IF NOT, IS THERE ANY WORK IN THIS DIRECTION

In June 2012 the Ministry of Interior launched the functioning of the clearing-house on interoperability for automated collection and provision of financial data from all municipalities and regions. The project was implemented under the 3852/7.6.2010 Kallikratis law on decentralized government in Greece. To ensure the automated collection of economic data, the necessary web services were developed and installed to the local applications of 238 municipalities.

## 4.6. AUTHENTICATION TOOLS FOR ELECTRONIC IDENTIFICATION INTEROPERABILITY (SMART CARDS, BIOMETRIC ACCESS SYSTEMS, ETC.)

The smart cards issued in the framework of the SYZEFXIS Project are the only eIdentification infrastructure token that has been elaborated so far in Greece. The smart card is based on Public Key Infrastructure technology and has two digital certificates, one for electronic signing and the second for cryptography. In particular, the first is used for the electronic signing of documents and client authentication; and the second is used in cryptographic applications and tests as a certificate. The Certification Authority controls the public key of the first certificate whereas the holder of the card has the only available private key. The card is dependent on the use of a PIN-code. Each card is

issued at the level of a registration Authority, which are functioning in five Ministries, that is, i) Ministry of Interior, ii) Ministry of Finance, iii) Ministry of Health, iv) Ministry of National Defence and v) Ministry of Citizen Protection. On top of the hierarchy stands the Root Certification Authority, which supervises the functioning of the system.

Smart cards are used as carriers of signature creation data (private cryptographic keys) and of digital certificates for the signature creation data, as a part of a secure signature creation device in combination with the appropriate means (hardware-software) in a user's workstation. In any case, his/her personal data are stored on the chip of the card, as the certificate will also be. However, no biometric data are included or planned.

Technical characteristics of the Smart Card Readers:

- Capacity to support all electronic chip cards, according to ISO 7816 and T=0 and/orT=1.
- Compatibility with ISO 7816/1/2/3.
- Capacity to automatically establish entering/exiting of the card.
- Presence of PC interface: USB, Type: USB (+5V, GND, D+, D-), Connector : USB std - Speed:
- 1,5 Mbps.
- Support of Card interface: Standard ISO 7816 - 1/2/3, T=0 and T=1
- Speed: 9600 - 115 200 bps – support from micro-circuits in all contacts.
- Presence of 8 contact card connector - number of manoeuvres: 100.000
- Presence of external LED Indicator for the condition of the Card Reader.

## 4.7. TOOLS FOR UNATTENDED ACCESS TO SERVICES AND INFORMATION IN PUBLIC PLACES (INFORMATIVE KIOSKS, PUBLIC ACCESS POINTS, ETC.)

Several projects were implemented for creating public places for info kiosks and public access points, mainly co-funded by the EU.

Public internet access points are available in different municipalities in Greece. Some examples that could be mentioned is the municipality of Trikala and the municipality of Larissa (Infokiosks Network) [24].

The Municipality of Larissa in its attempt to offer upgraded services to its citizens decided to install in central locations information stations, which had as a goal the dissemination of constant and up to date information to the locals and visitors of the municipality. This project was self-funded.

The number of stations which were installed was 12. Their installation was made in central locations of the municipality. The Information Stations were specially designed open-air kiosks, which through their computer system and the appropriate software provide to the citizen-users selected information in electronic form with the use of multimedia technology. The system communication with the user happens through the use of a touch-screen.

The infokiosks are interconnected with each other through a WAN (wide area network) and ISDN lines 64K. The network is used both to update the kiosks with the latest information and for controlling their operation. The heart of the system is an information base for kiosks which includes a plethora of information for: The municipality of Larissa - Public Services of the city – Emergencies – Routes - The monuments of the city - The market of the city – Entertainment - Cultural events
The infokiosks are able to provide businesses and organization with the opportunity to promote themselves to the market of the city through various innovative services that they offer.

The services that infokiosks provide can be split into two categories:

- digital promotion through an electronic business directory;
- advertising on the lighted external frames of the kiosk.

With regard to the municipality of Trikala, e-Trikala's (http://www.e-trikala.gr/) primary objective is to make Trikalans active participants in the municipality's digital affairs, promotion of broadband use was the first project implemented in late December 2006. This includes free wireless access to the Internet for residents, as well as introduction of new technologies (like DSL) and installation of kiosks in public locations, which has publicized the advantages of broadband usage to Trikalans.

### 4.8. ACTIVATION AND DELIVERING OF SERVICES WITH A WEB 2.0 LOGIC

The 'Governance in the Age of Web 2.0' study, conducted by the Observatory of the Greek Information Society in December 2009, demonstrates the Greeks' positive feedback towards the use of eGovernment services.

The 'Governance in the Age of Web 2.0' study also raises the need for innovation in eGovernment, aiming for greater openness, transparency and services tailored to the users' needs. The term 'eGovernment 2.0' or '2.0 Governance' is to mark a new era of intelligent electronic public services for citizens and businesses, which should be developed by 2015, according to the Ministerial Declaration on eGovernment approved unanimously at the 5th Ministerial eGovernment Conference in Malmö, Sweden.

The new era of governance is based on 'Web 2.0' technologies, a new wave of web applications that provide users with advanced capabilities for electronic communication and collaboration. The 'Web 2.0' technologies replace the word 'informed' with terms like 'share', 'express', 'affect', 'networked', allowing citizens to actively participate in the decision-making process and control the work of government in terms of transparency, good governance, etc. The main challenge of 'eGovernment 2.0' is to transform government into a flexible, efficient and user needs tailored mechanism, in order to replace the citizens' physical presence at the public agencies with transactions which are completed entirely online.
http://www.observatory.gr

The Greek government has taken the initiative to invite citizens to contribute to the redesign of egovernment services. With the use of open source software proposals and suggestions are requested by citizens, officers of public bodies and services, developers and designers in order to make public eservices more user friendly, more accessible and usable.
http://labs.opengov.gr/

## 4.9. ON-LINE SERVICES DIRECTORY AND/OR SEARCH ENGINE PLATFORM FOR PA ONLINE SERVICES

The main web-site that provides search and directory services for PA online services is ERMIS portal, http://www.ermis.gov.gr . It is the National Public Administration Bodies directory where citizens and businesses can access online services right from this site. The services are organised in various ways to facilitate the navigation of citizens. The Ermis portal provides 100 online services and 11 complete transactions.

## 4.10. RE-ENGINEERING OF ADMINISTRATIVE INFORMATION SYSTEMS: TECHNOLOGICAL ASPECTS

The General Secretariat for Information Systems customer orientation and deployment of IT infrastructures to deliver high-quality customer-oriented service has been based on a simple modernisation roadmap structured around four key milestones:

- Business process streamlining and re-engineering initiatives;
- Reversion of ``introvert'' orientation, failing to place emphasis on direct government-to-citizen and government-to-business service provision;
- Conception and deployment of a backbone IT infrastructure for Greek Ministry of Finance and its business partners;
- Development, on top of this infrastructure, of several electronic interfaces for Greek Ministry of Finance customers using modern as well as traditional ICT platforms (Web, facsimile, telephony);

Some outdated business processes have been overhauled and certain regulatory amendments have been necessary to prepare the civil service from an organizational point of view for the introduction of these new technologies.

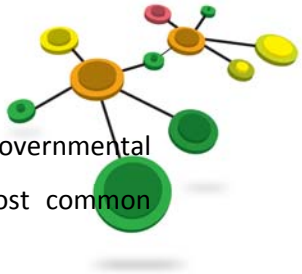
The Government-to-business vision can be articulated as follows: ``Government support and assistance should be anywhere and anytime available to aid the businesses succeed, facilitate their every contact with the State and regulate the environment for a healthy electronic market economy'' (Stamoulis and Georgiadis, 2000). Similarly,

the Government-to-citizen vision is that ``government support and assistance should be anywhere and anytime available to aid the citizen as a valuable customer, reflecting the fact that a government respects the citizen'' (Stamoulis and Georgiadis, 2000)25. In light of these objectives, scattered information must be interlinked and cleansed, and IT islands must turn into service-providing networked information systems. As a result of business process reengineering activities, the interconnection of information and systems islands has allowed for functional integration among various workflows, thus producing an avalanche effect on IT infrastructure exploitation as well as on augmenting added value of informational content.

### 4.11. WEB-SERVICES ADOPTION

Ermis is the Greek national Governmental Portal for the Provision of Information and Secure e Transactions to Citizens and Businesses. Ermis portal is the electronic single point of contact (one-stop shop) for government services. Ermis also hosts the Greek eGIF (eGovernment Interoperability Framework) Interoperability Registry. This is a web-based repository of service and document

metadata, services process models, standardized XML schemas for mostly used governmental documents based on UN/CEFACT/CCTS standards, as well as codelists for the most common information elements within governmental service provision in Greece.



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# 5. BEST PRACTICES AND SYSTEMS ON TRIAL

## 5.1. BEST PRACTICE

**e-Dialogos**

Redesigning Plato's Republic - eGovernment empowering citizens

Online citizen deliberation for urban development: A holistic approach

The emergence of e-Democracy and e-Participation theory and practice these past few years was accompanied by a rhetoric affirming the potential of ICTs to rejuvenate the "old democracy", giving it the tools to redefine itself in its everyday functioning. Most European Countries have some kind of e-Democracy or e-Participation Project going on, few have integrated this spin in their own National Strategies. From the outset, Local Authorities and Municipalities were seen as the ideal test-bed to experiment and develop such initiatives and projects.

In Greece, things start to move in that direction, although at a slower pace. Some of the reasons are the low internet and broadband penetration rate compared to other EU Member States but mainly political unwillingness and limited understanding of ICT related issues and challenges at top and middle public service management level in both National and Local Government and Public Administration. This rather difficult "environment" certainly poses challenges but creates opportunities as well for innovative policy makers and initiatives to stand out.

A testimony to this is the innovative "e-Dialogos" project at the City of Trikala (http://www.e-trikala.gr/) .

e-Dialogos (www.edialogos.gr) is an innovative and fully-fledged online eDemocracy platform allowing citizens of the City of Trikala to participate in decision-making processes.

It is funded through the "Politeia" Programme of the "Greek Ministry of Interior, Public & Local Administration" and the "Region of Thessaly" and it is championed by the Mayor of Trikala himself.
The objective is to offer to all citizens the opportunity to get involved directly with the process of development and implementation of city policies through an online platform of dialogue and participation, in an effort to reverse the disengagement of citizens with their elected representatives and the policy process.

The innovation of the methodology lies in the development of an original, holistic and fully integrated approach to e-Participation, which combines online deliberative and voting processes in a new way. The methodology developed is based on best practices worldwide & is consistent with the current political theory of democracy and models of deliberation.

**The Platform and the tools**

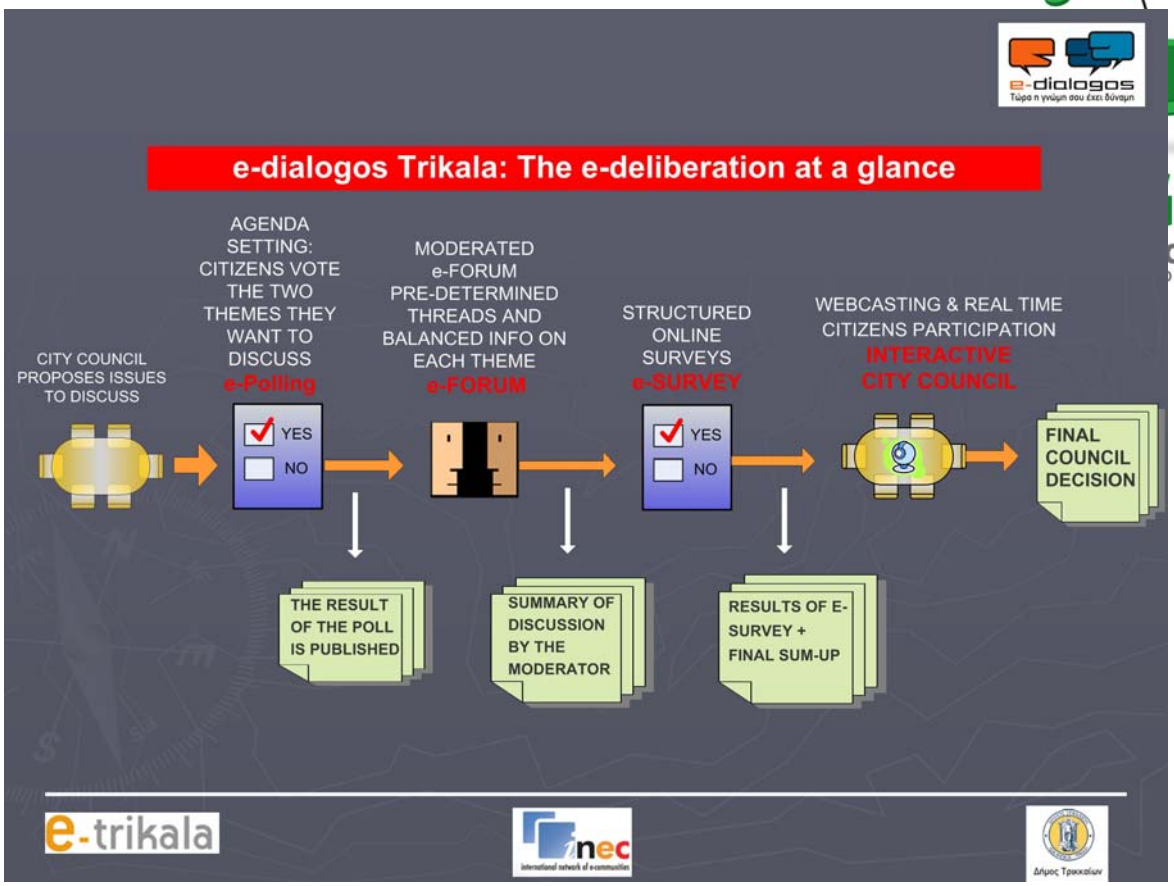
The platform comprises of three tools:

- a top-down e-Survey system, where the City Council can ask citizens to respond to specific issues of interest to the municipality;
- a bottom-up e-Petition system where citizens act on their own inititative;
- an e-forum for direct moderated dialogue and most importantly;
- a fully fledged e-deliberation process, where the innovation of the project lies.

**The novelty of the e-deliberation process**

This is a 'serial process' with a specific time-frame with several well defined and concrete steps embedded in the deliberative cycle, a process where the different corresponding e-tools are put to particular use.

In brief, the process is best seen at the following diagramme.




**Verbal explanation of the Deliberative Cycle process**

- The Mayor and Councillors decide on a pool of potential topics for deliberation (the focus being on topics that have a strategic and long term developmental impact on the City);
- Information is gathered on this pool of topics. The objective is to create short condensed and meaningful insiders documents on each of the proposed issues, written in plain language and a journalistic style, for the information to be accessible to all citizens. This is uploaded on the website;
- Citizens must register on the e-Dialogos site in order for them to participate, where they also create their own demographic profile. The demographics will also be used to weigh the results accordingly, balancing the views of over or under represented segments of the population, facilitating statistical analysis at the end of the deliberation cycle. An important aspect is that of catering for the registration of citizens who are not necessarily "permanent residents". There are more stakeholders to this discussion, people that have some sort of "vested interest" in the well-being of the city (like students, regular commuters, businesses etc). Moreover, there are citizens that live and work permanently in another city or even abroad but keep close ties locally;

- e-Polling: The pool of suggested issues is put to an online e-Polling process where citizens can decide which topics will finally be part of the deliberative process. They are also allowed to add issues they consider important that have not been picked up by the municipality. If they get enough "votes", they are included in the topics to be discussed hereafter. This is essentially an agenda setting stage;
- e-Forum: The selected topics are then discussed among citizens in professionally moderated online forums with the participation of the Mayor, civil society, experts etc. The forums feature two or three pre-determined discussion threads so that the discussion will be well-focused. The moderator – a journalist -is trained by the team to follow carefully drafted guidelines in order to keep the momentum and foster constructive discussion. The background information is always accessible easily;
- The moderator uploads a well drafted user-friendly and balanced summary of the main points discussed;
- These codified results of the discussion, lead to the drafting of a detailed and thorough questionnaire which is uploaded in the form of an e-survey that will record the quantifiable final position of citizens on the specific issues. A novelty of the platform is that for every question there is a button which allows a pop-up window to appear with the necessary background information needed to answer this particular question (the "fact bank"). This feature, not found in other e-survey platforms, fosters real and substantial informative opinions;
- The results of the e-forum and the e-survey are forwarded to the City Council, which will discuss and decide on these issues in a dedicated session which will be webcasted, with a citizen-envoy collecting and reporting emails and chats sent by citizens injecting their views and questions into the debate at regular intervals;
- The City Council finally decides on the issues discussed, the result is uploaded and a new deliberation cycle can now commence.

**Critical success factors**

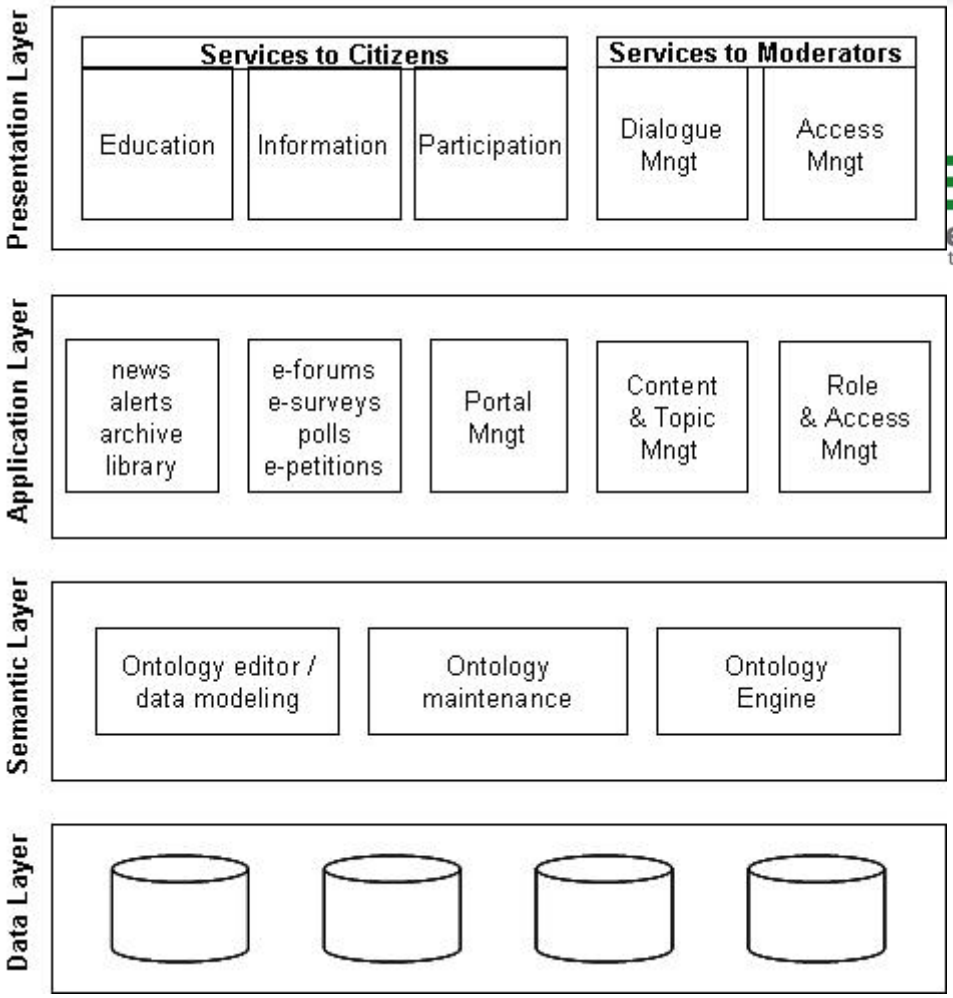
- Strong commitment from policy makers to seriously engage in the process (the leadership and vision of the Mayor was an essential factor in the project;
- Definite decisions and outcomes at the end of the process to convince of the real usefulness of citizens' participation;
- Special attention to the Interface Design so that it is intuitive and easy to use for the average citizen. UI is not an "add-on", on the contrary it is an essential element towards inclusiveness, a democratic prerequisite;

- Training toolkits for Citizens, Municipality officials and Moderators;
- Special measures to increase access to the processes by providing public access points and guidance;
- A comprehensive and well thought-out communication strategy involving the full array and the right mix of marketing tools like; branding, informational brochures, posters, press releases, advertising in mainstream media, online campaigns, champions' press interviews etc. Care should be taken towards timely advertisement and awareness raising activities on forthcoming discussions online and offline, reminding citizens of the appropriate stages where their input is needed.

**Technology solution of e-Dialogos project**

The main objective of the e-Dialogos project is openness. This fundamental choice is reflected in the technological approach as openness is the key to the 3-fold approach: open architecture, open source, open standards.

The architecture of e-Dialogos is a layered one, aiming to provide maximum flexibility. At the bottom there is the Data layer, which serves as the repository for data collected by the system. Directly above it is the Semantic layer that provides the backbone for advanced services and includes applications that support ontology editing and maintenance along with an ontology engine that provides a run-time environment for the application of ontologies in the platform. Next one is the Application layer that implements the functionality of system to support the several aspects of functional requirements for the various roles in the system. Finally, the different tools utilized by e-Dialogos have been integrated at the Presentation layer so that the citizens perceive e-Dialogos as a unified system and not as a loose toolkit.




The implementation of the system has been based on open source software platforms throughout every layer. The availability of source code gives the opportunity to capitalize on existing tools and modify them in order to fit exactly with the theoretical methodology model. Furthermore, this choice allows to freely redistribute modifications of the code and the right to use the software in any way that makes the system transparent at the technical level.

The use of standards has been an explicit goal of the technical approach, as by adhering to standards technicians avoided vendor lock-in while also enabling interoperability. By choosing standards-based solutions technicians made sure that they can smoothly replace components of the system with others that comply with the same standards without breaking it. On the other hand, this also means that the system can interoperate on the technical level with other systems that comply with the same standards.

They have tried to integrate the findings and recommendations of the CEN/ISSS eGovernment Focus Group at every layer of the architecture, in particular adopting technical and semantic standards as defined in the group's final report. Some of the technical standards used are SQL for the Data layer,

XML, RDF(S) and OWL for the Semantic layer, J2EE for the Application layer, Portlets and JSP for the Presentation Layer.

**Critical success factors**

- strong commitment from policy makers to seriously engage in the process (the leadership and vision of the Mayor was an essential factor in the project);
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**Impact, innovation, lessons learned**

**Benefits and Social Impact**

The benefit to the implementing partners of the project is the development of a unique methodology and a real platform which has been put to the test. Essentially this can be summed up as a net gain in "know-how" with respect to e-democracy and e-participation models and best practices worldwide.

The benefit for the City and the Region of Thessaly, the owners of the project, is increased legitimacy and an improved public image. Also, the establishment of a new mentality, since they accepted the need for increased engagement of citizens in the policy making process.

The benefit to the users, the citizens, is first and foremost the creation of a "culture of participation", especially in a country in which the dominant perception is one of "distant" politicians who are not interested enough for their constituents once they are elected. Also, society as a whole stands to

benefit greatly from this project since the issue of deliberation has gained the attention of mainstream media and key opinion leaders who have embraced it as truly new and innovative. In this respect, it acts as an example, a "role model" for other projects to be developed especially in local authorities.

As a side benefit, the "Special Secretariat for Information Society" (Greece's government body in charge of coordinating the information society funds) stands to gain from the promotion of this example to other potential parties who are interested now to deploy similar projects, enriching thus the country's experience from e-democracy projects. In fact, experience gained from this project has already created plans for further uptake and expansion.

The main lessons learnt can be summarized as:

- the absolute need for top-level policy makers to support such projects - in this case the Mayor and the CEO of the coordinating body (e-trikala) - who will embrace the project, inspire public servants and citizens and will provide assurance that citizens' voices will be heard;
- there are no ready-made transferable solutions or one-size fits all platform or methodology. There are tailor-made solutions which must take into account the local needs and restrictions (cultural, political and technical) and need the input of a wide range of experts to collaborate as one team: Software developers, social scientists, opinion poll experts, communication experts, content managers, graphic designers etc;
- the need for marketing these projects to the public through a combination of online and offline methods;
- the need for a wide array of experts (not just technical) that must cooperate seamlessly.

### 5.2. SYSTEM ON TRIAL

A significant effort to reform the health sector is currently underway in order to enhance its efficiency and achieve substantial cost savings.

With the pharmaceutical expenditure for Greece rising up to the 2.7% of GDP, (versus the 1,8% for the rest of European countries), the implementation of a national wide e-precscribing system is expected to limit down the medication cost, especially related to the abuse and over prescribing.

Apart from its ability to control the increasing trend as far as the cost of medication use is concerned, e-prescribing in this case is expected to serve as a tool for alignment with guidelines, register the medication profile of the population, support the process of rebate, facilitate the whole procedure of prescription and claims, thus providing transparency.

The pilot program which was recently (October 2010) introduced in Greece for the electronical order of prescriptions for outpatients being insured under a specific insurance carrier, consists of a web based application. The application is available through the public internet and typically it consists of a stand alone electronic entry system, expected to provide (as reported on the relevant website www.esyntagografisi.gr), a prescription identified by a unique number.

The e-prescription project was initially tested at the Organisation for the Insurance of Self-Employed Professionals (OAEE). It currently moves forward swiftly in close cooperation with the Ministry of Labour on the social security funds' end: the electronic prescription system is already operative (www.esyntagografisi.gr ) in the healthcare sectors of two main funds (OAEE and Social Insurance Fund - IKA), and it will be full-fledged across all health care sectors of social security and health funds as well as hospitals.

Furthermore, the uniform e-prescribing system will integrate the diagnostic tests referral platform (http://www.e-diagnosis.gr ) currently used by OPAD (Organisation of Civil servants healthcare) with the aim to extend it across all healthcare provision organizations.

**Pilot testing of e-PRIOR open-source tool for eProcurement**

The European Commission's Directorate-General for Informatics (DIGIT) presented a workshop at the University of Piraeus, the outcome of which was the successful set-up of Open e-PRIOR, as a test implementation, on a Linux Server hosted in Piraeus, making Greece the first European Country to use Open e-PRIOR since 8 March 2011.

Open e-PRIOR is the open-source version of the European Commission eProcurement platform e-PRIOR. It was developed by the DIGIT in the scope of the ISA programme to provide a ready-to-use and production-quality electronic procurement middleware solution to Member States.

It allows public authorities to exchange eProcurement documents with their suppliers, using European standards (CEN/ISSS Business Interoperability Interfaces for Public procurement in Europe (CENBII) business profiles and UBL2.0 data model).

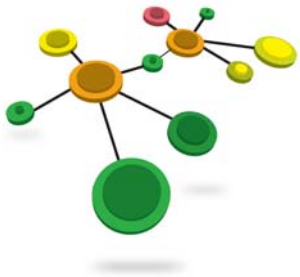
In the scope of the PEPPOL (Pan European Public Procurement on Line) initiative, the Greek government mandated the University of Piraeus to set up a common electronic procurement platform for the Greek contracting authorities with the requirement that this platform should be able to connect to the PEPPOL network. In the scope of their mandate, the University of Piraeus contacted DIGIT to receive support for the deployment of Open e-PRIOR. As an open-source platform with an embedded PEPPOL Access Point, Open e-PRIOR is a good candidate to become the future Greek e-procurement platform.

e-PRIOR main features

- can interconnect multiple suppliers with multiple backoffice systems, while guaranteeing the authenticity of origin, integrity and readability of all transferred documents;
- provides a built-in gateway to the PEPPOL network;
- complies with the following: CEN/BII profiles, e-invoicing directive, standard identifiers and code lists, WS-Interoperability guidelines;
- is capable of processing unlimited attachments per invoice (XLS, PDF, DOC);
- does not require a change of configuration for contracting authorities using the system: is able to route documents from multiple suppliers to the appropriate back office on the contracting authority's side.

## INFORMATION SOURCES


1 http://www.egovplan.gr/?page_id=14
2 http://www.poeota.gr/_download/N.3731-2008b.pdf
3 http://www.eett.gr/opencms/export/sites/default/admin/downloads/telec/N3431.pdf
4 http://www.ekt.gr/content/img/product/14911/pd150_2001.pdf
5 http://www.dpa.gr/pls/portal/docs/PAGE/APDPX/RECYCLE_BIN/2472_97_APR_10_FINAL.PDF
6http://www.dpa.gr/pls/portal/docs/PAGE/APDPX/RECYCLE_BIN/%CE%9D%CE%9F%CE%9C%CE%9F%CE%A3%203471_06_.PDF
7 http://www.ministryofjustice.gr/site/LinkClick.aspx?fileticket=2vj2MKy3FUA%3d&tabid=132
8 http://www.epdm.gr/Uploads/Files/files_for_content/pd118.pdf
9 http://www.gge.gr/up/files/P_D_60_2007.pdf
10 http://eurlex.europa.eu/LexUriServ/LexUriServ.do?uri=OJ:L:2004:134:0114:0240:EN:PDF
11 Ministerial Act Nr. 14 of 28.6.2004, Government Gazette A/116, 29.6.2004
12 http://www.infosoc.gr/infosoc/en-UK/sthnellada/committee/default.htm
13www.observatory.gr/files/meletes/EGOV_A070110TX_%CE%97%CE%BB%20%CE%94%CE%B9%CE%B1%CE%BA%CF%85%CE%B2%CE%AD%CF%81%CE%BD%CE%B7%CF%83%CE%B7%20Web2.pdf
14 http://www.boc-group.com/gr/products/adonis/
15 http://www.e-gif.gov.gr/portal/pls/portal/docs/822023.PDF
16www.witsa.org/awards10/nominees/public/SYZEFXIS_SupportingDocument1_presentation_and_benefits.pdf
17 http://ellak.gr/index.php?option=com_content&task=view&id=6874
18 http://www.e-gif.gov.gr/portal/pls/portal/docs/1/211041.PDF
19 http://www.e-gif.gov.gr/portal/pls/portal/docs/1/211051.PDF
20 http://www.egovplan.gr/?page_id=14
21 http://www.ydmed.gov.gr/
22 http://www.yap.gov.gr/
23http://et.diavgeia.gov.gr/f/primeminister/ada/4%CE%91%CE%98%CE%95%CE%98%CE%A9%CE%A0-%CE%94
24 http://www.bee.gr/projects/casestudy_detail.en.asp?CSID=6
25 Stamoulis, D. and Georgiadis, P. (2000), ``Vision, roles and steps for governments in transition to the digital age'', Proceedings of the IEEE DEXA 2000 Conference, 1st International Workshop on Electronic Government, London, September.



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