A Digital Georgia

e-Georgia strategy and action plan 2014-2018

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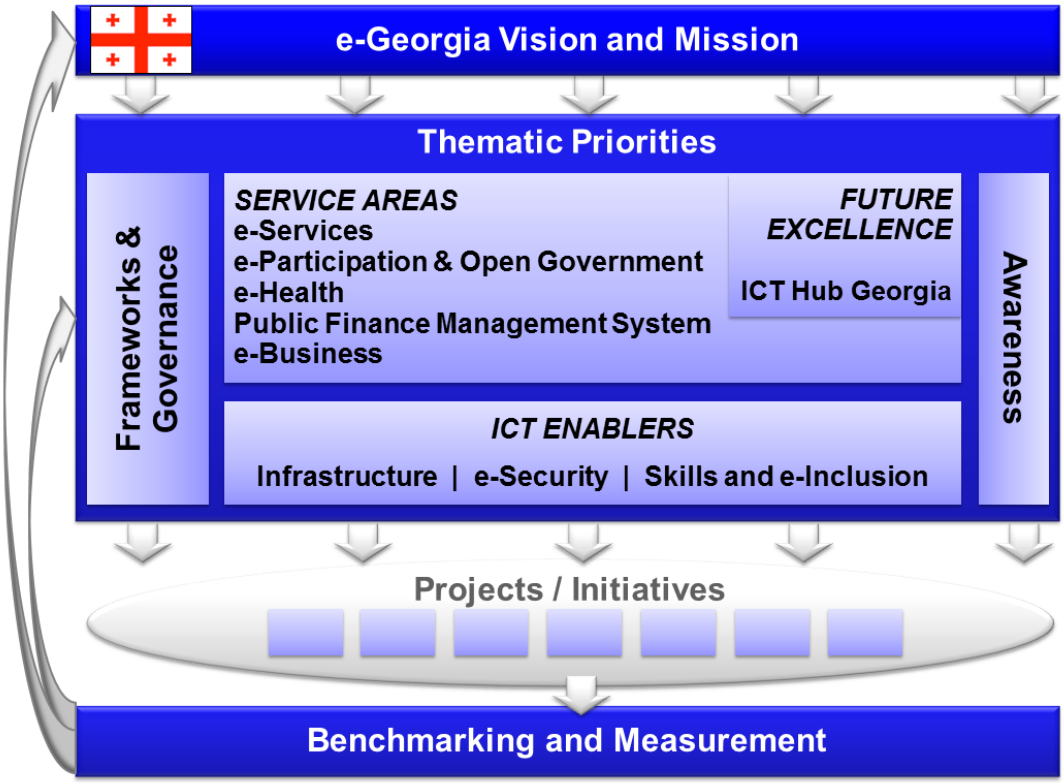
Executive summary

The document “A Digital Georgia: e-Georgia strategy and action plan 2014-2018” illustrates the path leading to a modern Georgia and provides a comprehensive framework for societal changes enabled by Information and Communication Technology (ICT). It focuses on those potential fields, where the public sector is able to take measurements and to set frameworks to exploit the full potential of ICT. The e-Georgia strategy is, however, not limited to the activities covered under the term e-Government. Instead, it has a broader scope tackling related fields of innovation to create a prosperous environment for an innovative business sector and an innovative civil society. The role of government is to stimulate innovation in public, private and civic sectors to ensure economic and sustainable growth.

The **vision** for the e-Georgia strategy reflects this wider scope and is defined as “***Georgia will become a more efficient and effective public sector offering integrated, secure, and high quality e-Services. Improved usage and participation enable ICT-driven sustainable economic growth.”***

This vision was further translated into six mission statements, which have in turn led to eleven **thematic priorities for the e-Georgia strategy**. The thematic priorities are grouped into *Service Areas*, *Future Excellence*, *ICT Enablers* as well as horizontal measures such as *Enabling Frameworks & Governance* and *Awareness*. The subsequent figure outlines these thematic priorities and how they are embedded in the overall e-Georgia strategy. The figure also outlines projects and initiatives resulting from thematic priorities as well as benchmarking and measurement activities to ensure effective and successful implementation of, and feedback loops for the alignment of newly emerging directions of the e-Georgia strategy.



In this e-Georgia strategy document, each of the thematic priorities is described through subtopics that have to be addressed for the successful implementation of the e-Georgia strategy. Subsequently, each subtopic of a thematic priority outlined in the overall figure is described in terms of understanding and scope, existing activities, actions and expected outputs as well as performance targets. The action plan for 2014 to 2018 suggests a set of activities and measures to be performed with indication of respective outputs, timelines and suggested assignments of responsible organisational units. The proposed actions take into account already started initiatives and strategies The subsequent table gives an overall outline of each of the priority themes that are further detailed in the e-Georgia strategy.

Thematic priority	Description
e-Services	To capitalise on the potential of ICT and to optimise the efficiency and effectiveness gains of investments, Georgia must concentrate its efforts on ensuring the availability (i.e. supply) and use (i.e. demand and take-up) of online public services by government, businesses and citizens. Working with stakeholders from different target groups (i.e. government, businesses, citizens, and non-governmental and interest organisations), the "service" track of the e-Georgia strategy therefore focuses on the supply of G2C, G2B/B2G, G2NGO and G2G services.
e-Participation and Open Government	Open Government can be understood as a comprehensive view on how an e-Society can be shaped. The goal is ubiquitous engagement of citizens in all aspects of developing an e-Society. Open Government emphasises transparency, participation, and collaboration. Enabling citizens and businesses to become engaged in more and more aspects of the work of the public sector is essential as part of the Open Government agenda. This involves raising the awareness of, and trust in government, increasing the take-up of e-Services, participating in e-Service design and delivery, and participating in policy making. e-Participation is an important means to facilitate engagement of citizens in public discourse and in more open political decision-making through the use of ICT.
e-Health	Every citizen can benefit from e-Health services. Hence, innovative e-Health services will be a key success factor. A "Georgia Health Management Information System Strategy" was already developed by the Ministry of Labour, Health and Social Affairs in 2011. The e-Health action plan is a vital part of the e-Georgia strategy. A comprehensive Health Management Information System (HMIS) will be built upon existing international standards.
Public Finance Management System	The Public Finance Management System (PFMS) consists of a number of sub-systems, each tackling a specific purpose for public finance management: e-Budget enables digital budget planning and reporting to the Ministry of Finance; e-Treasury helps recoding and managing spending; e-DMS, the electronic Debt Management System is for international debt management and internal loan management; e-HRMS – electronic Human Resource Management System supports human resource management in government agencies; RS.GE - for collecting tax and customs revenues; e-Procurement – for public tendering and electronic procurement of goods, services and works by the procuring entities as set by the PPL (Public Procurement Law); e-Auction - facilitating the selling of State-owned goods to private and civic sectors. The PFMS has become an important pillar for G2G and G2B

	modernisation and management of planning, collecting and spending of public finances, debts and any other assets the government has to manage.
e-Business	e-Business is a key issue for innovation and economic growth of a society, and to reach the e-Georgia vision. Major effects in efficiency and effectiveness gains can be generated by optimising e-Services for businesses on data reporting and application of permissions to governments and on streamlining the whole value-chain of public tendering and public procurement. To enable online trade, appropriate legal frameworks and standards for communication and data exchange need to be settled. Public-private partnership models to provide universal ICT services have to be explored. Likewise, ICT skills development has to be coordinated with the needs of the professional sectors.
ICT-Hub Georgia	The overall vision of the e-Georgia strategy to become a leading competitive and innovative business environment in the field of ICT in the Caucasus region demands excellence in ICT developments. To develop a strong ICT sector that creates high-qualified jobs and a competitive advantage in the region, clear plans are needed to define the areas of ICT investments, to adopt the relevant skills and knowledge excellence, to attract talents globally, and to join valuable projects which bring increasing wealth for the nation. The Ministry of Economics and Social Affairs will complement and enrich the e-Georgia action plan of this strategy with additional initiatives for building excellence in ICT.
Infrastructure	An e-Society needs basic infrastructure elements as a prerequisite for the take-up and innovation in thematic priorities of service areas and of future excellence. This includes especially access to the Internet but also basic services like identification / authentication as well as back office granular and aggregated services, which act as a multiplier layer for the provisioning of online services in prioritised service areas.
e-Security	The failure of a critical infrastructure can be a threat to a greater part of the population and even the whole nation. That means that some infrastructures like telecommunication networks and servers are critical to maintaining the governance of Georgia. Nations become more dependent on this critical infrastructure and more vulnerable to incidents. Cyber security will facilitate the resilience of cyber infrastructure against cyber threats. When citizens and businesses trust the secure infrastructure, this becomes an important factor in economic growth and social development.
Skills and e-Inclusion	The Georgian people can only exploit the potential of ICT if they know how to use and develop these new technologies. In education, a clear view on how to ensure that the next generation will have the skills to manage the new technologies is necessary. For improving the e-Skills of the general population, several measures are to be taken. Also attention needs to be given to special target groups like the elderly, disadvantaged, low-income people or people living in rural areas. Another focus point to be resolved is the gap between ICT curricula and businesses' needs for ICT skills. Students and businesses only profit from profound modern ICT education if what they learn matches the needs of the professional ICT sector.
Enabling frameworks and governance	Successful implementation of an e-Georgia strategy requires the setting up of proper organisational structures such as a legal framework enabling electronic interaction and service provision, and ensuring that digital transactions have the same legal status as traditional procedures. A proper interoperability (or IOP) framework ensures smooth interaction among the actors in an e-Society

	to exploit the full potential of innovative ICTs. An Enterprise Architecture framework provides guidelines for how to successfully develop e-Services and ICT enablers (infrastructure, security, universal services, etc.) for different stakeholders. Good Governance and Open Government principles provide guidelines for e-Georgia. Ensuring the effective and efficient implementation of an e-Georgia strategy and the continued planning and discussion of the future directions of a Digital Georgia, requires working together and establishing a common coordination instrument. Community building is another aspect key to innovative developments of solutions, which need to be enabled.
Awareness	The awareness of citizens and businesses of public sector e-Services and the benefits they provide is essential to the success of the e-Georgia strategy. Awareness underpins and facilitates the successful capitalisation on ICT. Without the actual take-up and successful use of e-Services by citizens, businesses, governments and other users (such as civil organisations), any return on government investment in infrastructure, security and back-end systems, let alone on the design and development of the e-Services themselves, will not materialise.

Based on this strategy and action plan for e-Georgia, the fundamentals are laid out to develop a more efficient and effective public sector offering integrated, secure and high quality e-Services to enable ICT driven sustainable economic growth.

This work was done within the framework of Component 4 of the twinning project "*Promote the strengthening of E-Governance in Georgia (E-Government Georgia)*".

Content

1. Introduction

The usage of information and communications technology (ICT) is the key to a profound modernisation of governments, economics and the society.

The impact of ICT affects all aspects of an economy and is not limited to a few sectors. Persons working in agriculture, in tourism, in transport, logistics and international trade, in banking, in manufacturing and other fields are all confronted with the progress enabler ICT.

Processes are redesigned, new methods are applied, and better decisions are taken with more relevant information. Based on better and quicker information flows and communication tools, business processes are designed more effective, more efficient and more flexible. The introduction of ICT is inevitable for a prosperous country in the mid-term since sectors gain competitive advantages with ICT.

ICT has not only a profound impact on the economics, but also triggers change in society. With the development of ICTs, people have access to a vast variety of information, to billions of documents, and millions of applications. They get news from around the world and listen to the newest music within seconds. They study at remote universities and learn new languages. They stay in touch with their friends even if they live more than thousand kilometres away and they can just share their feelings and impressions regardless of where they are.

According to empirical data presented by the European Union (EU), ICT contributes to overall productivity growth significantly (20% directly from the ICT sector and 30% from the ICT investment)[1]. Similarly the OECD estimates that in advanced countries in excess of 40 % recent economic growth is contributed to the usage of ICT (OECD 2012). Studies also show that the economies most resilient to current financial crisis are those most actively using ICT. These economies have shown a propensity to recover much faster from a setback than those relying on traditional sectors like agriculture or labour intensive manufacturing.

The potential for emerging countries is enormous: South Korea or Taiwan have proven that focusing ICT is a driver of becoming an advanced economy. A strong ICT sector is quite attractive: creating high-qualified jobs, gaining competitive advantage, attracting talents globally, joining valuable projects and increasing wealth for the nation.

Georgia is in a good starting position: There is a high political commitment to ICT, and many promising projects and initiatives have started. 45.5% of the Georgian people use the Internet regularly in 2012. The developments over the past years have been substantial, as in 2007 only 8.26% used this media. Only 18.2% of the people have a computer at home, 16.6% of the people have access to Internet at home (2012, ITU), Mobile phones are very popular in Georgia, more than 4.7 million mobile subscriptions were recorded in 2012 (ITU), the growth is overwhelming (2007: 2.6 millions).

In the development of ICT, the public sector plays a vital role:

[1] European Commission: “A Digital Agenda for Europe“, COM(2010) 245 final/2, Brussels, 26.8.2010

- First, a prosperous development of ICT depends heavily on the legal framework. A favourable one is implemented by change or/and creation of legal provisions adapted to the needs of ICT and commitments of all political levels.

- Second, the government can provide funds to foster the development of ICT. With allocating financial means the government emphasises the importance of selected fields and topics, thus directing the path of the development.

- Third, the government decides when and what kind of valuable services it offers. It improves administrative processes and interactions with the citizens and among civil servants. Processes become more efficient and transparent.

- Fourth, it builds up the basis for the dissemination of technologies: With qualified training and a modern education people are skilled to use the technology. A modern nation requires an available and affordable ICT infrastructure.

- Fifth, a modern Public Procurement System fosters the creation of an innovative environment and supports innovative services and products.

Therefore, a comprehensive and consistent strategy is mandatory to exploit the full potential of ICT. With a strategy the public sector leads proactively the development of ICT and found the basis for a wealthy nation.

This document outlines a strategy with concrete action plans and measurable goals leading the public sector to develop a sophisticated ICT nation.

Scope and objective of this document

This document contains a vision and mission statement in order to present a clear picture of what Digital Georgia can achieve through the agreement of a set of strategic priorities, for which investments and engagement are ensured. Starting from the mission, the most relevant topics for an e-Georgia strategy will be discussed. The proposed goals and actions are short- to mid-term range (up to 5 years).

The document is addressed to the public, private and civic sectors of Georgia and gives a clear picture of the path of Georgia in the next years.

Method applied

This document was set up as a result of the Twinning project “Promote the strengthening of E-Governance in Georgia (E-Government Georgia).” In component 4, experts from Austria, Germany, the United Kingdom and Denmark had the task to draft a strategy for “A Digital Georgia” with strong involvement of experts from DEA and from other relevant agencies (cf. acknowledgements after the concluding section). In four workshops, experts from DEA and stakeholders from several ministries and institutions were invited to elaborate and review the vision and mission statement as well as a set of thematic priorities with proposed activities and measurements to achieve these goals. Also, estimations on time ranges to achieve these goals were discussed. More than 60 participants from up to 35 different organisations took part and gave their inputs. Based on the literature and experience of the experts as well as the first two workshops, a first comprehensive draft of the strategy document was developed and

sent to stakeholders in order to gather feedback. After integrating this feedback, another workshop with a public presentation (on 4th July 2013) and several interviews with different ministries were held in order to clarify open issues and to collect further feedback. After incorporation of feedback gathered and clarification of open issues, a final draft was sent out to all relevant stakeholders in a final offline consultation round. Subsequently, feedback received has been elaborated and particular agencies have been invited for another workshop in October to complete the e-Georgia strategy.

Structure of the document

The next section presents the vision and mission statement elaborated and agreed upon by the participants.

Section 3 outlines the thematic priorities of the e-Georgia strategy, which were identified and elaborated along the different workshops and interviews with experts from Georgia. First, an overview of the identified thematic priorities is given, followed by a brief introduction of how the thematic priorities and subtopics are described subsequently. Eleven thematic priorities have been elaborated and are described along a set of subtopics.

In section 0, an outline of measurement and benchmarking methods and instruments is given to assess the success of initiatives and projects along the strategic priorities.

The document concludes with a summary and an outlook of next steps (section **Error! Reference source not found.**).

2. Vision and mission of e-Georgia

Vision
The vision of e-Georgia is to become a more efficient and effective public sector offering integrated, secure, and high quality e-Services. Improved usage and participation enable an ICT driven sustainable economic growth.

Mission
The mission of e-Georgia is

- to ensure one-stop accessibility of secure and effective e-Services for citizens, businesses and non-governmental sector based on reliable and trustworthy infrastructure.

- to stimulate the demand and increased use of e-Services by citizens and businesses through high quality, efficient, effective, trusted and secure service delivery.

- to encourage the involvement of a skilled civil society and private sector in innovation and the development of e-Services in an open and transparent environment.

- to build a durable interoperability foundation for creating secure, trusted channels for the sharing and exchange of information, information systems and technologies in state agencies, local self-government territories, municipalities and private organisations.

- to further a competitive and innovative business environment and to support entrepreneurship, partnerships between civil society, as well as the public and private sector in the field of ICT.

- to establish effective information security and privacy policies protecting well against information and cyber-security threats.

3. Thematic priorities

Effective ICT use in the public sector touches a variety of topics. Services in e-Government address government, citizens and businesses alike. Government agencies need backend services and a framework for reliable and secure infrastructure to ensure trust in investments. Selecting the thematic priorities from the vast amount of relevant topics is a challenging task. The strategy emphasises priority aspects and issues identified in several workshops with key actors in the public and private sectors. Derived from the vision and mission of the e-Georgia strategy, the following thematic priorities are identified:

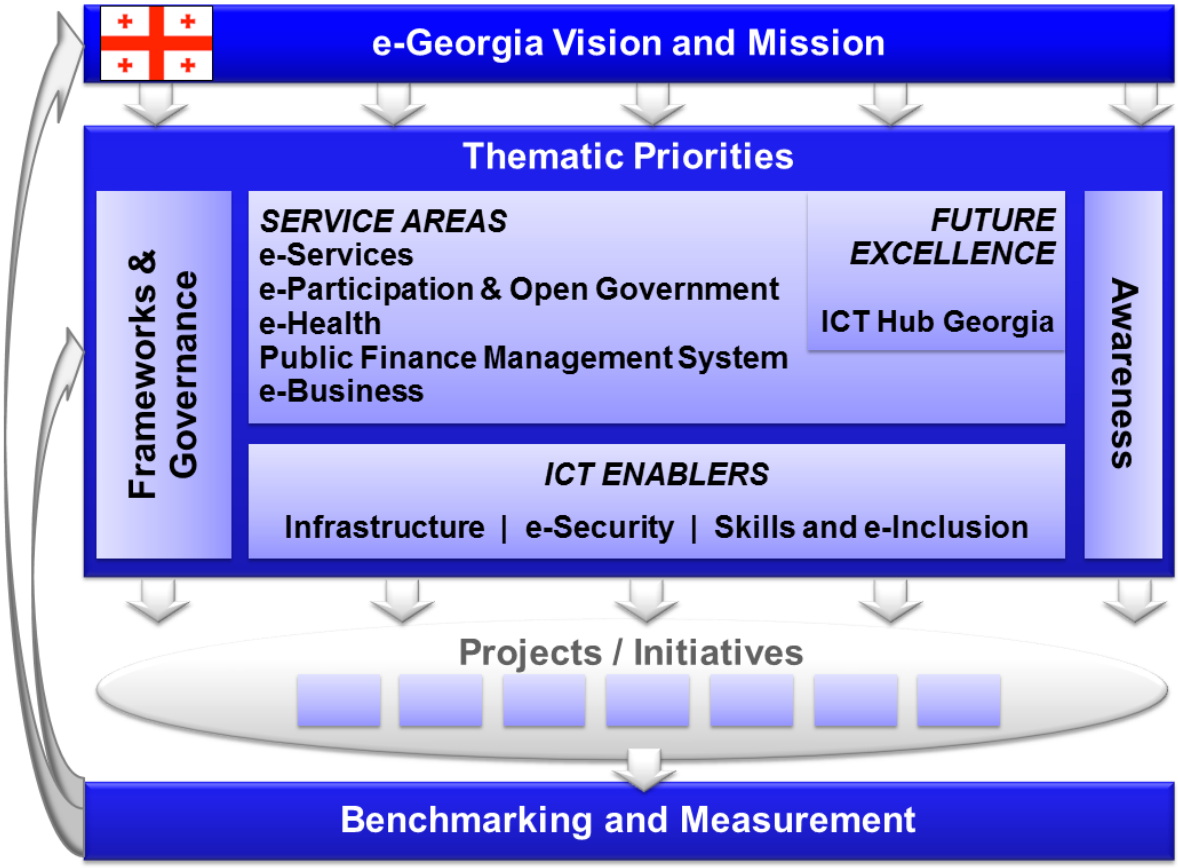


Figure 1: e- Georgia strategy 2013-1018

To operationalise the overall mission and vision of the e-Georgia strategy, each section is structured as follows:

a. **Introduction and scope:**
   Defines the scope, rational and importance of a specific theme and any relevant sub-topics, in relation to the strategy's overall mission and vision.

b. **Current situation and initiatives:**
   In light of the thematic scope this section sets out the current situation in Georgia. The current situation is based on available statistics, analysis, input from stakeholders, previous initiatives and experience in relation to the overall

theme and any relevant sub-topics. Where appropriate, existing gaps are outlined, too.

c. **Goals and action plans:**
   Based on the specific theme and the current situation, this section consists of two parts. First, it outlines the expected **stakeholder benefits** as defined by the thematic focus and sub-topics. Second, it outlines the specific **actions and the expected outputs** underpinning the goals for the theme, and thus the overall mission and vision of the e-Government strategy.
   Specific actions outlined constitute the strategy's action plan for a given theme. actions are numbered, described and they outline the expected output, timeline and responsibility of organisations for implementation. In short, the section lists the actual tangible benefits for each stakeholder – mainly citizens, businesses and/or government – and constitutes the rationale for the action plans (i.e. outcomes and impact).

d. **Performance targets:**
   Following the stakeholder benefits and activities in the action plan, this section defines the specific, measurable targets expected from the produce in the form of an indicator[2]. The performance targets are the indicators used to measure the outputs and the outcomes (i.e. benefits) as defined for each activity in the action plan, i.e. outputs and completion date.

Where topics and action plans are horizontal (e.g. awareness initiatives) and thus relevant for one or more sections, cross reference is made. In practice, the structure allows for each thematic section to function as an individual strategy and action plan for a given priority area.

The structure has been developed in consultation with international experts and Georgian stakeholders in February-October 2013.

The next part details the eleven thematic priorities of the Digital Georgia strategy as outlined before.

[2] Note: an indicator may be quantitative as in % or a number, but could also be a document or service produced.

3.1 e-Services

To capitalise on the potential of ICT and to optimise the efficiency and effectiveness gains of investments, Georgia must concentrate its efforts on ensuring the availability (i.e. supply) and use (i.e. demand and take-up) of online public services by government, businesses and citizens.

Working with stakeholders from different target groups (i.e. government, businesses, citizens, and non-governmental and interest organisations), the "service" track of the e-Georgia strategy therefore focuses on the supply, demand, awareness and actual take-up of online services. This includes G2C, G2B/G2NGO/B2G and G2G services.

Focus will be on an effective public service channel strategy with the aim to move interaction from the analogue realm of physical, telephone and written service requests to the digital world. These efforts will be supported by user-friendly, accessible and personal e-Services (see section 3.1 e-Services, 3.2 e-Participation and Open Government, 3.7 Infrastructure, 3.8 e-Security, 3.9 Skills and e-Inclusion, and 3.10 Enabling frameworks and governance). Training efforts (see section 3.9 Skills and e-Inclusion) and active promotion of digital services use (see section 3.11 Awareness) will be initiated and complemented by training material on how citizens and businesses access and use my.gov.ge, other high-impact services provided through different channels as well as e-IDs and digital signatures.

In short, this section of the e-Georgia strategy focuses on the supply side, that is: Planting the seeds of sophisticated G2C, G2B and G2G e-Services i.e. ensuring the availability and supply of user-friendly and accessible electronic services.

The demand and take-up, that is reaping the benefits of e-Services – i.e. ensure use, take-up and thus demand for electronic services developed – are the focus of section 3.11 Awareness.

As e-Health is a key thematic priority of the e-Georgia strategy, this document contains e-Health in a separate section (see section 3.3 e-Health). It thereby refers to all three domains of e-Services provision: G2C, G2B and G2G.

Likewise, the PFMS is of key importance to the e-Georgia strategy. Hence, a separate thematic priority is formulated in this document (see section 3.4 PMFS). It also regards e-Services provision for all three different domains: G2C, G2B and G2G.

3.1.1 e-Services for citizens (G2C)

a. Introduction and scope

Priority will be given to high-impact government to citizen (G2C) service and the availability of online services via the my.gov.ge portal. But also the increased availability of e-Services across the country through self-service kiosks at Public

Service Halls, Community centres and libraries, as well as commercial channels such as Payment Kiosks.

b. Current situation and initiatives

Based on the 2012 UN e-Government Survey, Georgia is ranked 72nd (of 193 countries evaluated) with an e-Government score of 0.5563 and an online availability score of 0.6013. Although Georgia's online service availability score have increased since 2008 (i.e. up from 0.2476 in 2010 and 0.3545 in 2008) there is a large gap between the availability (i.e. supply) of e-Service and the actual use (i.e. demand and take-up) of the services. Key examples are property tax declaration with almost 100% take-up[3], while the change of residential address is hardly used online.

To date investments have focused on the development and implementation of digital services for the issuing of passport, ID and residency, life event services related to marriage, divorce, birth adoption, change of name, death, power of attorney etc.

Similarly the development of key enablers for sophisticated online service provision has been primary focus areas. This includes: Introduction of identity cards (e-ID) (see section 3.7.3 Infrastructure – Authentication) and the development of the my.gov.ge portal (see section 3.7.4 Infrastructure – One-stop portal my.gov.ge) on which e-Services are integrated.

A full list currently available e-Services for citizens in provided in .

c. Goals and action plans

Stakeholder benefits:
To optimise the value-added for citizens and government the e-Georgia must focus on both the supply and the demand and take-up of government e-Services. That is to create a cost-efficient public sector through redesigned and automation of service delivery processes and channels, thus: Planting the seeds of sophisticated G2C e-Services i.e. ensure the availability and supply of user-friendly and accessible electronic services. To ensure added value for citizens, digital services not only complement existing service delivery channels, but allow for convenient, time saving, 24/7 access – and if service design is user-centric, personal and proactive the digital channel constitutes an improved service experience.

In other words, both citizens and government benefit from user-friendly, accessible and value adding services online, e.g. high quality of service delivery, cost and time savings by using the electronic services. Similarly the benefit for government is an optimised return on investment by channelling service requests and service delivery from the more expensive analogue (i.e. written, in person, by telephone) to the cheaper digital channel (i.e. e-Services) thus increasing internal efficiency and releasing resources (human and financial) for other activities.

Actions and expected outputs:

Table 1: Action plan for e-Services for citizens (G2C)

[3] When the RS.GE was rolled out, rumours indicated mandatory use of this service.

No	Title	Description	Output	Time-line	Res-pon-sibility
1	User-friendly, personal and relevant e-Service design, and evaluation processes	Project on user-friendly, personal and relevant e-Service design. Focus on minimum requirement for user-friendliness and web-accessibility (as defined by W3C's WCAG standard[4]) in e-Services plus common-look-and-feel principles. A definition of quality of service and relevant parameters (min./max.) needs to be established; This is then used as input for contracting and especially monitoring of the infrastructure services along the lines of the United Kingdoms gov.uk's T10 design principles[5] or Denmark's 24 user-friendliness and web-accessibility minimum requirements for e-Services[6] (see section 3.2 e-Participation and Open Government).	Guide launched Agreement on evaluation process	2014 - 2015	DEA
2	Transaction statistics, user rating and commenting on e-Services	Transaction statistics and user-rating and commenting on e-Services project focusing on the automated collection of transaction data (i.e. take-up of e-Services), qualitative user-feedback (i.e. rating and commenting). Focus should be on services available and activated via e.g. my.gov.ge. Objective is to management information, progress on strategy objectives, monitoring of e-Service take-up in comparison to analogue channels, input to service development and re-design. Also relevant to link to knowledge base of FAQ's and website statistics for better service design and service routes (see section 3.2.1 initiative 1 and section **Error! Reference source not found.**)	Technical solution launched	2014	DEA, e-Service providers
3	Feasibility study on better digital communication with citizens and businesses	Perform a feasibility study with the following objectives: - what are the best means of digital communication with specific target audiences: how to introduce digital channels for G2C communication, study of potential of digital post/email services, digital post/sms for news, reminders, changes, updates etc. - how to introduce digital channels of communication addressing school-parent-student-teacher relations over intranet and e-Services. (see also section 3.10 Enabling frameworks and governance) - how to introduce digital channels of communication among actors (citizens and businesses) to engage them in the co-production of	Recommendations made	2014 - 2015	MoJ, MES

[4] http://www.w3.org/TR/WCAG20
[5] https://www.gov.uk/designprinciples
[6] http://arkitekturguiden.digitaliser.dk/godselvbetjening

		services e.g. fix-my-street, garbage/rodents, participatory budgeting, local planning to optimise the alignment of user-expectations and needs with public sector service delivery obligations. (see also section 3.2 e-Participation and Open Government).			
4	Improve e-Services and communication	Based on recommendations extracted from the feasibility study (see initiative 3), initiate measures to improve channels of digital communication – also in relation to e-Services delivery and quality - and further aspects along the recommendations (links to section 3.11 Awareness) accordingly.	Improved e-Services and communication means	ongoing	All e-Service providers
5	See titles, descriptions, output, timeline and responsibility outlined in section 3.1.2, initiative 6.				
6	See titles, descriptions, output, timeline and responsibility outlined in section 3.1.3, initiatives 8.				

d. Performance targets

The performance targets for planting the seeds of sophisticated e-Services are (i.e. supply focus):

- Guide on user-friendly, personal and relevant e-Service design available in 2014, with evaluation process agreed by 2015 (underpins e-Service take-up targets).
- Transaction statistics, user-rating and commenting on e-Services are launched and fully functional (underpins monitoring of e-Service take-up targets) by 2014.
- Feasibility study on better digital communication performed and recommendations developed by 2015.
- Implementation of the recommendations made in feasibility study better digital communication performed and recommendations developed by 2018.
- Georgia improves its e-Services score in the biannual UN e-Government Survey with 5 points by 2014, 10 points by 2016, and 20 points by 2018 from its 2012 base of 72nd position (0.556 e-Government Index in UN Study 2012).[7]
- 90% of central public G2B/G2NGO/B2G services and 70% of services from local governments and private sector are available through multiple channels at transactional level in a user-friendly and efficient manner through the one-stop portal (single hub) accomplishing public duties.

3.1.2 e-Services for business (G2B and B2G) and civil society organisations (G2NGO)

a. Introduction and scope

An important step towards creating a vibrant and globally competitive business environment is reduction of administrative burden and the efficient and effective ICT

[7] Note that this performance target is an accumulation of a selected number of all G2C, G2B and G2NGO e-Services. The performance target is not associated to a specific activity.

and e-Service enabled interaction between the CSOs[8], the private and public sector. The provision of G2B, government to civil society organisations (G2NGO) and B2G e-Services is an important pillar alongside innovation and economic growth in a society.

In general, companies and agencies of the non-profit sector have higher contact frequency with governments compared to citizens. Often ICT is an integral part of business processes and internal organisation in the private sector. Combined with the higher capacities for technology use and the higher penetration of ICT in the private sector, businesses should already be interacting with government online. Information and data delivery from companies to public authorities should be based on a mature system-to-system level integration. Likewise, public procurement processes along the value chain should be fully digital.

The key to cost reduction and process simplification is to systematic analysis and streamlining of routine processes for reporting and for requesting permissions from government through direct online transmission of data. A thorough analysis of where the quick wins to improve G2B and B2G services are is crucial to ensure success of sustainable and competitive growth. Smart use of ICT goes beyond the mere digitisation of existing processes. It requires process analysis, process design and common specification of data exchange formats or interfaces to direct system-to-system integration of reporting mechanisms (see section 3.10.3 Enterprise Architecture frameworks and process alignment).

Another important element of G2B e-Services relates to the trade between governments and the businesses. A priority area of public sector modernisation with high volume, high impact, and value-adding is the procurement of goods, services and works through online means. Along the whole procurement chain, many steps can be transferred to online mode. Best effect on cost savings, on ensuring standards and quality, and on speeding up processes is reached when the whole value chain of public tendering and public procurement is carried out online. Standards for e-Notifications, e-Tendering, product catalogues, qualification profiles, e-Orders, e-Invoices, e-Payment etc. are to be aligned with international standards to enable also a wider international competition and investments from foreign companies in Georgia (see also section 3.10.2 Interoperability framework).

Similar to G2C services, the development and implementation of e-Services for businesses and CSOs has to prioritise high-impact services via the my.gov.ge portal, or via other dedicated portals, and multiple channels such as a myBusiness portal mybusiness.gov.ge, self-service kiosks at Public Service Halls, Community Centres and libraries, as well as commercial channels (see section 3.7 Infrastructure and 3.11 Awareness).

b. Current situation and initiatives

[8] Note that CSO (Civil Service Organisation) in a Georgian context is the legal equivalent of a NGO (Non-Governmental Organisation). Thus in a Georgian context G2NGO refers to Government to CSO e-Services and initiatives.

Although Georgia is ranked 9th (of 185 countries) in the World Bank's ease-of doing-business survey[9], there is potential and opportunity to reduce costs of doing business in the country through smarter government-to-business interaction. This potential is also stressed by the 2012 UN e-Government Survey and the country's online service availability score (i.e. supply). Still the level of G2B e-Services use (i.e. demand and take-up) remains relatively low.

Georgia has implemented some e-Services for businesses, such as the mandatory use of the Revenue Services' digital declarations through www.rs.ge – providing a number of e-Services on revenue reporting with direct integration among company ICT and government systems, e-Procurement or e-Auction, which are all part of the Public Finance Management System (see also section 3.4 PFMS).

Another service is the e-NRMS (electronic National Resource Management System), which has been developed by the MoF. The system is designed to be used by the governmental organisations and businesses for natural resource management. The system incorporates services for private sector (e.g. bank services) and provides e-Services for the following domains: G2C, G2B and B2G.

e-Services for spatial, geological, environmental and pollution related issues are offered by the Ministry of Environment Protection and Natural Resources on www.meteo.gov.ge.

Of particular relevance to businesses is a key enabler for sophisticated online service provision: the e-Stamps as described in section 3.7.3 as an infrastructure service for businesses and governments.

c. Goals and action plans

Stakeholder benefits:
The public e-Services for businesses are built on standards, which have been commonly developed. Likewise, they build on secure and trustworthy infrastructures, with according protection against fraud and misuse. Standards and system-to-system integration (with optimised logistics) have made it possible that routine processes with governments have been neatly integrated into business and government ICT solutions - transmission of data is now possible with just one mouse click. As a result, these e-Services (e.g. online fulfilment of reporting statistical data and registration procedures towards public administration) save time and thereby cost for both, companies and public administration.

The introduction of e-Procurement and e-Tendering standards in B2G e-Services has led to greater competition, including competing bids from organisations from different countries. Transactional costs incurred by the public sector when purchasing goods and services have been reduced. Similarly, businesses benefit from reduced transactional costs for public tendering and public procurement on their side.

Actions and expected outputs:

9 http://www.doingbusiness.org/~/media/giawb/doing%20business/documents/profiles/country/GEO.pdf

Table 2: Action plan for 3.1.2. e-Services for business (G2B and B2G) and non-government organisations (G2NGO)

No	Title	Description	Output	Time-line	Res-pon-sibility
1-4	See titles, descriptions, output, timeline and responsibility outlined in section 3.1.1, initiatives 1-4.				
5	Simplification of routine procedures for statistical reporting and specification of standards for data exchange	Governments and businesses collaborate in the improvement of cross-organisational transactional e-Services implementation therewith improving process chains through thorough analysis of value-chains and data exchange formats. Analysis leads to optimization of process chains supported through ICT and to specification of standards for data exchange on system-to-system level. Activities are prioritised on parameters such as 'which processes represent quick-wins and high impact'; 'how often occur such service execution'; 'how complex is the process for transition to full online execution'; To implement such service improvements, Governments call for competitions on innovative service implementation and engage companies in the development and implementation of optimisations. Implementations are on the constraint of one for all (i.e. one project implementing the reference process and standards specification for a specific e-Service), a set of competitions leading to covering the main e-Services interactions across G2B for modernization in statistical reporting.	Optimised e-Services for reporting procedures in G2B	2014 - 2016	GeoStat
6	e-NRMS – electronic National Resource Management System	Continued development of e-NRMS. Need to expand e-NRMS with Sawmills management system, Electronic messages for business processes, sale of timber resources through several banks (i.e. e-Services), GIS module enabling layered map of Georgia in content of national resources. Implementation of e-Services.	e-NRMS in place with new functions	2014 - 2018	MoF
7	meteo.gov.ge	Continued development of spatial, geological, environmental and pollution related services offered on www.meteo.gov.ge.	Optimise site and services available online	2014 - 2018	MEPNR
8	See titles, descriptions, output, timeline and responsibility outlined in section 3.1.3, initiatives 8.				

d. Performance targets

The performance targets for planting the seeds of sophisticated e-Services are (i.e. supply focus):

- e-NRMS fully rolled out and in use by citizens and businesses for natural resource licensing and purchasing and automatisation of business processes by 2018, including GIS module with layered map functionality implemented

- Transactional costs incurred by the public sector when purchasing goods and services have been reduced by 15% in the period 2014-2018.
- Transactional costs incurred by public tendering and public procurement by businesses is reduced by up to 10% in the period 2014-2018.
- For the period 2014-2018 Georgia retains its position in the top-10 of countries in which it is easy to do business as measured by the World Bank.[10]

3.1.3 e-Services for government (G2G)

a. Introduction and scope

Priority will be given to high-impact government to government (G2G) services. The focus is on internal and inter-governmental digital services. Principles of joint-development and maintenance, shared infrastructure, registries and data, as well as standards are the building blocks for efficient and effective G2G e-Services (see also 3.1.1 e-Services for citizens and 3.1.2 e-Services for businesses). Similarly G2G services is a key enabler of high-quality, efficient and effective G2C and G2B online service provision as well as providing some of the back-office infrastructure for service delivery via analogue channels such as call-centres and physical service centres (e.g. Public Service Halls and Community Centres).

b. Current situation and initiatives

While Georgia has improved its World Bank ease-of-doing-business ranking and its UN e-Government e-Service availability and e-Government readiness scores since 2008, there is a need and potential to improve G2G services thereby ensuring a lean and effective public sector geared to providing high-quality value-adding digital G2C and G2B services (i.e. supply) and encourage the actual use (i.e. demand and take-up) of the e-Service offers.

G2G service like joint development of systems and infrastructure, sharing of data, is essential if Georgia is to be a vibrant and globally competitive economy providing high-quality and cost-effective G2C and G2B services while reducing administrative burden.

To date Georgia has focused on the development and implementation of back-office systems and archives which are shared between different government entities. Since the Public Finance Management System (PFMS) is a separate priority theme (see section 3.4).

c. Goals and action plans

Stakeholder benefits:
Georgia must focus on the creation and supply of cost efficient and process optimising G2G e-Services. The goal is to ensure that government benefit from user-friendly, accessible and value-adding services online, e.g. high quality of service delivery, cost and time savings by using the electronic services. Similarly the benefits for government is optimising return of the investments already made in ICT by automating the

[10] Note that this performance target is an accumulation of a selected number ICT and none-ICT elements. The performance target is not associated to a specific activity.

exchange of data, joint development and sharing of back-end systems required for the day-to-day functioning of an efficient public sector. Similarly ICT investments should focus on solutions which underpin the channelling of G2C and G2B/G2NGO service requests and service delivery from the more expensive analogue (i.e. written, in person, by telephone) to the cheaper digital channel (i.e. e-Services). Thus increasing internal efficiency and releasing resources (human and financial) for other activities.

Actions and expected outputs:

Table 3: Action plan for e-Services for government (G2G)

No	Title	Description	Output	Time-line	Res-pon-sibility
1-3	See titles, descriptions, output, timeline and responsibility outlined in section 3.1.1, initiatives 1, 2 and 4.				
4	See titles, descriptions, output, timeline and responsibility outlined in section 3.1.2, initiatives 6.				
5-7	See titles, descriptions, output, timeline and responsibility outlined in section 3.4, activities 1-3.				
8	e-Document	Complete development and deployment of digital ID for access and ensure signature functionality is tested, completed and rolled-out Integration of MoF e-Document with MIA and MoJ systems to ensure interoperability and data exchange.	e-Document rolled out and in use	2014 - 2015, with further improvements ongoing	MoF / MIA / MoJ/DEA/NAPR

d. Performance targets

The performance targets for planting the seeds of sophisticated e-Services are (i.e. supply focus):

- By 2015, 90 % of Government organisations (including regions) are integrated into e-Document.
- Governments use fully fledged workflow management for case handling with collaboration among public servants and sharing of opinions on electronic documents; businesses can inform themselves about the status of progress through their personalised my.gov.ge page.

3.2 e-Participation and Open Government

Open Government can be understood as a comprehensive view on how an (e-)Society can be shaped. The goal is an ubiquitous engagement of citizens in all aspects of developing a (e-)Society. The approach of openness can be seen from different societal perspectives, e.g. Open Commons (Open Content, Open Data, and Open Source), Open Access (to scientific publications and data), OpenGLAM (Galleries, Libraries, Archives and Museums) or Open Innovation. Open Government focuses on the implication of openness to the public sector.

Open Government emphasises on transparency, (e-)participation, and collaboration. In September 2011, the Georgian government joined the Open Government Partnership (OGP) and submitted an action plan 2012-2013[11] with the goal to "making their governments more transparent, accountable, innovative and open to citizen participation." Between 2010 and 2012, Georgia dramatically improved its position in the United Nations e-Participation index. Its global ranking jumped from 127 to 64, and its score out of 100 from 6 to 21 – a 250% increase. However, to move further up the global ladder and get closer to a score of 100, Georgia clearly needs to do a lot more.

Enabling citizens and businesses to become engaged in more and more aspects of the work of the public sector is essential as part of the Open Government agenda. This involves raising the awareness of, and trust in, government, increasing the take-up of e-Services, participating in e-Service design and delivery, and participating in policy making.

Four main areas of e-Participation in the Georgian context are identified: feedback on e-Services, (co-)design of e-Services and Open Data, transparency and Open Government and lastly, decision-taking and policy making.

3.2.1 Feedback on e-Services

a. Introduction and scope

Citizens and businesses, as users of e-Services themselves know best whether these services are easy to find and use as well as actually provide them with the result they need. Being able to easily provide online feedback to government on specific services or services in general is essential both to improve the quality of services and for the government to understand which e-Services are missing as well as feed into to the overall e-Government strategy. Feedback often consists initially mainly of complaints, but if users find that their complaints are listened to and even acted on, then a beneficial dialogue between users and government can develop as a form of crowd sourcing leading to improved user satisfaction, greater e-Service take-up and also lower costs for government.

Types of feedback mechanisms can include:

[11] http://www.opengovpartnership.org/sites/www.opengovpartnership.org/files/country_action_plans/OGP_AP_Final_eng.pdf

- Comment/complaint facility, e.g. at bottom of webpage, from pull-down menu, after service delivered, etc.
- Chat rooms or an instant messaging feature.
- Discussion forums, blogs.
- Online surveys or consultations.
- Online polls.
- Use of social media.

b. Current situation and initiatives

Currently, only a general "provide your suggestion" feedback mechanism is in place on the my.gov.ge portal and the Public Service Halls have a Facebook presence[12]. Neither my.gov.ge nor the Public Service Halls Facebook page are targeted to specific services or user-segments. A survey on e-Participation in Georgia concludes that "web-pages of public institutions are mainly focused on one-sided communication which is expressed through sharing information and not providing such discussion platforms as blog or forum. The majority of the monitored web-pages do not provide online service evaluation forms which could serve as means of identifying problems and searching for solution together with citizens."[13]

The CSO "Transparency International Georgia" is providing the service "Fix My Street Georgia"[14] where users can provide feedback on infrastructure problems in Tbilisi.

c. Goals and action plans

Stakeholder benefits:
More users (citizens and businesses) provide an increasing amount of feedback on the e-Services they use, leading to greater user satisfaction and involvement with, and trust in government. Government can then act on the user (citizen and business) feedback received, leading to better e-Services which improve user satisfaction.

Government agencies provide feedback to users (citizens and businesses) on their feedback, thereby initiating increasing beneficial dialogue between government and users on all aspects of e-Services design, delivery and impact. e-Services for both citizens and businesses are improved by user feedback and achieve higher take-up, thereby also saving money for government as users move from more expensive traditional channels to cheaper digital channels for many services.

Actions and expected outputs:

Table 4: Action plan for Feedback on e-Services

[12] https://www.facebook.com/publicservicehall?fref=ts
[13] http://www.idfi.ge/?cat=researches&topic=97&lang=en
[14] http://chemikucha.ge

No	Title	Description	Output	Time-line	Res-pon-sibility
1	User feedback mechanisms	Define, design and implement which user feedback mechanisms are relevant and for which e-Services, including types of mechanism, types of e-Service, types of user, timeline, funding, responsibility, etc. (linked to initiative 2 below and section 3.1.1 initiative 2).	User feedback implementation plan	2014	DEA
			User feedback implementation plan implemented	2016	DEA
2	Internal feedback handling	Define, design and implement internal systems for accepting, considering and acting (or not) on feedback, including internal procedures and organisational arrangements, etc., for responding to users individually or personally, and providing an archive of feedback and responses, by type of service and user, who, what, when, etc. (linked to initiative 1 above)	Internal feedback handing plan,	2014	DEA
			Internal feedback handling plan implemented	2014	DEA
3	User awareness and incentives on feedback	Define, design and implement user awareness and incentives activities and campaigns on feedback, could include prizes, competitions, special features, etc. varied by types of e-Service, types of user, etc. (see section 3.11 Awareness).	User awareness and incentives plan for activities on feedback	2015	DEA
			User awareness and incentives plan implemented	2015	DEA
4	Public servants awareness and incentives	Define, design and implement public servants awareness and incentives activities and campaign on feedback to public services as well as training on use of social media (see section 3.11 Awareness).	Public servant awareness and incentives plan on feedback.	2015	DEA
			Offer social media training for public servants.	2014	Civil Service Bureau
5	Social media strategy	Develop a social media strategy including guidelines for public servants on how to make us of social networks (see section 3.11 Awareness).	Guidelines on how to set up a social media strategy and how to use social media developed.	2014	Public Service Hall

d. Performance targets

- User (incl. civil servants) feedback systems and mechanisms implemented by end of 2014, including informing back on actions taken by government.
- User awareness and incentives activities on feedback implemented from beginning of 2015 (see section 3.11 Awareness).
- 3 seminars for public servants held on Social Media use in interactions with citizens and businesses by end of 2014.
- Guidelines for development of social media strategies developed and applied by all federal agencies by end of 2014.
- 10% of online service users provide feedback by 2015.
- User (both citizen and business) satisfaction with, and trust in, e-Services increases by 20% by 2016 (from the first baseline in 2014).

3.2.2 (Co-) design of e-Services and Open Data

a. Introduction and scope

As with user feedback to e-Services, citizens (typically through civil organisations) and businesses are in a good position to design their own e-Services either as co-creation activities with government or on their own or with other actors. In order to encourage this to get the benefits for both users and government of developing the demand-side, government should provide structured guidance within which service co-creation can happen. 'Guided' service co-creation will reduce the burden on users of participating in this way whilst maximising the benefits for both public administrations and users, To do this successfully the latter need Open Data, incentives, supports, tools, guidelines, crowd sourcing facilities, events, hackathons, competitions, etc. The goal should be to help establish, nurture and maintain ecosystems and communities of actors from the private and civil sectors, sometimes with government, and this will also help develop business e-Services thus boosting the commercial sector, as well as strengthen civil society and the e-Skills ordinary people possess.

b. Current situation and initiatives

Data.gov.ge is operational, but it is a navigation portal linking to information provided by different public sector institutions rather than an Open Government Data portal, where actual data can be retrieved. The planned e-Participation portal ichange.ge has not yet been launched.

With the Institute for Development of Freedom of Information (IDFI)[15] and Transparency International Georgia[16] very active CSOs exists that carry out research projects on Freedom of information, public information[17], e-Participation and preventing corruption in Georgia.

c. Goals and action plans

Stakeholder benefits:
The more users (CSOs and businesses) are involved in the (co-)design of e-Services, and more e-Services that are (co-)designed, the more relevant and user-friendly e-Services eventually become – thereby increasing user satisfaction and involvement with, and trust in, government. More G2B and G2C e-Services will in turn both strengthen civil society and boost the business economy, especially in the SME and ICT sectors. If government has some of its relevant e-Services developed partially or wholly by others, it is saving money as well as improving its relations with both businesses and civil society.

e-Services for both citizens and businesses are improved by user (co-)design and thus achieve higher take-up, thereby also saving money for government as users move from more expensive traditional channels to cheaper digital channels for many

[15] http://www.idfi.ge
[16] http://www.transparency.ge
[17] e.g. http://www.opendata.ge

services. Government increases beneficial collaboration with citizens, civil organisations and businesses on all aspects of e-Services design, delivery and impact.

Actions and expected outputs:

Table 5: Action plan for (Co-)design of e-Services and open data

No	Title	Description	Output	Time-line	Res-pon-sibility
1	Open Government Data	Define, design and implement which public data can be made open and placed on or linked to data.gov.ge, in machine-readable, linked datasets. Robust traceability and security mechanisms in place should be in place, with clear mechanisms for minimum quality, coherence, provenance and updating, but without over-ambition on completeness and quality which restricts release given that the users will often be able to correct and improve data. This design will include which ministries and other entities as well as timeline, funding, responsibility, etc.	Open Government Data plan	2014	DEA
			Open Government Data plan implemented	2014	DEA
2	Other Open Data	Define, design and implement which other data can be made open and placed on or linked to data.gov.ge, also taking account of the issues in Action 1 above. Other relevant open data which could be considered include sensor/actuator data from the environment, data collected from social networks and scraped from the web, content co-creation platforms, crowd sourced data from citizens, civil organisations, businesses, etc. This design will include which sources as well as timeline, funding, responsibility, etc.	Other Open Data plan	2014	DEA
			Other Open Data plan implemented	2014	DEA
3	Supporting user ecosystems and developing the demand side	Define, design and implement systems for supporting user ecosystems and communities and generally developing the demand-side, including for example structured guidance, supports (like blogs and good practice examples) tools, events, hackathons, competitions, etc. There is specific potential at local level, especially in cities where 'smart city' approaches should be considered, given that more people tend to be interested in local 'everyday' services than the typically more general and administrative services at national level. Such local services, fuelled by local data and other supports developing e.g. smart phone apps, could include health, education, care, transport, infrastructures, utilities, parking, accidents, clean and safe environments, congestion and pollution watch, culture, amenities, leisure, sports, security, crime watch, weather, etc. This design will include which users, by type of user as well as timeline, funding, responsibility, etc.	User ecosystem development plan	2014	DEA
			User ecosystem development plan implemented	2014	DEA
4	Internal capacity for external	Define, design and implement procedures and capacity for collaborating with other actors (citizens, civil organisations and	Internal capacity for external	2014	DEA

No	Title	Description	Output	Time-line	Res-pon-sibility
	collaboration	businesses), including internal procedures and organisational arrangements, etc. Follow up on the Forum of CSOs established under the coordination of the Analytical Department of the Ministry of Justice	collaboration plan		
			Internal capacity for external collaboration plan implemented	2014	DEA

d. Performance targets

- Open Government Data plan implemented by end 2014
- Other Open Data plan implemented by end 2014
- Plan for supporting user ecosystems and developing the demand side with appropriate resources and supports implemented by end 2014.
- Internal collaboration capacity systems and mechanisms for user e-Service (co-)design implemented by end 2014.
- 50% of all designated government entities are providing open data by end 2015.
- By end 2018, 100 e-Services/apps have been set up by different actors (private, public, civic) using previously published Open Government datasets
- By end 2015, there are 100 Open Government datasets in standardised machine readable and linked format, with robust traceability and security mechanisms in place.
- By 2018, there are 200 open datasets in standardised machine readable and linked format, with robust traceability and security mechanisms in place
- By 2018, there are 25 G2C, G2B or G2G e-Services developed and launched through government co-creation with citizens, civil organisations and/or businesses.

3.2.3 Transparency and Open Government

b. Introduction and scope

Linked to a broader policy of Open Government and open participation, transparency of government and public sector information, data and operations is essential to increase trust in these institutions, to reduce corruption and improve overall accountability and good governance. Such transparency helps to reduce the risk of performance failure and ensures better value for money, especially through continuous monitoring. A major pillar of transparency is often to have this cemented in legislation, for example through a 'freedom of information' act. There needs to be specific focus on information and data provenance, traceability, quality and accountability, including organisational and regulatory aspects. It can be difficult achieving the right balance between transparency and privacy, not just for citizens but also for politicians and civil servants who do need private spaces for free thinking and speculation before full publication of information. Robust privacy and protection of data is of fundamental importance to underpin these principles and to minimise the inappropriate or misuse of personal or other data.

b. Current situation and initiatives

Civil servants are obliged to submit their financial declarations the publically available site www.declaration.ge. Although this is a level of transparency unknown in most European countries, Georgia needs to improve in areas such as public sector and government transparency and openness. On the "Global Right To Information Rating", Georgia scores 97 of 150 points putting Georgia on the 29th place out of 95 countries.[18]

With the Institute for Development of Freedom of Information (IDFIhttp://www.idfi.ge) and Transparency International Georgia very active CSOs exists that carry out research projects on Freedom of information, public information, e-Participation and preventing corruption in Georgia. There is already the right of citizens/businesses to see own data and the right to see which government entities have requested/used their data. But a study of IDFI showed that "In conclusion, analysis of the Georgian legislation and its implementation in compliance with the standards of the Human Rights Committee shows that Georgia should improve legislative framework as well as administrative and court practices to provide transparency of public authorities and to be evaluated positively by the Human Rights Committee in the process of exercising obligations under the International Covenant on Civil and Political Rights."[19]

c. Goals and action plans

Stakeholder benefits:

Transparency and freedom of information can improve trust in government, increase accountability, reduce corruption, and overall lead to better governance. When non-government actors can ask questions and receive fair answers, this can improve the performance of government by ensuring better alignment with legal and regulatory arrangements as well as with the accepted standards and norms in society. This in turn lowers the cost and increases the efficiency of government by ensuring that financial and other resources are used appropriately and effectively. Transparency and freedom of information must also be balanced by the ability of politicians and civil servants to think innovatively, and by the need for individual citizens, organisations and businesses not to have their legitimate privacy breached. Transparency of public spending can be improved by disclosing open spending data in a machine readable format.

Actions and expected outputs:

Table 6: Action plan for Transparency and Open Government

No	Title	Description	Output	Time-line	Res-pon-sibility
1	Transparency and freedom of information (FoI) strategy and framework	Define, design and implement a transparency and freedom of information (FoI) strategy and framework in terms of what is needed for the e-Georgia strategy. This will include reviewing, improving and/or enacting appropriate laws, regulations and procedures. Appropriate government functions might include laws, regulations and other legal/constitutional provisions;	Transparency and freedom of information (FoI) strategy plan	2014	DEA
			Transparency and freedom of information (FoI) strategy	2014	DEA

[18] http://www.rti-rating.org/view_country.php?country_name=Georgia
[19] http://www.idfi.ge/uploadedFiles/files/Human%20Rights%20Committee.pdf

No	Title	Description	Output	Time-line	Res-pon-sibility
		public procurement; public budgets: public salaries; public appointments; public sector functions and processes; right of citizens/businesses to see own data; right of citizens/businesses to see which government entities have requested/used their data,	plan implementation		
2	User awareness and incentives on trans-parency and freedom of information (FoI)	Define, design and implement user awareness and incentives activities and campaigns regarding transparency and freedom of information (FoI). This could include setting up a website or developing training courses explaining, listing and linking to publically available information, the relevant laws, regulations and procedures, how to ask questions under FoI, etc. The website and courses should also provide explicit information about the e-Participation policy or mission, a calendar listing upcoming e-Participation activities, a statement committing the government publically to incorporating the results of e-Participation into its decision making process, etc. (see section 3.11 Awareness).	User awareness and incentives plan for transparency and freedom of information (FoI)	2014	DEA
			User awareness and incentives plan for transparency and freedom of information (FoI) implemented	2014	DEA
3	Internal capacity for trans-parency and freedom of information (FoI)	Define, design and implement internal systems and capacity for the transparency and freedom of information (FoI) strategy, including internal procedures and organisational arrangements. Specific issues will include how are information requests to be handled, by whom, within which time scale, etc., plus leadership issues and training and awareness for civil servants how to answer questions and liaise with the public.	Internal trans-parency and freedom of information (FoI) capacity plan	2014	DEA
			Internal trans-parency and freedom of information (FoI) capacity plan implemented	2014	DEA
4	Survey on trust in public information provided online by Governmen t	Develop and perform a survey to assess the level of trust in information provided by Government online based on the measures of transparency and FoI strategy plan.	Survey performed	2014 and subs eque nt every 2 years	DEA

d. Performance targets

- Transparency and freedom of information (FoI) strategy plan implemented by end 2014.
- By 2016, 100% of public information as defined by GoG Decree No 219 of 2013/08/26 is available online.
- Citizen/business/politician surveys on trust in public information provided online by government conducted in 2014.
- Citizen/business/politician surveys on trust in public information provided online by government show increases in 2016 and in 2018.

3.2.4 e-Participation in decision- and policy-making

a. Introduction and scope

In order to increase trust in government, and enhance good governance and democracy, the whole of society (citizens, communities, civil organisations and businesses) should be able to participate in appropriate public decision- and policy-making. Government itself does not have a monopoly on knowledge or wisdom in order to develop the best (i.e. most efficient, effective and balanced) policies needed, whether at national or local levels. ICT offers many new possibilities to improve the quality and impact of public policies and decision-making, including online dialogue, blogs, social media and crowdsourcing which can enable the involvement of a broader constituency of participants, as well as 'big data' which can help ensure that policy decisions are informed by a good evidence base.

b. Current situation and initiatives

The web-site of the Legislative Herald (www.matsne.gov.ge) has a special module allowing everyone to comment on any article of draft or enacted laws and bylaws and provide their opinions.

The planned e-Participation website Ichange.ge which will include e-Petitions is not yet operational.

In Georgia, public dissemination of the draft budget is a practice which is stipulated by the municipal statutes, and public consultation is compulsory. The trustees appointed by the local executives in the settlements and communities have the right to organise public discussions on the draft budget, to prepare a summary of the discussion and to submit the comments and proposals to the head of administration.[20] To further strengthening a transparent budgeting process, budget data should be published in the Open Government Data portal and recommendations of the International Budgeting Partnership should be considered.

c. Goals and action plans

Stakeholder benefits:
More citizens, CSOs and businesses becoming involved in public decision- and policy-making improves the quality, impact and acceptance of decisions and policies, which in turn benefits the whole of society. More involvement by citizens, communities, civil organisations and businesses in public decision- and policy-making increases trust in government and enhances good governance. The involvement by citizens, communities, civil organisations and businesses in public decision- and policy-making at local level, for example in the context of 'smart community' and 'smart city' development, has special importance given that people tend to be more interested in

[20] See "Report on the CDLR survey of the role of central/regional government in participatory budgeting at local level" https://wcd.coe.int/com.instranet.InstraServlet?command=com.instranet.CmdBlobGet&InstranetImage=1965487&SecMode=1&DocId=1801348&Usage=2

local decisions and policies which directly affect their everyday lives. This also strengthens community life and cohesion.

Actions and expected outputs:

Table 7: Action plan for Decision- and policy-making

No	Title	Description	Output	Time-line	Res-pon-sibility
1	National e-Participation strategy and framework for decision and policy making	Define, design and implement a national level e-Participation strategy and framework in terms of what is needed for the e-Georgia strategy in public decision- and policy-making. This should include working closely with groups/organisations representing citizens, businesses, politicians, etc. Facilities could include crowdsourcing, e-Petitions, e-Participative budgeting, "political compass", opinion mining, sentiment analysis and web-crawling/scraping of online traffic (e.g. social media networks, newspapers and other public media sources), archived material, etc. This should be linked to 'big data' strategies drawing on both open public data as well as other open data from other legitimate sources, supplemented by 'soft data' or 'soft knowledge', for example using qualitative survey techniques, ethnographic surveys, etc., where the goal is ensure a good evidence base for developing and testing effective policies.	National e-Participation strategy plan	2014	DEA
			National e-Participation strategy plan implementation	2014	DEA
2	Smart locality e-Participation strategy and framework	Define, design and implement a 'smart locality' level e-Participation strategy and framework in terms of what is needed for local and city level e-Participation (linked as necessary to specific 'smart community' and/or 'smart city' plans) also taking account of the issues in Action 1 above. People are more interested in local decisions and policies, which directly affect their everyday lives, including community building, dispute and conflict resolution, the management of societal assets, including land, buildings, etc. This can also be linked to local e-Service development fuelled by local data and other supports, smart phone apps, etc.	Smart locality e-Participation strategy plan	2014	DEA
			Smart locality e-Participation strategy plan implementation	2014	DEA
3	User awareness and incentives on e-Participation	Define, design and implement user awareness and incentives activities and campaigns regarding e-Participation for public decision- and policy making at national and local levels. This could include prizes, competitions, special features, etc. varied by types of issues, locations, etc. Collaborate with CSO organisations in these activities. If possible, include such mechanisms in the my.gov.ge. (see section 3.11 Awareness)	User awareness and incentives plan for e-Participation activities	2014	DEA
			User awareness and incentives plan for e-Participation activities implemented	2014	DEA

No	Title	Description	Output	Time-line	Res-pon-sibility
4	Internal e-Participation capacity	Define, design and implement internal systems and capacity for the e-Participation strategy, including internal procedures and organisational arrangements, and the specific role of civil servants in participating in dialogue (e.g. through blogs and social media) including guidelines for them, etc.	Internal e-Participation capacity plan	2014	DEA
			Internal e-Participation capacity plan implemented	2014	DEA
5	Establish a platform for e-Participation	Implement and roll-out an e-Participation platform – if possible, to be integrated in my.gov.ge – as also committed to through the Open Government Partnership.	Launch e-Participation platform	2014	Ministry of Justice, DEA
6	Publish open budget data and consider IBP recommendations	Define a mechanism for public agencies of local and federal level to publish open spending data on data.gov.ge and consider recommendations of the International Budget Partnership.[21]	Open budget data published in the OGD portal. IBP recommendations considered	2014	Ministry of Finance

d. Performance targets

- National e-Participation strategy plan implemented by end 2014.
- Smart locality e-Participation strategy and framework plan implemented by end 2014.
- User awareness and incentives plan for e-Participation implemented by end 2014 (see section 3.11 Awareness).
- Internal e-Participation capacity plan implemented by end 2014.
- e-Participation platform launched by end 2014.
- Open budget data is published in machine readable format by 20% of the public agencies by end 2014.
- By 2018, 5% of citizens have participated online in public decision-making and policy-making.
- By 2018, 5% of businesses have participated online in public decision-making and policy-making.

[21] http://internationalbudget.org/wp-content/uploads/OBI2012-GeorgiaCS-English.pdf

3.3 e-Health

Healthcare supported by electronic processes and communication is an important area of a digital society. A “Georgia Health Management Information System Strategy” was developed by the Ministry of Labour, Health and Social Affairs in 2011. A comprehensive Health Management Information System (HMIS) will be built upon existing international standards.

a. Introduction and scope

Every citizen is affected by e-Health, so the services in this field will be key success factor of services provided by the public sector. In a first stage, e-Health includes the availability of the diagnosis and the documents electronically. In an advanced stage, applications support the doctors in diagnosis, treatments or evaluations. With a strong communications network doctors can exchange their experience and share their thoughts. A platform providing reliable health information satisfies the demand of citizens to know more about their health and illness. In a further stage, ambient assistive living (AAL) supports the monitoring of the status of persons suffering from chronic diseases or elder people in their own home and thus enhances their life quality.

b. Current situation and initiatives

Georgia is on a good path to introducing ICT into the health sectors. Several services like e-Prescription were set up, a registry of pharmacies is available and first major pilot projects of the electronic records are planned in 2013. The medical electronic system should be rolled out in the next 1-3 years. Since the hospitals are privatised, close coordination between the public and private sector is necessary.

A “Georgia Health Management Information System Strategy” was developed by the Ministry of Labour, Health and Social Affairs in 2011. A comprehensive Health Management Information System (HMIS) will be built upon existing international standards. A new Governance structure responsible for HMIS will be provided with other governmental agencies and representatives of the private sector. This new body will define the stewardship, strategy, vision and policies necessary for operational success. It will also identify priorities, highlight major issues, and mandate adoption of standards, to raise the quality and improve the performance of health care delivery in Georgia. --New software products such as an electronic medical record, personal health record and public health surveillance system will be obtained and integrated. They will allow a uniform set of core health data elements to be collected throughout the healthcare delivery system. The subsequent availability of accurate clinical information will not only improve care delivery to individual patients, but will also allow for the aggregation of the population’s healthcare information. Patients will have access to their personal health information and will have improved awareness, education and self-management of chronic diseases. No longer will providers only have fragmented pieces of a patient’s medical care but instead will have access to a longitudinal view of each patient’s medical history. The Government will be able to optimize healthcare delivery.

For goals, actions plans please refer to the “Georgia Health Management Information System Strategy”.

3.4 Public Finance Management System (PFMS)

a. Introduction and scope

The key to cost reduction and process simplification is the systematic analysis and streamlining of routine processes for reporting and of requesting permissions from government through direct online transmission of data. Thorough analysis of where the quick wins to improve G2G services lay is crucial to ensure success of sustainable and competitive growth. When streamlining and optimising G2G processes with the use of ICT, process analysis, process design and common specification of data exchange formats or interfaces to direct system-to-system integration of reporting mechanisms is important (see section 3.10 Enabling frameworks and governance).

The smart and innovative provision of public finance management is an important pillar in the drive to modernise the Georgian public sector. ICT has become an integral part of our lives and of the day-to-day business of public administration. Government innovation through the use of ICT helps to reduce administrative burden within and across government agencies as well as in the interaction with its customers and citizens when it comes to public finance management. Public finance tackles different divisions of budget and finances: budget development, spending and control, debt management, revenue management and others.

The electronic auction system eAuction.ge was created by MOFs Financial Analytical Service by the initiative of MOFs Service Agency, and from March of 2010 started realisation of movable property seized to the State, by this form. As a result of the simplified regime, the bureaucratic procedures have been reduced to a minimum. Nowadays, anyone can buy both, State and private-owned movable and immovable property in comfortable environment.

b. Current situation and initiatives

To date Georgia has developed and implemented an entire public finance management information structure, which is shared between different government entities. The Public Finance Management System (PFMS) consists of a number of sub-systems, each of it with a specific purpose. Sub-systems include:

- e-Budget – for budget planning and reporting to the Ministry of Finance;
- e-Treasury – for recording and managing public spendings;
- e-DMS – electronic Debt Management System for international debt management and internal loan management;
- e-HRMS – electronic Human Resource Management System;
- RS.GE – Revenue Service;
- e-Procurement – a central unified platform for tendering and procuring goods, services and works for procuring entities as set by the Public Procurement Law (PPL) (including central and local government bodies);

- e-Auction.ge – a central platform where government bodies sell goods to private and civic sector actors.[22]

c. Goals and action plans

Stakeholder benefits:
Georgia has focused the creation and supply of cost efficient and process optimising G2G e-Services. Government as well as businesses benefit from user-friendly, accessible and value-adding services online, e.g. high quality of service delivery, cost and time savings by using the electronic services. PFMS provides benefits for government with optimised return on investments already made in ICT by automating the exchange of data, in particular in the management of public finances.

Actions and expected outputs:

Table 8: Action plan for Public Finance Management System (PFMS)

No	Title	Description	Output	Time-line	Res-pon-sibility
1	Continued implementation and roll-out of the PFMS	Continued reform, development, implementation and roll-out (including training of key staff and take-up) to public sector organisations of the PFMS systems: e-Treasury, e-Budget, e-HRMS and e-DMS and RS.GE as planned in PFMS strategy document.[23]	PFMS widely spread and used in ministries, LEPLs, NPOs and SOEs and local government bodies	2014-2018	MoF, FAS
2	e-Procurement	Keep up the reformation of the State Procurement System, targeting further maintenance of the existing Georgian Electronic Government Procurement System (Ge-Gp) according to the Strategic Plan of the Competition and State Procurement Agency; identification of potentials for improvements; execution of the necessary measures for the introduction of additional innovations related to organisational development, increasing public awareness, ensuring e-System security, business development, education for system improvement and effective operations.	e-Procurement system in use	2014-2015	Competition and State Procurement Agency
3	e-Auction	Integrate digital payment system on existing system. Decide and roll-out e-Auction as a platform for non-governmental sellers. System technically capable of the expansion but decision must be made. In the e-Auction administrative module, the DG-Pass authorisation engine has already been implemented. Current tasks are: Online instalment and e-Commerce in commercial banks (continuous), improvement of site user interface. New functionality is planned	Digital payment possible on e-Auction	2014 - 2016	MoF

[22] Cf. Internal Document: electronic Public Finance Management System – Strategy, Vision and Plans 2014-2018, Ministry of Finance, Tbilisi, Georgia
[23] Ibid.

		such as: buy-it-now function and mobile app (android, windows mobile, IOS)			

Performance targets

- Digital payment system integrated in 2014
- Existing systems (DMFAS) are fully replaced in 2014
- Build tools for financial data analysis and modelling in 2018
- New version of e-Budget system with technical refactoring and comprehensive functional Improvements is launched in 2014. New modules for budgeting of local governments and autonomous republics are launched and functional for consolidating their budgets into the Consolidated Budget together with the state budget is created.
- Roll-out of e-Auction as a platform for non-governmental sellers completed in 2014.
- New functionality is implemented such as: buy-it-now function and mobile app (android, windows mobile, IOS) in 2014
- Public tendering and public procurement is executed fully online therewith using the e-Procurement system and underlying standards specified.

3.5 e-Business

The provision of e-Services for the private sector is an important pillar along innovation and economic growth of a society. In general, the actors in the business and non-government sectors have more frequent contacts with government agencies per year than citizens, and they are more often using ICT in their daily business of trade.

In section 3.1, the priority theme e-Services has been described from the point of view of government providing public services online to its customers, including G2B and B2G. Besides the interaction between the businesses and governments, the private sector is dependent on the State facilitating e-Business among companies and businesses with civil sector. This includes for example furthering the investments in providing Internet access across the country, ensuring a stable, reliable and secure online network through proper legal, price and usage regulations or supporting private offerings of access points in remote areas.

Another area of importance is the provision of key basic services such as e-ID, digital signature, online payment solutions or common basic services to protect against risks of cybercrime such as fraud, manipulation, phishing, spying, hacking etc. (e.g. certification of trusted portals or online services, encryption mechanisms, etc.).

To develop towards an interconnected society and networked digital market, standards in the communication and interaction across sectors are a must. Priority themes e-Security (sect3.8ion 3.8) and Infrastructure (section 3.7), which will be described below, outline a number of strategic objectives and action plans along the e-Georgia strategy to foster needs of governments as well as of businesses and citizens. To pave the way for an innovative e-Georgia – innovating also from its businesses –, these themes are to be complemented with tackling particular needs of the business sector. Thereby, innovative models of public-private partnerships have to be explored, as the public sector cannot do all alone. Accordingly, the following key topics for e-Business are covered in the e-Georgia strategy:

1. Efficient and effective e-Services for G2B, G2NGO and B2G.
2. Legislative framework and standards for e-Business.
3. Basic infrastructure for joint use in e-Business and e-Government.
4. Enablement for added-value e-Services development from OGD.
5. e-Skills and capacities for ICT jobs.

3.5.1 Efficient and effective e-Services for G2B, G2NGO and B2G

The provision of public e-Services for the private sector is an important pillar along innovation and economic growth of a society. Especially in direct system-to-system interaction, major effects in efficiency and effectiveness can be gained by optimising e-Services for G2B, G2NGO and B2G. As the topic is already described, reference is given to the stakeholder benefits and action plan suggested in section 3.1.2 e-Services for business (G2B and B2G) and civil society organisations (G2NGO).

3.5.2 Legislative framework and standards for e-Business

a. Introduction and scope

To establish trust in online trade, a basic legal frame (e-Commerce regulations) is necessary, which regulates aspects such as identification, validity of digital contracts, and of digital invoices, etc.[24] e-Commerce regulations shall support public awareness and ensure the execution of regulations of IPR issues on use and reuse of digital concepts and products. Regulation needs to particularly promote areas, where development of digitisation is needed to invest better standards of e-Service execution and to improve digital interaction among the business partners. An example of such an area could e.g. be to improve accounting practices and to make them become more standardised.

Enabling the digital economy to evolve requires also clear regulation on intellectual property rights (IPR). An IPR regulation clarifies ownership and use of digital products, copying and distribution of such products, etc. Regulation is however only as good as it is enforced and executed. This means that the implementation of the regulations require thorough realisation.

Besides particular e-Commerce regulations and IPR regulation enabling digital trade, relevant other legal frames are shaping and regulating basic infrastructure aspects, e.g. the use of digital signatures, ensuring ICT security and data protection, or regulation of other key aspects in online trade among businesses, with citizens as well as with governments in online e-Services interactions. Examples of such legal frames are e.g. an e-Government act, a digital signature act, an information security act, etc. These legal frames are treated in thematic priorities 3.10 Enabling frameworks and governance and 3.8 e-Security. Accordingly, particular actions to be taken are mentioned there.

Finally, to effectively exploit the potentials of innovative technologies, basic standards have to be settled to ensure interoperability and to enable seamless interaction across different organisations. Accordingly, standards to exchange data, to transport documents and information load across digital networks, and to ensure secure transmission have to be defined and settled among the business actors. Basic standards used to interact among governments and businesses are dealt with in GEO III (interoperability component). Standards for better business to business interaction are to be defined across the business actors. As a wealthy business sector is crucial for economic growth and jobs of a society, the relevant political and government agencies need to collaborate with the business sector to streamline activities towards development of common standards to enable smooth online trading. However, it is not Government alone that can develop such standards. Extensive collaboration among the business actors is crucial. Facilitation through the public sector will spur innovation and contributions; yet, the drivers must be the business actors themselves.

b. Current situation and initiatives

[24] Along the Twinning project GEO III, e-Commerce regulations will be drafted.

Existing legislation in the field of intellectual property in Georgia is corresponding to European standards, which has been confirmed during the process of negotiations on Deep and Comprehensive Free Trade Area (DCFTA). The finalisation of these negotiations shall result in minor legislative amendments in the norms regulating execution in the field of intellectual property protection. Accordingly, IPR regulations and standards seem to be well in place in Georgia. These regulations cover protection of both, digital as well as non-digital artefacts.

Along the current activities of "Promote the strengthening of E-Governance in Georgia (E-Government Georgia)"'s legal component (component 1), e-Commerce regulations are under construction. In the component on interoperability (component 2), an analysis of existing standards for data exchange is performed and an e-Georgia interoperability framework is developed. Some standard specifications have been developed between the private and the public sector regarding G2B and B2G interactions.

c. Goals and action plans

Stakeholder benefits:
The e-Commerce enabling regulations have significantly contributed to a more secure and trustworthy environment for online trade. These regulations define validity of digital contracts, the use of e-ID and digital signatures also in e-Business, as well as the protection against fraud and cybercrime (including ICT security, data protection). Apart from that, regulations on Intellectual Property Rights and licence models are settled for the digital world.

A set of standards has helped to increase the share of digital trade through e-Commerce. Standards for ordering, invoicing or online payment enable a reduction of transaction costs by 10 % and a direct interaction on system level, while promoting different software solutions to emerge in the market. To ensure interoperability and value-add of online trade, standards have become a key means in innovation projects.

Actions and expected output:

Table 9: Action plan for Legislative framework and standards for e-Business

No	Title	Description	Out-put	Time-line	Res-pon-sibility
1	Investigate demands and needs for e-Commerce regulations	Establish a working group that scans the legislative grounds to foster e-Services provision is trustworthy and legally grounded and see if any updates are necessary (cf. also Twinning activity in component 1)	List of needs and aspects to be included in an e-Commerce regulations;	2014	DEA, MoE, Sakpatenti, other
2	Develop draft e-Commerce regulations	Develop a draft for the e-Commerce law that covers the needs for regulating online trade in Georgia. Therewith study existing e-Commerce (and related) regulations of other countries. The draft regulations shall include security, data protection, validity of digital contracts and invoices, IPR issues etc., and it should cross-reference to existing regulations relevant to online trade.	Draft e-Commerce regulations	2014	DEA, Sakpatenti, GEO, others

3	Approve and put regulations into force	The draft legislation shall be discussed openly and in the parliament. Subsequently, it should be approved and put into force.	Existing e-Commerce regulations	2014	
4	Apply e-Commerce regulations	Public, private and civic sector actors execute online trade, thereby relying on the e-Commerce regulations.	Number of online trade executed; Number of fraudulent cases reduced; IPR cases in court clearly decided based on standard regulation	2015 onwards	
5	Scan and revise regulations for online trade enablement	Scan other regulations and evaluate if these hold barriers against online trade. If so, trigger revisions of such legislations	Revised legal acts enabling digital trade	2015 onwards	
6	Identify needs for standards in online trade	Identify needs for standardization of data exchange and interaction in online trade across companies as well as with civil and government sector.	List of needs for standards in online trade	2014	
7	Set up a group for defining standards in e-Business	Set up a group for defining standards in e-Business	Group on ICT standards for data exchange in e-Business established	2014	Companies, Governments, MoE
8	Elaborate standards for online trade	The group meets on a frequent basis to discuss and elaborate standards for online trade. To ensure the standards are taken up, a procedure for how to develop and approve as well as diffuse such standard specifications is to be settled (governance structure as well as open repository of e-Business standards).	Standards for e-Business; Repository of standards; Governance procedure for specifying, approving and diffusing standards defined for online trade;	2015 onwards	Companies, Governments, MoE
9	Study the feasibility of updating existing IPR regulations in terms of license model use for software products	A group of legal experts representing different interest parties is formed to study the feasibility of the issue in question and to decide whether to recommend update	Study report, recommendation where necessary	2014	Sakpatenti with relevant state agencies, possible input from companies

d. Performance targets

- By the end of 2016, a comprehensive legal framework exists for e-Business.
- The comprehensive legal framework has led to 30 % more e-Services in e-Business (based on 2013 figures)

- Standards facilitate full online transaction by 2018

3.5.3 Basic infrastructure for joint use in e-Business and e-Government

a. Introduction and scope

To enable e-Business, a number of basic infrastructure services to promote digital interaction are required, such as digital identification, digital signature, online payment, secure and trustworthy transport infrastructures, secure online delivery services, as well as Internet access for all and everywhere even in remote rural areas (fixed lines or mobile), etc. These basic infrastructure services are needed by private as well as public sector actors.

To speed up the diffusion of Internet and to reach out to far rural areas, concepts of public-private partnerships need to be investigated. Options for exploiting synergies among public and private sector have to be assessed and discussed among relevant actors. Especially in times of tight budgets and high load of investments by the public sector, investments of the private sector in public-private partnership co-operations provide alternatives to reach minimal targets of universal infrastructure services all over the country.

b. Current situation and initiatives

The “300 villages project” has been initiated to provide wireless Internet access in the villages[25].

PayPal is available, online banking by some banks, yet not accessible for all and everywhere. Cash transfer over Georgian post is not trusted and hence not carried out. Payments by credit cards are currently only useable with Georgian credit cards for Georgian local online services. Payments can only be done in Georgian Lari (GEL).

Logistics and delivery of products and goods by Georgian post (as a common good) is not transparent and is poor in Georgia. In consequence, postal services are not trusted and not used intensely.

c. Goals and action plans

Stakeholder benefits:
The provision of fixed and mobile access all over Georgia has contributed to rural economic development and to higher use of online trade and of e-Services offered by the public sector. A key part of high take-up is the diffusion of trustworthy, secure and reliable basic infrastructure services such as digital identification, digital signature, online payment, online dialogs, transport and delivery. The introduction of these basic services was driven by governments, yet was possible only through partnerships with the private sector. Through a specifically defined and agreed standard collaboration model for the diffusion of such basic infrastructure services, a win-win situation has

[25] Unfortunately, this project is currently slowed down

emerged for public and private sector actors. The civic sector benefits from low prices and trustworthy online trading and public e-Services provision.

Through the diffusion of reliable, secure and trustworthy infrastructure services (including through cloud services), entrepreneurships in ICT developments and ICT services have emerged also in rural areas hence contributing to more jobs and economic growth. With a proactive e-Skills development campaign (see section 3.9 Skills and e-Inclusion) this has in turn contributed to make Georgia attractive to foreign companies to invest into the country (see also section 3.6 ICT-Hub Georgia).

Actions and expected output:

Table 10: Action plan for Basic infrastructure for joint use in e-Business and e-Government

No	Title	Description	Output	Time-line	Res-pon-sibility
1	Ensure access for all to Internet (see section 3.7.1)				
2	Enable basic infrastructure service use by businesses	Define conditions, service level agreements (SLA) and agree on the private sector integrating and widely using universal (also public sector) infrastructure for e-Services in online trade (e-ID, digital signature, online payment, secure online delivery, secure and trustworthy transport infrastructures). Clarify and make agreements on private sector providing universal services for public sector e-Services or on joint public-private partnership models to diffuse and take-up universal services widely; include SLAs thereby (see also section 3.7.1).	Agreements on universal ICT infrastructure use in online trade; Agreements on public-private partnership models for developing and providing universal services;	2014 - 2016	DEA, MoE, GNCC
3	Define e-Payment standards and affordable solutions to be integrated in e-Services provision	A group of public and private sector experts (particularly involving banks) is formed to develop a common e-Payment standard. Attract e.g. VeriSign or others to invest in Georgian payment solutions. Ensure that the online payments become affordable	e-Payment standard specification; e-Payment solutions integrated in e-Services offerings	2015	NBG, MoE
4	Explore and share cloud services	Investigate and further the setup and provision of cloud services among businesses as well as between businesses and governments. Establish public and private cloud services, for companies and governments as well as for civic actors. Ensure that the cloud services are running on trustworthy infrastructures and are affordable. This may require some market control by Government and Parliament.	Cloud services strategy developed; Cloud services established	2015 - 2018	SmartLogic, MoF, ICT sector

d. Performance targets

- 15% of enterprises' turnover on e-Commerce (tin00110) by 2016 (see section 3.11.4.2.4, definition provided by Eurostat).
- 20% of enterprises having purchased online (at least 1%) (tin00112) by 2018 (see section 4.2.4, definition provided by Eurostat).
- 15% of enterprises having received orders online (at least 1%) (tin00111) by 2018 (see section 4.2.4, definition provided by Eurostat).
- By 2016, a common e-Payment standard is established, which is aligned with international payment standards.
- By 2016, a cloud strategy for Georgia is existing.
- 30% of enterprises using automated data exchange with customers or suppliers (tin00124) by 2018 (see section 4.2.4, definition provided by Eurostat).
- 30% of enterprises sending and/or receiving e-Invoices (tin00114) by 2018 (see section 4.2.4, definition provided by Eurostat).
- 90% of enterprises with fixed broadband access (tin00090) in 2016 (see section 4.2.4, definition provided by Eurostat).

3.5.4 Enablement for added-value e-Services development from OGD

a. Introduction and scope

The public sector holds a vast amount of data. Through the demand to implement Open Government principles, countries provide more and more public data as raw data (see also section 3.2 e-Participation and Open Government). This opens up new opportunities for the business sector by developing apps for value-added services through particular knowledge visualisation or by combining different data sets using linked open data concepts (LOD) to extract and represent new knowledge on such data sets. Existing apps emerged for both, standard Internet as well as smartphones. This way, a new social innovation paradigm has emerged where it is not the governments to develop added-value services, but the businesses or the individual citizens.

b. Current situation and initiatives

Data.gov.ge portal exists, but it currently only contains links to other web pages. Re-usable data sets are not yet provided. Therefore, businesses cannot use data and build e-Services or applications. There are no applications (for computer or mobile devices) and no visualisations of data so far.

c. Goals and action plans

Stakeholder benefits:
Companies experience new options of innovative businesses, while governments benefit from private sector developments of apps. Governments fulfil the Open Government principles and demands along the Open Government Strategy and Partnership (see 3.2 e-Participation and Open Government). The society benefits from more transparency and from openness on government data, visualized and enriched through the apps of the private sector.

Actions and expected output:

Table 11: Action plan for Enablement for added-value e-Services development from OGD

No	Title	Description	Output	Time-line	Res-pon-sibility
1	Competitions on apps developments	Set up and perform annual competitions for apps development to spur innovation and the provision of value-added services based on OGD (see also section 3.11 Awareness). Businesses and civil society as well as academia is engaging in such competitions to provide added-value services from OGD.	apps, Visualisations and e-Services	2014 and 2015	
2	Provision of OGD in computable formats see section 3.2.2 (1)				

d. Performance targets

- By 2016, 70 apps have been developed by businesses on OGD visualisation and added-value generation

3.5.5 Skills and competencies for ICT jobs based on private sector needs

a. Introduction and scope

An important pillar of the e-Georgia strategy is to become excellent in ICT services and to provide specialist expertise in certain areas of ICT development and service provision. The ICT area of the private sector plays a key role thereby. To ensure adequate competencies and ICT skills that meet the needs of the private sector in dedicated areas such as ICT security, e-Services development and provision via fixed and mobile access, ICT infrastructure, big data analytics, e-Tourism, e-Logistics, e-Culture, smart cities and others, reforms and investments are needed in the educational offerings at schools, at higher education institutions as well as in institutions providing vocational training and skills development for life-long learning. Such programmes need to particularly train in ICT programming and service development for areas as mentioned before. Foremost, education and training need to be congruent with the requirements of the public and private sector professionals.

b. Current situation and initiatives

Georgia has started to equip pupils with notebooks or netbooks when they enter school. Schools are connected with the Internet all over the country. However, current educational offerings are weakened by teachers at school not having all the necessary competencies to educate in e-Skills. At universities, the bottleneck lies in lecturers not having up-to-date training and education on newly emerging technologies and concepts and the curricula not reflecting the demands of private and public sector professionals accordingly.

c. Goals and action plans

Stakeholder benefits:
The reform on teacher education at schools for e-Skills has led to better education and skills on innovative ICTs in society. Hence, the younger generation has much better e-Skills, which provides an important ground for e-Services take-up as well as for engagement of private and civic sector actors in e-Services development. This has in turn contributed to more jobs in ICT professional areas and to sustainable economic growth (see also 3.9 Skills and e-Inclusion).

As the recent reform of university curricula in ICT skills reflects now up-to-date skills development and training based on private and public sector needs, more young ICT professionals are available for innovative ICT business developments. Educational and excellence institutions offer vocational training and skills development programmes for ICT professionals and non-ICT professionals to acquire complementary competencies in newly emerging programming languages, in agile and systematic methods of software and system development and evaluation, in e-Services development for fixed Interned and mobile access, for apps development, etc. These training offers are affordable for people and contribute to innovative ICT developments for the market and for society.

Actions and expected output:

Table 12: Action plan for Skills and competencies for ICT jobs based on private sector needs

No	Title	Description	Output	Time-line	Res-pon-sibility
1	Coordinate activities with 3.9 Skills and e-Inclusion topics				

d. Performance targets

- See performance targets with 3.9 Skills and e-Inclusion topics

3.6 ICT-Hub Georgia

Becoming a leading competitive and innovative business environment in the field of ICT in the Caucasus region is supporting the overall vision of the e-Georgia strategy – and this demands for excellence in ICT developments. To develop a strong ICT sector that creates high-qualified jobs and a competitive advantage in the region, Georgia has to invest in building up excellence in dedicated areas of e-Service delivery and further research and development in the ICT field. To attract talents globally and to demonstrate capacity in ICT fields within Georgia as well as in the Caucasian region, ICT yellow pages and a knowledge and excellence portal can help to create awareness and to find expertise faster. Such mechanisms also help to identify where capacity and knowledge gaps still exist. Finally, enablers for developing Georgia towards and ICT hub lay in Open Innovation mechanisms such as OpenGLAM, OpenAccess and open source.

3.6.1 Building up excellence in dedicated areas of e-Service delivery and further research and development

a. Introduction and scope

One of the pillars of the e-Georgia strategy is to become a leading competitive and innovative business environment in the field of ICT in the Caucasus region. This objective requires excellence in the development of ICT. Such an outstanding aim has to be carefully planned for successful implementation. Foremost, concentration on specific areas of ICT excellence is necessary – not all at once but step by step evolution will lead to sustainable success. Examples of areas that have good potential in the region are e.g. ICT-based business services with added value business intelligence and big data analytics, universal ICT services for security and e-Logistics, e-Tourism services, e-Culture services, e-Services for governments, smart cities solutions or similar. Decisions have to be made among the key actors as to which areas to select and with which priority to address them in a phased action plan.

When decisions are made, research and excellence centres with investment programmes in research and development need to be installed to investigate newly emerging innovative technologies and solutions for the respective area. Initiatives and activities of this kind need to co-jointly involve actors of the public, private and civic sectors, and they need to align with international networks and centres of excellence.

Becoming excellent requires creating the necessary skills and know-how in the respective field. Excellence centres are the one side of the coin. The other side is to ensure the education and training in dedicated up-to-date aspects and concepts of e-Service delivery. Hence, an ICT-Hub Georgia requires reforms in skills development starting from school and higher education curricula, and ranging to professional training and vocational training offers in dedicated knowledge areas for software development, service design, infrastructure and security know-how and skills (see section 3.9 Skills and e-Inclusion).

Seed funding and partnerships in international funding programmes are among the instruments Georgia's innovation and investment actors need to reflect upon. An

example of furthering innovation is e.g. identified in the agricultural field, where part of the interests is funded by government. A similar model could be introduced to spur private sector investments in ICT development.

To serve the region with excellence in particular ICT e-Services domains, appropriate mechanisms of awareness and networking for export need to be established. Evenly, to foster foreign investments in Georgia's ICT sector, according steps are to be planned well ahead of time.

b. Current situation and initiatives

Currently, equity financing is provided in Georgia. Yet, the IT invest programme is limited and potentially perceived as not being fairly distributed. Another initiative is innovation funder.

c. Goals and action plans

Stakeholder benefits:
The financial and capacity investments in building excellence in ICT service delivery in Georgia has contributed to create 40,000 new jobs and 8% increase in GDP. Georgian ICT professionals have become a larger group with good job opportunities. Companies easily find experienced and skilled ICT professionals for their needs. Georgia has become known for its ICT innovation in the Caucasian region and beyond.

The research centres in dedicated areas are well connected with academic institutions and with private and public sector agencies, thus meeting the needs of the different actors in spurring innovation and ICT developments. The financial support infrastructure has attracted international trade and investments of foreign companies in Georgia. Neighbouring countries appreciate the excellence on dedicated ICT fields in Georgia and rely on them. They also have started to link up with the excellence centres in Georgia, which in turn has strengthened the position of the research centres as well as the public and private sector actors of Georgia in the whole Caucasian region. An important contribution thereby is the strong links of research centres to international knowledge centres and think-tanks that ensure alignment with the pace of ICT and social innovations worldwide.

Actions and output:

Table 13: Action plan for Building up excellence in dedicated areas of e-Service delivery and further research and development

No	Title	Description	Output	Time-line	Res-pon-sibility
1	Decide and prioritise areas for ICT excellence, and develop an ICT excellence master plan	To build up excellence on ICT, promising ICT service areas have to be identified and decisions have to be made among the key actors of government and private sector industry representatives on which ICT areas will be fostered in the excellence initiative, and which one of these areas to start with; A master plan (ICT excellence strategy) is to be elaborated on planning respective initiatives and investment programmes to	Identification of promising areas of ICT excellence for Georgia; Decision on the areas being part of an ICT excellence master plan;	2014 - 2015	MoE, MoJ/DEA, MoF, MES etc.

		spur innovation and to set up grounds for excellence initiatives.	Development of an ICT excellence master plan with timelines, financial as well as capacity investments, and partnership models involving all relevant sectors;		
2	Set up the programmes for the ICT excellence master plan	Set up a programme to build up research centres and investment of private industry in capacity development and innovative ICT developments and e-Services provision along the ICT excellence. Different options need to be explored and complement each other to promote innovations and the building up of excellence, including attracting international companies to invest in Georgia.	Programmes for ICT excellence	2015 onwards	MoJ/DEA, MoE, MoF
3	Skills development in dedicated ICT areas of the excellence master plan	Skills development and inclusion of regions is coordinated with the ICT excellence master plan to fit the demands (see activities in 3.9 Skills and e-Inclusion).			

d. Performance targets

- Research centre and centre of excellence have been established in Georgia by 2016.
- 5% of the ICT sector on GDP (tin00074) in 2018 (see section 4.2.4, definition provided by Eurostat).
- 3% of the ICT personnel on total employment (tin00085) in 2018 (see section 4.2.4, definition provided by Eurostat).
- Average of 2% change of value added by ICT sector at current prices (tin00086) in the next 5 years (see section 4.2.4, definition provided by Eurostat).
- Positive export-import balance in ICT e-Services industry by 2018.
- 3 countries of the region have linked up with excellence centres in Georgia (memorandum of understanding or collaboration agreements) by 2018
- See also indicators in the section 0 Benchmarking.

3.6.2 ICT yellow pages: knowledge and excellence portal

a. Introduction and scope

Developing towards an ICT excellence demands for mastering competencies, skills and activities of different sectors and professional actors. To enable fast identification of available professional ICT skills and actors as well as to provide an environment for showcasing one's own profile of capacities and competencies in the dedicated ICT

areas, a so-called who-is-who of ICT actors – ICT companies, knowledge and research centres, CSOs, public agencies, and ICT professionals – is helpful for finding better and faster information on who provides what competencies and services, who is quickly available for collaboration or for a contract and for who is interested in collaboration on particular areas of ICT development. Such a portal could be set up and hosted through a CSO or private sector cooperation. The contributions of showcasing should be provided by the individual agencies themselves, however with the quality assurance implemented by a neutral (CSO) agency. Funding might be ensured through simple membership or exposition fees for institutional agencies and/or with seed funding from initial investments. Also research centres might be a good alternative for hosting such a "yellow-pages" one-stop portal on ICT competencies and actors.

The portal provides the data as open data and is linked with open data from governments. Hence, applications can be developed which provide views and analysis for finding new business innovations, niche markets etc. to find competitive advantages (see section 3.11 Awareness).

b. Current situation and initiatives

Currently, a job market already exists, which is provided on different portals. The two main ones are the governmental portal hr.gov.ge offering open positions in the government sector; and the private portal jobs.ge, which is popular as it not only announces new job opportunities, but also professional development courses. In addition to these two, others exist.

c. Goals and action plans

Stakeholder benefits:
The yellow pages on ICT excellence help companies and public sector actors to find competencies and ICT professionals with special skills quickly. Likewise, the ICT professionals quickly find collaboration partners through this portal. The profiles are consulted well by the actors as the information there is reliable and trustworthy due to a quality assurance mechanism performed by an independent agency.

The establishment of the who-is-who of companies, ICT professionals, public sector and CSO actors supports in finding better and faster information on who provides what services and in establishing effective and sustainable collaboration among these actors. This in turn contributes to a flourishing ICT market in Georgia and to achieve the vision of Georgia being an ICT-Hub in the region. The using and exploiting of open data provides insights into new ICT business innovations. This is a well appreciated service enabling young entrepreneurs and SMEs to position themselves in the innovative ICT market.

As the portal is available in various languages – Georgian, Russian and English and maybe even additional, regional languages, it is also well consulted by the neighbouring regions where Georgian companies and ICT specialists can be found for contracts.

Actions and expected output:

Table 14: Action plan for ICT yellow pages: knowledge and excellence portal

No	Title	Description	Output	Time-line	Res-pon-sibility
1	Conceptualise and design the yellow pages	Conceptualise and design the yellow pages (who-is-who in the ICT sector), including a quality assurance procedure and functionality for finding and matching demands and offers.	Yellow pages on ICT professionals.	2014	ICT sector
2	Invite institutional actors and ICT professionals to add valuable knowledge assets to the portal	Invite institutional actors and ICT professionals to contribute their profiles to the platform.	Portal filled with content.	2015	ICT sector

d. Performance targets

- Who-is-who register in the ICT sector exists in 2015.
- 1.000 ICT professionals and 100 institutional organisations have settled their profiles to the platform by 2016

3.6.3 ICT and Open Innovation

a. Introduction and scope

The approach of openness (see 3.2 e-Participation and Open Government) can include different societal perspectives which can help to leverage the ICT-Hub. Openness from an ICT perspective requires that a piece of content or data is open if "anyone is free to use, reuse, and redistribute it"[26] The following topics represent further aspects of openness: OpenGLAM (Galleries, Libraries, Archives and Museums), OpenAccess (to scientific publications) and OpenSource Software. These topics are developed in a public, collaborative manner, which makes it ideal to leverage the ICT-Hub.

b. Current situation and initiatives

EIFL (Electronic Information for Libraries) has been collaborating with the Georgian Integrated Library & Information System Consortium (GILISC) for over 10 years. The current situation and initiatives are described at the UNESCO Global Open Access Portal.[27]

c. Goals and action plans

[26] See http://opendefinition.org/

[27] See http://www.unesco.org/new/en/communication-and-information/portals-and-platforms/goap/access-by-region/europe-and-north-america/georgia/

Stakeholder benefits:
Easy access for everyone to create, use and re-use digital commons (content, data, software etc.) is the cornerstone of an e-Society. Companies (especially SMEs), researchers, CSOs and private persons can build services based on these digital resources. Galleries, libraries, archives and museums can reach a much broader audience if they offer their content additionally in digital formats and can benefit from news services based on their content. Scientific publications can be quality assured if their base data is disclosed and new scientific work can be based upon availability of open data from research. Open source software not only empowers people to contribute to (international) software projects (e. g. by translating into Georgian or adapting to Georgian needs), it also reduces the lock-in for government and businesses to proprietary software vendors.

Actions and expected output:

Table 15: Action plan for ICT and Open Innovation

No	Title	Description	Output	Time-line	Res-pon-sibility
1	Set up OpenGLAM initiative	Conceptualise OpenGLAM strategy and action plan, bring together relevant stakeholders and monitor funding opportunities.	OpenGLAM initiative in place.	2015	National Agency for Cultural Heritage Preservation of Georgia
2	Set up OpenAccess initiative	Conceptualise OpenAccess strategy and action plan, bring together relevant stakeholders and monitor funding opportunities.	OpenAccess initiative in place.	2015	MES
3	Set up OpenSource initiative	Conceptualise OpenSource strategy and action plan, bring together relevant stakeholders and monitor funding opportunities.	OpenSource imitative in place.	2015	DEA, private sector
4	Set up OpenData initiative	already defined in section 3.2.			

d. Performance targets

- OpenGLAM initiative set up by 2016.
- OpenAccess initiative set up by 2016.
- OpenSource initiative set up by 2016

3.7 Infrastructure

An e-Society needs trustworthy, secure and reliable basic infrastructure services, modules and elements as a prerequisite for take up of e-Services, e-Participation as well as in advances in e-Health and e-Business. This contains especially the access to the Internet but also basic services such as digital identification, digital signature (identification / authentication) as well as back-office granular and aggregated services (e.g. online payment, online dialogs, transport, delivery etc.) which act as a multiplier layer for the provisioning of services.

3.7.1 Infrastructure – Broadband access

a. Introduction and scope

Access to the Internet has to be fast, reliable, available, affordable and usable without restrictions in order to increase usage. Especially broadband access provisioning for enterprises, nearly all households especially also in the rural areas is prerequisite to achieve also quality in delivering e-Services (see also 3.1 e-Services). These aspects are taken into consideration by the ICT development index. Internet freedom is monitored by the Freedom House, an international CSO. Due to extended usage of mobile devices the coverage of 'fast Internet' resources (3G, 4G etc.) for Georgia is one of the main infrastructure priorities for the near future as well as the provisioning of high capacity solutions for rural areas.

b. Current situation and initiatives

Georgia moved up eight places to 73rd position on the ICT development index in 2011. It improved on both ICT access and use. Apart from fixed-line penetration, Georgia made significant advances on the ICT development index in the last years. Mobile-broadband penetration has climbed to 18.8% by the end of 2010 (up from 9% in 2008), the highest among CIS countries.[28]

The telecommunications infrastructure in Georgia is still weak, and users may experience disconnections from the international Internet up to two or three times per month, allowing them to access only Georgian websites. In general, the connection speed for accessing content hosted in Georgia is greater than for international content. There are many factors influencing this, including the major underground fibre-optic cable that is often threatened by landslides, heavy rain, or construction works along the road. There is a nationwide fixed network provider and several local ISPs. Government censorship is not a major hindrance to Internet freedom in Georgia. Users can freely visit any website around the world, upload or download any content, and contact other users via forums, social-networking sites, and instant messaging applications. Civil rights, including the right to access information and freedom of expression, are guaranteed by the Georgian constitution and are generally respected in practice.

[28] http://www.itu.int/net/pressoffice/backgrounders/general/pdf/5.pdf

The number of Internet and mobile telephone users in Georgia is growing, but high prices for services and inadequate infrastructure remain obstacles to access, particularly for people in rural areas or with low incomes. 23% of Georgians access the Internet every day, while 56% of the population have never used Internet. Internet service providers (ISPs) offer dial-up, DSL broadband, fibre-optic, Enhanced Voice-Data Optimized (EVDO) and Code Division Multiple Access (CDMA) connections. The average cost for an Internet connection is US$ 20 per month, and the lowest price for a 1 Mbps DSL connection is approximately US$ 9. Many users complain about the quality of connections and suffer from frequent outages. Nevertheless, there were over 329,000 fixed-line (broadband) Internet connections in 2011 for a broadband penetration rate of 7.6%, up from 0.6% in 2006. Mobile phone penetration is greater than that of the Internet and has continued to grow from 38.4% in 2006 to 102.4% in 2011. Mobile phones significantly outnumber landlines, and reception is available throughout the country, including rural areas. The use of mobile devices to connect to the Internet has been limited by high costs, but providers are offering new and somewhat less expensive services, including CDMA and EVDO technologies.[29]

Plans are developed to auction spectrum for LTE but there is still no timeline for the auction. Moreover in the broadcasting sector the transition from analogue to digital broadcasting will result in available capacities. It is assumed that the “digital dividend” will be dedicated to mobile networks purpose.

The goal of the public libraries project (beyond access project) is to reinvent library as a shared facility for traditional library functions, free community access to ICT and skills improvement, contributing to the community initiatives and development. To this end, PSDA intends to test public services concept, namely introduce respective tools and train the staff so that they can help local population to enjoy all available e-Services through libraries.

c. Goals and action plans

Stakeholder benefits:

The government ensures the functionality of broadband-access for the population and therefore facilitates ‘rural areas’ the possibility of ‘accessing Internet’. The public libraries project (beyond access project) will increase the role of the library to enhance trust and relationship between local governments and its population through introducing e-Governance.

Broadband facilities are important to government agencies but also to businesses and other organisations as well as citizens. The establishment of e-Services as well as ICT-Hub functionalities is crucial related to this infrastructure need. Establishment means the provisioning of more e-Services as well as the increased usage of them (in G2B, G2C but also G2G and B2B sectors). Through a specifically defined and agreed standard collaboration model for the diffusion of such basic infrastructure services, a win-win situation has emerged for public and private sector actors. The civic sector benefits from low prices and trustworthy online trading and public e-Services provision.

Actions and expected outcomes:

Table 16: Action plan for Infrastructure – Broadband access

[29] http://www.freedomhouse.org/sites/default/files/Georgia%202012.pdf

No	Title	Description	Output	Time-line	Res-pon-sibility
1	PPP Models for Stimulation / "Last Mile"	A concise methodology to encourage the building of PPP models together with various stakeholders also active in this field needs to be developed Know how from other countries can be used as a good practice example.	PPP model provided.	2014 - 2017	MoE, GNCC
2	Infrastructure Sharing / National Broadband Strategy	Develop an infrastructure sharing / national broadband strategy, which also includes models and concrete projects to use common network infrastructure (power supply providers,…) and to avoid duplicate efforts.	Infrastructure sharing model established.	Ongoing till 2015	MoE, GNCC
3	Multi-channel strategy	A multi-channel infrastructure strategy for Georgia needs to be developed so that different channels can be offered, communicated and seen as efficient service delivery channels and harmonised with requirements of e-Services Roll-out of Public Service Halls, Community Centres, libraries and schools, pay points, access points etc. Feasibility study and consultation with relevant stakeholders and local authorities shall define the relevant e-Service (initial focus shall be on 19 life events, high-volume e-Services) portfolio prior to roll-out (see section 3.11 Awareness).	Strategy elaborated and agreed.	2014 - 2015	MoE, involving relevant others
4	Awareness rising especially for civil society organisations (but also governmental)	Together with relevant stakeholders of the infrastructure scene a communication and awareness rising process should be established, so that the 'trust' in the infrastructure (service) is a main pillar for using it - includes as target area all sectors (e-Services, e-Health, e-Business, e-Banking, e-Skills, etc. - see section 3.11 Awareness).	Awareness campaigns established	2014 - 2015	MoE, DEA

d. Performance targets

- 70 % of households is with broadband access (tin00089) by 2018 (see section 4.2.4, definition provided by Eurostat), the rest of the population has access to broadband infrastructure for example via Public Service Halls, Kiosks, Community Centres, public libraries… (multi / different channels)
- 40% of individuals using selected mobile devices to access the Internet (tin00083) by 2016 (see section 4.2.4, definition provided by Eurostat).
- 98% of population coverage with basic broadband in 2018 according to the Digital Agenda Performance Indicators of the European Commission-[30]
- By 2015, PSDA has implemented the pilot project regarding transformation of 5 public libraries.
- A Regulatory Framework (see 3.10 Enabling frameworks and governance) is in place by 2015, which stimulates models like PPP for spectrum sharing and re-using existing infrastructures and which also takes

[30] European Commission: "A Digital Agenda for Europe",COM(2010) 245 final/2, Brussels, 26.8.2010

care about capacity (min, max rate) as well as decreasing price building – especially to get also the last mile served.
- At least 2 PPP models for broadband provisioning established in 2016.
- Model implemented and at least 2 projects for sharing infrastructure established in 2016.
- Processes for measure and monitor service quality established in 2014.
- Multi-channel infrastructure strategy available established in 2014 (see section 3.11 Awareness).
- Awareness campaign for broadband infrastructure is established by 2016 (see section 3.11 Awareness).

3.7.2 Infrastructure – Backoffice e-Government services

a. Introduction and scope

In this section the following main pillars of (Meta-) e-Government provisioning services are described:

G3 (Georgian Government Gateway) - is a data exchange infrastructure between different (public) organisations and bodies which ensures guaranteed message delivery and is build up on a couple of modules:
- Mail core.
- Data packet routing service.
- Prioritisation service.
- Message/communication log.

Communication is being implemented via secure socket layer (SSL), all messages/transactions are encrypted by recipient ministry / agency open key and all (asynchronous) messages/transactions are „time stamped" by the Gateway.

RoR (**Register of Registries)** – a law about unified state register was enacted on 1st June 2011 and is requires that all state bodies must provide information on content of registers' services in their organisations within provided corresponding software solution – "Portal of Registry of Registries" – and is functioning on following address: http://ror.dea.gov.ge/. Through this portal state government bodies can provide primary registration of their registries and services as well as registration of notifications on significant changes in them, their expansion, combining, cancelling, destroying, archiving and transferring. Currently 85 registry entities are registered on the portal which on their part entered data on 344 registries and 315 services.
Further implementation of "Registry of Registries" project includes exhaustive analysis of current information as well as perspectives of further development of the project which will be implemented within the framework of "Public Administration Improvement" project funded by the EU.

This was done to encourage more transparency between state bodies and also to avoid duplicate work. The outcome is the creation of a so called e-Catalogue which helps when designing new processes / services.

It is planned to restructure the RoR but no specific plans are announced. There are talks with businesses in order to find a solution taking their requirements into their consideration. DEA is monitoring the process.

SC (Service Catalogue) – is the existing technical platform for information, provisioning of granular services and implementing aggregated services for public and also private institutions - for example a bank can use these specifications and services. Before publishing all Services should pass e-Services certification rules and noted down in Service catalogue for further usage then. Therefore all Government e-Services and e-Services exchange Standards mentioned above in the e-Services Section are quite important for this multiplication layer.

b. Current situation and initiatives

G3: First steps in integrating organisational bodies and institutions have been done but there is still work to do and to integrate all agencies.

SC: Candidates for service catalogue are national, local government services but also business/private services (Banks, Insurance Companies, Notary Office, Real Estate, Education, all kind of Transport, Gambling ...). Most of the services are not identified yet. Ten services most requested from citizens are in this catalogue as a starting point.

RoR: 90 organisations

- Registered: 83 organisations (3 organisations refused cooperation – maybe to avoid this further on TWINING projects recommendations and related projects should be supervised by Government Higher management Level)
- 63 organisations started filling in data
- Number of registries in total: 316 / Number of services in total: 211

c. Goals and action plans

Stakeholder benefits:
The basic back office services like G3, SC, RoR etc. are in place and established; the usage and possibility for integrating is a major benefit for other governmental institutions as well for the private sector. Through the provided documentation for the expected service definitions an increase of the provided services leads to more generic, aggregated services.

- Integration of 90% of the relevant agencies into the G3 infrastructure until 2018.
- Restructuring RoR for easier documentation (tools, support etc.).
- 80% of the organisations should document / provide their registries and services in a defined structure until 2015 according the approved common e-Services standards.
- There should be a monitoring process installed to support the inclusion into RoR based on the regulation in place.
- Tools for checking the data and information delivered.
- Granular service providers identified and in second step trained to provide services in SC infrastructure.
- Identify relevant granular services per institution.
- Launching 80% granular fully functional services in the period 2015-2018..

Actions and expected outputs:

Table 17: Action plan for Infrastructure – Backoffice e-Government services

No	Title	Description	Output	Time-line	Res-pon-sibility
1	Awareness rising (also for non-Governmental organisations)	Together with relevant stakeholders of the 'service' scene a communication and awareness rising process should be established, so that the 'trust' in the G3 infrastructure (service) but also the RoR infrastructure should be enhanced; this may be extended in a second phase also to Non-governmental cooperation partners(see section 3.11 Awareness).	Awareness campaigns established.	2014 – 2015	DEA, Min of communication (i.e.?) relevant ministries
2	Training seminars for G3 integration as well as RoR information provision	Seminars with a duration of 2-3 days should be offered to various public institutions to raise the awareness of using G3 infrastructure as well as starting the integration of relevant services into G3 infrastructure per organisation (templates are existing) Training activities for usage and delivery of RoR information Providing tools for restructured information processing & delivery (see section 3.9.2 Skills).	Training seminars established.	2014 – 2015	DEA, relevant ministries
3	Monitoring process for RoR information provision	RoR comes out of a regulation but needs some supporting mechanism for monitoring the legal need of fulfilment. Establish an organisational structure for monitoring and improvement of RoR (see section 0 **Error! Reference source not found.**).	Monitoring process up and running.	2014 -	DEA, relevant ministries
4	Service catalogue and taxonomy	Service catalogue and taxonomy to ensure infrastructure to tag e-Service for packaging and personalisation of services. Project is linked to the Georgian Gateway, RoR and my.gov.ge. Identify relevant institutions for being candidate for SC-services (e.g. services with adequate impact: revenue services) .Identify adequate services per institution (compare with above) and actual status of service ('webservice' candidate / following reference architecture model Y/N).	Service catalogue provision & filling established.	2014 – 2017	DEA, other relevant ministries & public institutions

d. Performance targets

- Awareness campaign established (see section 3.11 Awareness).
- Restructure RoR information structure according to identified needs by end of 2013 and provide tool(s) based on developed and approved e-Service Standards for easier information processing in 2014.
- Trainings/seminars established in 2014 (which result also in an increasing percentage per year of services provisioned in the RoR and of services integrated in G3 / registries (see section 3.9.2 Skills).
- Organisational structure (clearinghouse) for monitoring and improvement of RoR established in 2014; processes for measure and monitor integration of

different agencies in RoR established and productive end of 2014 (see section 0 **Error! Reference source not found.**).

Service catalogue established – 50% of (relevant) services available in 2015, 85% in 2018.

3.7.3 Infrastructure – Authentication

a. Introduction and scope

In order to make procedures with public authorities both secure and traceable, public authorities must be able **to verify who a person is so that there is no doubt as to their identity – i.e. authentication**. An electronic tool is needed that can uniquely identify, and authenticate, citizens and businesses e.g. via e-IDs, digital signatures or e-Stamps. This electronic identification is the Georgian e-ID (card). The e-ID card can also be used to sign documents securely and electronically.

In comparison to other systems, the e-ID card has many advantages. The normal username/password approach presents a high security risk due to poorly chosen passwords – not to mention additional Password database maintenance operations, security issues and resulting in operational costs. Research has shown that many computer users select bad, easy to crack passwords (e.g. their own name) or write the passwords down. Passwords can also be intercepted on the Internet. All of these problems lead to unauthorised access. The "digital signature" is covered by law and protects against unwanted access and changes to content.

The term "Georgian e-ID" is used to describe an identity management concept that makes it possible to provide electronic services for public administration employees and customers in a simple and secure manner. As the electronic identification in the Internet, the e-ID card provides unique identification and authentication of users, which is necessary in order to offer certain electronic procedures.

e-Stamp is to identify the organisation as an official signature. e-Stamp is used in private sector as well like in banks. It is important where to use e-Stamps. Stimulate other institutions to use e-Stamps (PSDA – Feasibility Study and Market research for target areas identification).

Biometrics and signature pads in banks are in place of physical signatures.

b. Current situation and initiatives

e-ID: First steps in issuing and integration of Georgian e-IDs have been taken; Necessary campaigns have to be started then to support the enrolment of Georgian e-ID in the different target group areas (including public sector employees).

e-Stamp: enlarge the e-Stamp usage within business sector (banking, insurance, …) but also public sector (‘official signature’ – to confirm document was issued by an authority, institution etc.); A precondition is to establish a service for e-Stamping and e-Stamp-Validation – this could be done as a shared service cause frequency & SLA may encourage such an approach.

The rollout of e-Stamp is scheduled for 2014. There are no use cases available yet and intensified talks with businesses are still on-going.

c. Goals and action plans

Stakeholder benefits:
A key part of high take-up is the diffusion of trustworthy, secure and reliable basic infrastructure services such as digital identification, digital signature, e-Stamp, online payment, online transport and delivery. The introduction of these basic services was driven by government and established together with other e-Sectors (especially business and health) Through these established services the need for duplication of authorisation and authentication mechanism for own processes (G2C, G2B etc.) is reduced, Also the establishment of trustworthy usage of e-Documents including official signatures (e-Stamp) is a main pillar in the provisioning of authentic e-Services.

Actions and expected output:

Table 18: Action plan for Infrastructure – Authentication

No	Title	Description	Output	Time-line	Res-pon-sibility
1	Awareness rising (especially within Governmental organisations) – e-ID development	Together with relevant stakeholders of the 'service' scene a communication and awareness rising process should be established, so that the 'need' for Georgian –e-ID is to be seen by target groups (3 main services using e-ID per target group) and foster the usage of Georgian e-ID within the public sector in Georgia including improvements in existing back-end infrastructure and certificates architectures chosen (see section 3.11 Awareness).	Awareness campaigns established	2014 – 2016	PSDA,
2	Awareness rising (especially within business organisations) - eStamp development	Together with relevant stakeholders of the 'service' scene a communication and awareness rising process should be established, so that the 'need' for e--Stamps is to be seen by target groups. Identify institutions with IN / OUT need for e-Stamp (see section 3.11 Awareness).	Awareness campaigns established.	2014 – 2015	PSDA, other relevant ministries and agencies
3	Provide service for e-Stamping and e-Stamp-Validation	This could be done as a shared service cause frequency and SLA may encourage such an approach.	Service provided.	2014	PSDA, other relevant ministries and agencies
4	Interoperable process for connecting to EC/other CAs	A interoperable process (including regulative works) needs to be established towards other (EC, …) relevant CAs. It helps to support and fulfil information security & -critical processes (see section 3.10.1 Legal framework)	Organisational/ security process established.	2014 - 2017	PSDA

5	Evaluation of future model Georgian e-ID	Feasibility study for future model of e-ID (mobile e-ID - particularly in light of price and penetration of smart phones in Georgia.	Study provided	2014 - 2015	DEA, PSDA

d. Performance targets

- 60% of population using the Internet has e-ID by 2018.
- 10 % of issued e-IDs have Digital Signature activated by 2018 (as a good practice example, all Government officials have Digital Signature activated).
- Awareness campaign established and 0.4mln citizens have activated Georgian e-ID functionality (means also using it) by 2018 (see section 3.11 Awareness).
- Awareness campaign established by 2016 (see section 3.11 Awareness).
- 70% of Georgian business/enterprises using e-Stamps by 2018.
- Service for e-Stamping and e-Stamp validation established by 2014.
- Interconnectivity to EC CA (or other relevant CAs) established in 2014 and based on regulative framework by 2015 (see section 3.10.1 Legal framework).
- Future model of Georgian e-ID evaluated by 2015.

3.7.4 Infrastructure – One-stop portal my.gov.ge

a. Introduction and scope

The first place to go for questions about public authorities or e-Government services is the my.gov.ge portal. The portal is also a useful service point for administration and is often the best place to go for information on public administration in Georgia and started offering online services according to the one-stop principle and continues to successively integrate and develop new services. Revenue services and Civil and Public service registry onLine services listed in the could be an important driver for the portal. But also services for businesses should be offered and provided beside citizen's services.

b. Current situation and initiatives

A number of services are offered via my.gov.ge and the number is increasing day by day. For example for citizen: personal information (personal info; address change; tax due; crossing border; apostil; participation of person in document; repeated biometrical passport.); family; health; social service; property; business; payments, penalties; education; information. How www.my.gov.ge is focusing and supporting the citizen? For using services a citizen does not need to know which agency it belongs or refers to, that saves time, saves travel expenses and the service could (even) be obtained outside Georgia - also combined services, Service as a combination of services from different government agencies transparently available for registered / authenticated citizens (example: Birth Certificate with translation and apostil).

Prerequisites for using my.gov.ge are a computer connected to the Internet, an e-ID card, an e-ID card-reader, the Pin code received together with e-ID card (or being registered at a Public Service Hall to get username and password).

There are currently no plans to integrate business into the portal since e-Stamp is not rolled out yet.

c. Goals and action plans

Stakeholder benefits:
A central place for finding information, communication, transactional or even personalised services for citizens and business is the my.gov.ge portal – there, all relevant services for citizens, business as well as private services are offered.

Through this one-stop shop portal idea this means also no need to further search for relevant services in other portals.

Actions and expected output:

Table 19: Action plan for Infrastructure – One-stop portal my.gov.ge

No	Title	Description	Output	Time-line	Res-pon-sibility
1	Service catalogue and taxonomy	Service catalogue and taxonomy to ensure infrastructure to tag e-Service for packaging and personalisation of services. Project is linked to the Georgian Gateway, RoR and my.gov.ge.	Service catalogue & taxonomy for better service integration provided.	2014 - 2017	DEA, other relevant ministries & public institutions
2	Awareness rising for central access strategy (portal solution)	Together with relevant stakeholders of the 'service' scene a communication and awareness rising process should be established, so that the 'need' for service integration of (potential) Georgian e-Services is to be seen by target groups (three main services using e-ID per target group) (see section 3.11 Awareness).	Awareness campaigns established.	2014 - 2015	DEA, relevant ministries, public institutions
3	Integration methodology and training for service design, implementation/provision/integration	Seminars with duration of 1-2 days should be offered to various public institutions to raise the awareness of using my.gov.ge infrastructure as well as starting the integration of relevant services into my.gov.ge infrastructure per organisation (templates are existing).	Training seminars established.	2014 - 2016	DEA, relevant ministries, public institutions
4	my.gov.ge – private sector cooperation	Project for my.gov.ge inclusion of private sector services (banking, insurance, utilities, telecommunications etc.) and includes my.gov.ge e-Service on Payment Points.	Private services identified and integrated.	2014 – 2016	DEA, private sector
5	Future my.gov.ge access	Feasibility study for future deployments of my.gov.ge idea (apps, HTML5 solutions etc.) (see section 3.1.1 e-Services for citizens (G2C).	Elaboration of future kind of collaboration/work.	2014 – 2016	DEA

6	Integration of services for business life cycle	Project e-Services for the business life cycle into the my.gov.ge, i.e. completing e-Services relevant for the full business life cycle.	Business life cycle model established.	2014 - 2016	DEA

d. Performance targets

- 90% of potential citizens' services with web architecture are available at my.gov.ge by 2018.
- my.gov.ge is integrating 80% citizens and private (potential) services by 2018.
- All 19 life events (LE) defined by the Public Services Online[31] implemented by 2018 in the my.gov.ge portal (including e-ID and e-Documents).
- my.gov.ge: 90% integrate services for business and business services by 2018.
- Catalogue of services (services within this catalogue need to be classified: e-ID (needed & integrated y/n), fully electronically transactional and personalised (according to appliers background/need) or 1/2/3/4 (information service, communication service, one way transaction service, bilateral transaction service) stage, e-Payment (needed & integrated y/n), e-Delivery (needed & integrated y/n), based on which regulation (and/or already adopted etc.) available end 2013.
- Awareness campaign established and not less than 0.3 million users registered at citizen portal my.gov.ge by 2018 (see section 3.11 Awareness).
- Syllabus and curricula agreed and seminars established by 2014.
- Relevant institutions have participated in seminars by 2016 (see section 3.9.2 Skills).
- Private sector has been analysed/screened and relevant sectors are integrated in my.gov.ge with starting services by 2016 and broader availability given in 2018.
- Future model of my.gov.ge evaluated by 2015.

[31] European Commission: „Public Services Online 'Digital by Default or by Detour?', Assessing User Centric eGovernment performance in Europe – eGovernment Background Report Benchmark 2012, ISBN 978-92-79-29951-3

3.8 e-Security

People will use the applications and new technologies and profit from them if they trust them and if they are available. On the one hand, trust is created by a secure environment, where effective measurements are taken against cybercrime and structures are implemented to prevent frauds. These measurements are not limited to technical, but also include organisational and legal frameworks. For example people might contact service centres and get support in case of becoming victims of cybercrime. On the other hand, availability depends on the proper functioning of critical infrastructure. This type of infrastructure has an extraordinary importance for the society and governance. Its failure has great negative impact for public security and maintaining a working society. This section focuses on the critical infrastructure related to ICT.

3.8.1 Security of critical infrastructure

a. Introduction and scope

The failure of a critical infrastructure could be a threat to a greater part of the population and the nation as a whole. That means that some infrastructure like telecommunications networks and servers are critical to maintaining the governance of Georgia. Countries become more dependent on this critical infrastructure and more vulnerable to incidents if resilience of this infrastructure is not enhanced. The cyber-attack against Georgia in August 2008 in combination of the increasing use of IT technologies by state institutions and private sector put the issue of information system security on the agenda. Recent history and conflicts regarding attacks on (critical) infrastructure have demonstrated that protection of the critical infrastructure bears equal importance for the national security as the protection of other infrastructure like roads, havens and airports.

b. Current situation and initiatives

Based on the needs of a secure information system it became necessary to define precisely regulatory rules. In order to solve these issues Law of Georgia on “Information Security“ has been developed that entered into force on 1 July 2012 (see section 3.10 Enabling frameworks and governance). Law of Georgia on “Information Security” defines a whole set of obligations for the entities of critical information system.

First of all, each entity should have internal policy of information security which will comply with minimal requirements of ISO 27000. Information Security Officer should be responsible for implementation of these rules. Besides, the law considers conducting information security audit, information system penetration (stability) testing and assembling and management of network sensors in order to identify computer incidents. Law also regulates cyber security issues, in which attributes great importance to Computer Emergency Response National Team in the defence of critical information system of the country (cert.gov.ge). Not only identification, prevention of incidents and management of results fall within the obligations of National CERT, but also organisation of educative activities and raising public awareness.

An agreed Cyber Security Strategy of Georgia (2012-2015) is already in place, including action plans and activities to ensure the security of the critical infrastructure. That security strategy outlines state policy in the area of cyber-security, reflecting strategic goals and guiding principles, and laying down action plans and tasks. Starting from 2012 research for identifying objects for critical information systems has been conducted and an analysis of resilience of the critical systems has been started. As mentioned with the Law of Georgia on “Information Security”, first steps were taken to adapt the legal basis for ensuring the security of the infrastructure. Due to the raising awareness for this important topic strategic initiatives are already set and should be supported in the future.

c. Goals and action plans

Stakeholder benefits:
The government ensures the functionality of basic infrastructure for the population. Information and communication facilities are critical to government agencies but also to businesses and other organisations. A reliable and resilient infrastructure means a huge benefit to these institutions. In crisis, communication is still working and important information can still be exchanged with each other. Even if there is a breakdown of the infrastructure people know what to do in order to reset it and to allow rapid recovery. With this knowledge people trust their infrastructure and are more willing to rely on it.

With a common understanding of critical infrastructure the stakeholders like government agencies or businesses are able to draft protection of this critical infrastructure. A tight cooperation among the stakeholders is much easier, if a common understanding exists and if people use the same terms and definitions.

Since attacks are launched worldwide cooperation with other countries enhance the understanding and resilience of the system and provide more trusts in the system.

Actions and expected outputs:

Table 20: Action plan for Security of critical infrastructure

No	Title	Description	Output	Time-line	Res-pon-sibility
1	The methodology of identification of critical infrastructure subjects defined	A concise methodology to identify which infrastructures are subject to be critical is missing. Therefore a list of all critical infrastructure subjects cannot be completed. The security council could be an institution to fulfil these tasks. Know-how from other countries is needed.	Methodology of identification of critical infrastructure.	2014	DEA
2	Further improvement of the legislation on information security	New technologies demand the revision of current legislation and sometimes new legislation. Especially in the digital world new legislation is needed to ensure the security. Therefore it is proposed to adopt or amend the respective legislation in addition to already exiting Information Security Act (see section 3.10.1 Legal framework).	Revised legislation.	2016	DEA

3	Train the people and knowledge	A university curriculum should be set up. Also staff of Ministries should be trained. An e-Learning tool on this topic could be helpful. Explore the feasibility to establish a dedicated research centre on the issues of information and cyber security (see section 3.9.3 Align IT curricula to business needs and see section 3.9.2 Skills).	New university curriculum, trained staff.	2016	DEA
4	International cooperation	Cooperation with respective agencies of EU, USA and neighbouring countries should be established for knowledge sharing.	Regular talks and information exchanges.	2017	DEA, Min. of internal affairs
5	Public-private cooperation	Development of cooperation mechanisms extending beyond government agencies to public-private partnership is equally essential for ensuring cyber security. Larger part of critical information systems of Georgia is owned by private business and relevant experience and knowledge are mainly available in private companies.	Cooperation modalities .	2016	DEA, Cyber Forum

d. Performance targets

- Methodology of identification of critical infrastructure subjects is defined by 2015.
- Legislation on information security revised by 2014 and implemented 2016 (see section 3.10.1 Legal framework).
- University curriculum formulated regarding information and cyber security by 2016 (see section 3.9.3 Align IT curricula to business needs).
- Cooperation for knowledge sharing is established with EU, USA and neighbouring countries by 2017.
- 30% of the relevant IT staff in the ministries are trained in security of critical infrastructure by 2016 (see section 3.9.2 Skills).

3.8.2 Information and cyber security

a. Introduction and scope

Cyber security is one of the principal directions of Georgian security policy. Cyber security will facilitate, on one hand, the resiliency of cyber infrastructure against cyber threats and, on the other, represent additional factor in the economic growth and social development. Cyber security means the protection of the infrastructure and other facilities (databases, registers, websites, controlling units etc.) against attacks as these threats endanger the society and the governance.

Infrastructure and services provided by the public sector are characterized of high quality (see 3.2.1). Beside user friendliness, reliability, availability and other criteria, security is one of the dimensions of quality to foster trust and acceptance by users. Thus, security is to be integrated if the quality of services is assessed.

b. Current situation and initiatives

Georgia has done its outmost to prevent cyber-attacks since the August 2008 incident. An agreed Cyber Security Strategy of Georgia and action plan (2012-2015) aiming to ensure cyber security has been implemented. The Council of Europe Convention against Cybercrime was ratified by the Parliament. The agencies which should be involved in the cyber security policies and their competencies have been identified. These agencies and other organisations should be trained in preventing cyber security. First training programmes have been offered. Evidently research in cyber security is necessary to keep up with the development in this field. Therefore research on this issue has been already facilitated. First projects of enhancing public awareness of cyber securities are launched and methodologies of public-private cooperation are investigated.

Since the beginning of 2011 Data Exchange Agency (DEA) was actively participating in the process of developing national strategy for cyber security of Georgia. The process was going on within the framework of working group established by the National Security Council. Strategy and its implementation plan is based on evaluation of challenges and threats in cyber field of Georgia and correspondingly, names the unified attitude of the government, cooperation with state and private sector and international cooperation as leading principle. In order to achieve the goal set, strategy implementation plan covers such issues as study and analysis, necessity of new legislative normative base, institutional coordination of cyber security ensuring, raising public awareness, formation of base and also international cooperation in this field.

On an international level the cooperation with organisations like OECD, EU, UN, ITU is strengthened. An active participation at conferences in Caucasus region is supported.

c. Goals and action plans

Stakeholder benefits:
The benefits of state agencies, private entities and other public institutions are safe operation cyberspace, offering trusted services to the users, ensuring secure electronic transactions and unhindered functioning of Georgian economy and business. Measurements to minimise harmful effects of any cyber-attacks for the attacked organisation are essential for the continuing operation of this organisation because many processes are based on electronic facilities.

If Georgia could become the regional leader of cyber security and export its know-how in this field it will give reputation to the country and a better positioning in the world. Moreover people are more willing to engage in this field, acquire know-how and contribute to a safer cyberspace.

Actions and expected outputs:

Table 21: Action plan for Information and cyber security

No	Title	Description	Outputs	Time-line	Res-pon-sibility
1	Cyber Security Forum	The Cyber Security Forum is an informal discussion and coordination institution where leading IT experts from the public and private sector come together and exchange their	Broader Cyber Security Forum.	2015	DEA

		experiences, talk about their initiatives and measures. This Forum should be enlarged and more stakeholders should join the Forum.			
2	Setting up a network sensor system	Development and improvement of the sensor systems in critical infrastructure subjects. With this sensor system, threats can be detected quicker.	Network sense system.	2015	DEA
3	Capacity building (human and environment)	Training of staff and acquiring know-how are one of the most important fields in cyber security. A systematic capacity building can guarantee a high level of cyber security. More funds are needed for training and to enlarge the meetings (see section 3.9.2 Skills).	Trained staff.	2016	DEA
4	legislation: digital evidence	Guidelines are to be adopted to enable the digital evidence and a criminal legislation code should be prepared (see section 3.10.1 Legal framework).	Laws considering digital evidence.	2015	DEA, Min. of Internal Affairs
5	Launching information campaign, advertising in several media, education:	In cooperation with broadcasting companies, ISPs and others, the awareness for this topic should be increased. The Cyber Security Forum could be the coordinating institution (see section 3.11 Awareness).	Campaigns.	2014	DEA, Ministry of Justice, GNCC
6	International cooperation and working with donors (OECD, EU, OSCE, NATO, UN, ITU)	Strengthening relations in cyber security matters with international organisations working in cyber security (OECD, EU, OSCE, NATO, UN, ITU) as well as relevant national authorities; Active participation in international activities related to cyber security and supporting relevant initiatives on a regional scale; Initiating bilateral and multilateral cooperation with national CERTs in the area of cyber security.	Regular meetings and talks. Cyber security events in Georgia.	2015	DEA, GNCC, Min. of Finance, Ministry of Defence
7	Establishing a competence Center for Cyber security	Creating a competence centre with the involvement of universities, government agencies and businesses brings Georgia a decisive step further to the target of becoming a regional leading nation in cyber security. In this competence centre international recognised research is conducted in cooperation with the stakeholders. It is also the main platform for all questions about cyber security.	Competen-ce centre.	2018	DEA

d. Performance targets

- Participants to the cyber security forum increased by at least 40% by 2015 (based on approx. 50 participants by 2013).
- 60% of cyber security specialists of ministries are trained in cyber security by 2016.
- 40% of ministries have a network sensor system established by 2015.
- 3 national campaigns were launched by 2014 (see section 3.11 Awareness).
- 8 cyber security events are hosted by 2018 (see section 3.11 Awareness).

- Guideline for digital evidence adopted by 2016.

3.9 Skills and e-Inclusion

e-Government applications are designed by people for people. Therefore, on the one hand, Georgia needs highly sophisticated system developers, who are able to plan, design and implement the applications described in the strategy. This can only be ensured, when higher education offers appropriate courses and disciplines. On the other hand, users need skills to profit most from the applications provided. The first step for successful take-up and use is therefore to create awareness to potential users and to show them the advantages of using the available systems and applications. Subsequently, users need to be enabled to use the systems. This can be done by trainings or self-explaining documentations.

Trainings should already start at schools bringing the new technologies to curious and open-minded children. The new generation learns easily how to use these technologies as in their life, they will be inevitably confronted with them. In general, as ICT improves the processes of nearly all sectors and is one of the pillars for modernisation, the skills become essential for taking part in the information society.

This necessity is valid for all groups of the population as everybody profits from access to information and communication technologies. Therefore, persons with special needs are also considered in the strategy for an information society in Georgia and special attention is given to their needs. For examples, the W3C criteria are considered in the creation of applications (see section 3.1). Also the goal of the public libraries project (beyond access project) is to reinvent library as a shared facility for traditional library functions, free community access to ICT and skills improvement, contributing to the community initiatives and development (see section 3.7.1). It will increase the role of the library to enhance trust and relationship between local governments and its population through introducing e-Governance.

3.9.1 Education

a. Introduction and scope

The scope of this section is focused on general education of pupils in the grades 1 through 12. For tertiary education (university) please also refer to section 3.9.3. Considering education, both sides of teaching should be illustrated: on the hand, teachers should be able to convey the ICT skills and to use ICT in their lessons in order to achieve a more lively teaching. On the other hand students should be able to use ICT in a secure and responsible manner and exploit the full potential of the new technology without disregarding the risks. A clear view on how to ensure that the next generation will have the skills to manage the new technologies is necessary.

b. Current situation and initiatives

The current situation regarding the digital infrastructure in primary schools in Georgia is promising. In the last three years all first grade pupils and the teachers of the primary schools were equipped with a notebook. Every school in Georgia is connected with broadband. Devices, needed for an electronically supported teaching, like beamer or smart boards, are only installed rudimentarily due to the high costs. In 2004/5 a new

curriculum was established for general education which has shifted the teaching of ICT skills from an own subject to an integral part of each subject. In order to improve the skills of teachers some training courses are offered to them. As a motivation teachers get credits if they participate in these training courses. They need them to renew their teaching licences or otherwise pass an exam. They are also encouraged to learn ICT skills and English leading to higher salaries. About 50% of the 65.000 teachers attended the basic ICT skill training and 30% the advanced ICT training.

In middle and higher schools teachers attend courses where they learn the basic IT skills but also methodologies of teaching with ICT in their subjects. Nevertheless the trained teachers are not always motivated to apply their ICT skills in the classroom. Thus, on the one hand teachers are motivated to learn new ICT skills, on the other hand, they hardly use the learned lessons to improve their teaching. There is no assessment of using ICT in classrooms. Teachers have no incentive to take on the additional burden caused by more preparation and keeping up-to-date with the technical development. Moreover, there is a lack of trained IT personal to support the teachers and pupils experiencing IT-related technical or connectivity problems in the classroom. Although an agency pools such IT-skilled persons for school, the system does not work satisfactorily. The staff are either not available or they are focused on school infrastructure only, and not on the problems teachers and pupils have with their devices and applications.

A mid-term range education strategy addressing ICT in schools is missing. Applications for the use in education could be found in www.buki.ge. Content in Georgian are rare. Research projects like using a cloud system in education are planned.

c. Goals and action plans

Stakeholder benefits:
With ICT, teachers improve their teaching. So they use tablets or notebooks to explain things or pupils can collect information about topics. For pupils this kind of teaching is more interactive and they learn how to search information. Teachers offer a modern way of teaching and foster the curiosity of pupils in technologies. With the measurements concerning Georgian language pupils have access to a broader variety of applications in their mother tongue. Creating a system of innovation people profit from innovative applications made in Georgia.

Actions and expected output:

Table 22: Action plan for Education

No	Title	Description	Outputs	Time-line	Res-pon-sibility
1	Facilitation of ICT direction and its delivery in national educational plan	Development of ICT educational plan, creation of mandatory and selective courses and related resources (i.e. textbooks), development of detailed instructions for integration of ICT in other subjects, etc.	More skilled stu-dents.	2014	MES

2	Intensify the teachers' training in ICT	Increase training for the teachers in ICT and revise training materials. As an example, the ECDL[32] could be considered for adoption.	More ICT-skilled teachers.	Every year	MES
3	Adapt education content into Georgian local needs and add local content	Adapt existing applications and video training materials (of foreign languages) into localised solutions and produce apps and content of Georgian local relevance according to the requirements of the Georgian schools. Cooperation between public and private sector in this field could be profitable for both sides.	More Georgian content.	ongoing	MES
4	Establish a web portal for sharing learning resources online	A web-portal to share resources among teachers and pupils shall be developed and rolled out. Open source solutions such as OLAT, Blackboard, Moodle, CLIX, MediaWiki etc. shall be assessed.	Web portal for resource sharing .	2015	MES
5	Certificate for students	General acknowledged and accepted certificate for students should be established. This would help employers to assess the ICT skills of potential candidates. This could be included in the graduation requirements. As an example, the ECDL could be considered for adoption.	Certified students	2016	MES
6	Help desk for IT support and IT coaches	Teachers and schools need an effective system of IT support. IT-skilled persons should be (virtually) available and their competences should meet the requirements of the schools. Especially intensive coaching of those teachers with excellent IT skills, who become responsible for the development of ICT in their schools, should be organized.	Helpdesk for IT support in schools.	Ongoing	MES
7	E-Leaning/ Blended learning	Rural regions like in the mountains are lacking of high-qualified teachers. With the introduction of e-learning and blended learning or with videoconferencing pupils profit from high-quality teaching. A strategy should be drafted how to implement this system based on a valuation of the current situation.	Better quality of teaching in rural areas.	2016	MES
8	ICT into the curricula of teachers	At teachers' colleges ICT should be a significant part of the curricula. Each graduated teacher should have reached a certain standard of ICT skills which have to be defined. It must include the ability to use ICT and to use the methodologies of teaching with ICT in their subjects.	Better trained teachers.	2014	TPDNC and Universities
9	Ensure basic computer equipment for teachers	Equipping teachers with computers and/or placement of computers at classrooms and teachers' room (for this purpose partly computer labs existing at schools can be used)	Teachers equipped with computers.	ongoing	MES
10	Revise teacher ICT	Revise teacher ICT standards and national curricula for ongoing needs of ICT skills and	Updated curricula and	2014	MES

[32] www.ecdl.com, European Computer Driving License is a source of teaching material and certificate to proof the capabilities of ICT skills for students. Similarly, teaching material and certification is available for employees who need ICT skills and teachers who require skills in teaching such skills.

	standards and national curricula	for ensuring a minimum level of ICT literacy to be taught at schools.	ICT. standards for teachers		

d. Performance targets

- 40% of the teachers passed the advanced ICT skills exam by 2018.
- 60 new applications and content in Georgian language by 2016.
- Web portal with electronic resources accessible for teachers and pupils by 2016.
- 90% of the students with basic ICT literacy and knowledge use e-Services of the government by 2018.
- A new effective system of IT support for schools and teachers (Help desk) is .set up by 2015.
- E-Learning and blended learning system is set up in pilot projects for schools in rural areas by 2017
- Minimum 5% of the curricula hours in teachers' colleges are dedicated to ICT by 2015.

3.9.2 Skills

a. Introduction and scope

The Georgian people could only exploit the potential of ICT if they know how to use and develop these new technologies. Therefore, acquiring skills for the population is one of the central themes of the strategy. Besides improving skills of the general population special attention should be given to special target groups like elder, disadvantaged, low-income people or people living in rural areas. These groups are usually not very familiar with using computers, searching information in the Internet or working with new technologies although they would profit to a great extent.

b. Current situation and initiatives

In order to reduce the unemployment rate the government offers training on English and ICT basic skills. Since websites in Georgian are limited, the knowledge of English opens a door to a vast amount of international information. Still, more than 60% of Georgian people use only traditional media like TV or radio. In a pilot project more than 300 villages were equipped with ICT devices and infrastructure. A competition was initiated among the villages to foster ICT skills. Skilled members of the villages help their neighbours in using ICT and convey them basic skills.

Infrastructure and broadband connection in rural areas are still a challenge. On the one hand, Internet access is comparatively expensive and suffers from low bandwidth. On the other hand people are willing to buy the devices like computers or tablets.

c. Goals and action plans

Stakeholder benefits:
Special groups use the Internet to get more information and use e-Government services. Thus they are better informed about developments in the country and have

a better chance to participate actively in communities. Using the e-Government services they save time to go to the authorities in order to file applications. People know better how they benefit from using Internet and how convenient it is to use e-Government services (see section 3.1 and 3.11).

Actions and expected output:

Table 23: Action plan for Skills

No	Title	Description	Outputs	Time-line	Res-pon-sibility
1	Training of special groups	Offer training opportunities to groups like unemployed persons, low-income persons, offliners or elder people. These trainings should be designed according to the needs of these groups and should show their individual benefit of using ICT.	Skilled persons in special groups.	ongoing	Municipalities, Tbilisi City Hall
2	Raising awareness via Internet and social media	For those people who are already using the Internet, awareness campaign of topics like privacy, security could be useful. It will help them to think about important topics related to their Internet use. The campaign should also include the benefit of the e-Government services and how to use them (see section 3.11 Awareness and 3.2.1 Feedback on e-Services).	Campaigns in the Internet.	ongoing	DEA, training service providers
3	Raising awareness through campaigns for those not yet online	People who are not online yet ("offliners") are lacking of information what ICT could do for them and how they profit from them. These people could be targeted by traditional media like TV, radio or newspapers. Another channel is campaigns in villages (see section 3.11 Awareness).	Campaigns.	ongoing	Municipalities, Tbilisi City Hall
4	Develop Georgian contents	See subsection 3.9.1, item 2.			
5	Develop and offer short term training and vocational training on ICT skills	In order to fulfil the massive demand of the ICT experts and to ensure the smooth establishment of an ICT-Hub, short-term training programs and vocational training should be set up. Vocational courses combined with practical usage lead to experts who can apply their knowledge in practice. Their certificates should be recognized by the potential employers. These activities need intensified coordination.	Short-term and vocational trainings .	ongoing	MES, training service providers

d. Performance indicators

- 5 campaigns in Internet are launched by 2015 (see section 3.11 Awareness).

- 3 campaigns in traditional media are launched by 2015 (see section 3.11 Awareness).
- 30 % increase of participants in short-term and vocational ICT skills trainings by 2017 (based on 2014 figures).
- 30 % in 2016 of disadvantaged people use regularly the Internet according to the Digital Agenda Performance Indicators of the European Commission.[33]
- Percentage of individuals who have never used the Internet is lower than 25% (tin00093) in 2018 (see section 4.2.4, definition provided by Eurostat).
- Individuals' level of computer skills (tsdsc460): Low level of basic computer skills: 15 % of individuals have carried out 1 or 2 of the 6 computer-related items in 2016 (see section 4.2.4, definition provided by Eurostat).
- Individuals' level of Internet skills (tsdsc470): Low level of basic Internet skills: 30% of individuals have carried out 1 or 2 of the 6 Internet-related items (see section 4.2.4, definition provided by Eurostat).
- Percentage of individuals regularly using the Internet (tin00091) to 75% by 2016 (see section 4.2.4, definition provided by Eurostat).

3.9.3 Align IT curricula to business needs

a. Introduction and scope

Georgia cannot become an ICT-Hub and develop a prosperous ICT sector if it is lacking of skilled IT-workers. Therefore, initiatives should ensure that the skilled workers are available.

b. Current situation and initiatives

In the current situation five universities offer IT studies. The curricula of these IT studies do not comply with the needs of the businesses. Especially software developers who are familiar with the current technologies and engineering tools are a bottleneck. Often students do not learn these skills in their study because they are taught lessons that do not reflect the recent development in the ICT sector. Moreover, students in the IT field find great opportunities in the private sector, so they are not willing to go to the universities for teaching and researching. Therefore the know-how learned in the private sector is not transferred to the universities. Further trainings are very expensive. Often, specialist cannot afford it, so they trained themselves but still lacking of certifications. Establishment of new technical studies is already on-going (for example study of mechatronics).

c. Goals and action plans

Stakeholder benefits:
Students would profit from a profound education in ICT if the lessons match the needs of the business. Otherwise they invest their time for a graduation which is not recognised by their potential employers. The businesses would also profit from high skilled persons. They don’t need to spend money for additional training but just use them and their skills for their projects. The reputation of the universities would be better, if they offer high quality and modern training.

[33] European Commission: “A Digital Agenda for Europe“,COM(2010) 245 final/2, Brussels, 26.8.2010.

Actions and expected outputs:

Table 24: Action plan for Reduce and eliminate the discrepancy between curricula offered and IT educational institutions and business needs

No	Title	Description	Outputs	Time-line	Res-pon-sibility
1	Establish more ICT curricula in the universities	It is not sufficient that only five universities in Tbilisi provide ICT curricula. Therefore a revision should be made to evaluate in which universities further ICT curricula can established.	Increased number of ICT curricula (BSc, MSc) at Universities.	2014 - 2016	MES
2	Revision of existing curricula	Existing curricula of ICT studies in the universities should be revised in order to cover up-to-date ICT topics more prominently. Together with the businesses, a requirement analysis should be conducted to find out what needs do potential employers have and how these could be integrated in the existing curricula. Cooperation on international scale should be set up in order to get teachers from international scope. Also a broad participation on international programs for building up such master programs should be initiated.	Revised curricula.	2014 - 2015	MES, ICT sector
3	Short term and vocational training programs	See subsection 3.9.2			
4	Promote entrepreneurship	In the ICT curricula (c. items 1 and 2 above), entrepreneurship should be integrated and promoted because new companies support the development of an ICT exporting nation and create jobs. So a minimum of entrepreneurship skills should be integrated in the bachelor or/and master curricula.	Entrepreneurship a part of ICT curricula.	2014 - 2016	MES

d. Performance targets

- Relevant up-to-date ICT skills and topics based on ICT sector's needs are covered in existing curricula by 2016.
- Number of ICT-based curricula in ICT has increased by 20% by 2016 (on the basis of the ICT curricula offered in 5 Universities in 2013).
- Regular collaborations / relations meetings (at least two per year) between universities and companies in the sector are set up in 2014.
- At least 5% of lessons in every ICT curriculum is dedicated to entrepreneurship lessons by 2017.

3.10 Enabling frameworks and governance

Successful implementation of an e-Georgia strategy requires the setting up of proper organisational grounds including:

- Ensuring that the legal framework enables electronic interaction and service provision and that the digital transactions have the same legal quality as the traditional procedures.
- Establishing a proper interoperability framework, which ensures smooth interaction among the actors in e-Government and exploitation of the full potential of innovative ICTs.
- Agreeing and applying a common architecture framework and process alignment to ensure planning, design and implementation of ICT solutions is coordinated and follows similar principles, which enable sharing and reuse of artefacts across different actors of government.
- Agreeing on introducing and following up the good governance and Open Government principles in all government activities along the e-Georgia strategy
- Establishing a coordinating policy governance structure, which monitors and coordinates a successful implementation of the e-Georgia strategy and therewith coherent developments among the different government agencies
- Founding a wider community of e-Georgia strategy development and implementation, which involves key external actors from businesses, CSOs and other citizen interest groups to promote awareness of developments and engagement in successful e-Georgia developments also from the civic, non-profit and business sectors.

3.10.1 Legal framework

a. Introduction and scope

The legal framework is a prerequisite for e-Georgia and for electronic transactions between governments, governments and businesses, governments and citizens, as well as for private and civil sector e-Services. If a proper legal setup for public e-Services is not ensured, the success of e-Services provision is severely hampered, as stakeholders will not trust digital transactions with government agencies.

b. Current situation and initiatives

Taking into account the frequency of usage of information technologies within the public sector, it is necessary to provide coordination for consecutive and effective development of information systems. Prerequisite of successful coordination in its turn is having the correct information on those systems and services, which are increasingly offered to citizens and users by the state. For this purpose, several regulatory issues and standards have already been defined in Georgia thus enabling the current ICT driven development and modernisation. These regulatory frameworks include:

The law on "**Unified State Registry of Information**" has been adopted and entered into force on June 1st, 2011. The aim of the law is to create a catalogue of current data bases, registries, information systems and services that are

functioning within the State government bodies. The implementation of this law is the setup of a registry, which will completely reflect information-technological resources that exist within the public sector. Unified State Registry of information does not include and process information about the data bases, registries, information systems and services of entities under private law. Data Exchange Agency is responsible for the creation and functioning of such a registry of registries (RoR). More details on the operational aspect of the RoR are provided in section 3.7.2. Infrastructure – Backoffice e-Government services.

- The **law of Georgia on "Information Security"** has been developed and entered into force on July 1st, 2012. Rationale for this law was on the one hand the cyber-attack of August 2008 against Georgia. On the other hand, the increasing use of ICT by the State institutions and private sector put the issue of information system security high on the agenda. The regulatory basis to solve these issues is the Law of Georgia on "Information Security", which embarks on the concept of "critical information systems". It refers to and regulates State and private entities of critical information systems and nonstop functioning of systems of significant importance for the country's security. While defining these entities, following criteria are used: heaviness and scale of expected results if information system gets out of order, economic damage, service necessity, number of customers etc. Operationalisation of the law is described in section 3.8 e-Security.

c. Goals and action plans

Stakeholder benefits:
Georgia has established a comprehensive legal framework that enables full e-Services provision between the different actors in State (G2G, G2B, G2C), and that settles the grounds for the use of digital identification and digital signatures. This way, stakeholders can trust in electronic transactions and can reap the benefits of e-Services and its related developments.

The legal framework of Georgia is compatible with the EU and international regulatory frameworks, thus also facilitating international electronic transactions and making Georgia more attractive to international investors, banks and government institutions. Digital contracts have the same legal status and validity as paper-based contracts. This enables the public and the private sector to issue contracts and legally binding agreements and hence to reduce costs and be more effective.

The legal framework has become a key principle to ensure trust in electronic communication between government and actors of private and civic sectors. The regulations concerning e-ID give full validity to digital identification and digital signatures. ICT and innovation projects under the umbrella of the e-Georgia strategy synchronise the legal grounds with organisational and technical change, hence the benefits and take-up of these solutions is increased.

Actions and expected output:

Table 25: Action plan for Legal framework

No	Title	Description	Output	Time-line	Res-pon-sibility
1	Documentation (Big Picture of) existing legislation	DEA and other government organisations provide a general status quo analysis of the existing legislation (regulations, laws, norms).	Overview document of existing legislation (regulations, laws, norms) documents with indicators for horizontal or vertical orientation candidate.	2014	DEA and other government organisations
2	Norm screening – nat. regulations	DEA and other government organisations collaborate in screening norms and the regulatory base of Georgia to identify potential barriers and needs for updates and revisions to enable electronic transactions expressed in the vision of e-Georgia 2018.	List of laws and norms that need revisions. List of new norms to be introduced.	2014	DEA and other government organisations
3	Norm screening - internat. regulations	DEA and other government organisations collaborate in studying international and EU regulations, in evaluating compatibility of Georgian national regulations with these internat. regulations to ensure that these are compatible at EU and international scale.	List of laws and norms that need revisions to be compliant with international regulations	2014	DEA and other government organisations, GEO III
4	Revise and update regulations	Regulations are updated and revised to enable e-Services with fully digital transactions. Ministries prepare the respective procedural and material law updates and the respective authorities approve these updates to put them into force.	Revised regulations.	Based on 1 and 2: Step by step till 2017	Dedicated Ministries
5	Develop e-commerce enabling regulations	Develop e-commerce enabling regulations, therewith involving the main actors in e-Georgia.	Draft e-Commerce regulations.	2014	MoE, MoJ, DEA, MoF, etc.
6	Approve the e-Commerce regulations	Propose the e-Commerce regulations to the Parliament for approval and enforcement.	e-Commerce regulations in force.	2014	DEA together with relevant ministries
7	Align technical, organisational and legal compliance	Align organisational and technical change with legislation. To achieve this, a coordination action is put in place for any e-Georgia project that involves examination of the legal grounds and, if necessary, triggers revisions thereof. For every e-Georgia project, a report is developed along the project, which documents the aligning of organisational	For every e-Georgia project, a report exists, which documents enablement of organisational and technical	On-going task	relevant project actor

		and technical change with legislation. If needed, a revision of a regulation is triggered or a new law is developed to enable the project output is used without legal hindrances.	change by the legal grounds.		

d. Performance targets

- By 2014, 50% of regulations have been identified as properly enabling e-Georgia strategy and action plans to be implemented, and 10% of regulations needing revisions. 5% of regulations have been identified as having to be introduced as new regulations. By 2018, digital contracts and certificates have the same validity as paper-based contracts; 30% of contracts, certificates and agreements in the public and private sector are issued digitally.

3.10.2 Interoperability framework

a. Introduction and scope

Interoperability is a key principle to enable smooth interaction among governments at central and regional / local level, as well as with businesses and citizens thereby effectively exploiting ICT potentials in e-Services. A strong commonly agreed interoperability framework also enables the business sector to interconnect therewith facilitating international organisations to operate in Georgia. An interoperability framework has to ensure that principles of interaction are put in place at all levels of interoperability (see e.g. the European Interoperability Framework that covers four levels (legal, organisational, semantic and technical) embedded in a political context).[34] The interoperability framework has therefore to be seen as a crucial guiding frame for other priority themes such as basic infrastructure, security, e-Services provision, e-Participation and related topics in the organisational priority. Such a framework has to accommodate both, guidelines for how to agree and work together, and the development and use of standards as means to enable interoperability.

b. Current situation and initiatives

Data Exchange Agency defines data standards and principles of interoperability of information systems. Its aim is to reach the compatibility of information standards of Georgia with international standards.

As part of the Twinning project e-Government Georgia, component 2 addresses the development of an interoperability framework for e-Georgia.

c. Goals and action plans

Stakeholder benefits:
Georgia has established an interoperability framework that enables government agencies and businesses to interact on a system to system level when data is to be

[34] For information on the EIF 2.0 see http://ec.europa.eu/isa/documents/isa_annex_ii_eif_en.pdf

exchanged and when procedures of service execution have to be performed. This way, interaction among governments as well as with businesses and with citizens has become more effective, faster and can be executed at lower costs. Likewise, the service quality has improved leading to more business / citizen satisfaction and trust in government.

A set of standards for data exchange between government agencies as well as with businesses and citizens has helped to interconnect systems of the different actors and to perform procedures with governments more efficiently on both sides (saving time and costs, avoiding unnecessary tasks of repetitive data entries etc.).

The interoperability framework encompasses an evaluation procedure, which helps monitoring the implementation of e-Government in Georgia with a focus on ensuring interoperable solutions. Through this framework, collaboration among actors of government and with actors of the private and civic sector has become more effective when cross-organisational solutions are developed and implemented.

Actions and expected output:

Table 26: Action plan for Interoperability framework

No	Title	Description	Output	Time-line	Res-pon-sibility
1	Establish a working group that develops an interoperability framework	Identify the key actors to be involved in developing the interoperability (IOP) framework.	Working group on IOP established.	2014	DEA, GEO III
2	Scan existing examples of IOP frameworks	Study existing IOP frameworks and extract relevant contents for the Georgian IOP framework.	List of identified IOP frameworks and relevant contents	2014	DEA, GEO III
3	Define the Georgian IOP framework	Group of identified actors defines the IOP framework based on existing examples (activity 2) and in alignment with the needs of e-Georgia visions. This framework includes an evaluation procedure (to guide activity 5).	Georgian interoperability framework.	2014	DEA, GEO III, IOP working group
4	Define standard specifications as needed based on the IOP framework	The IOP working group with the lead / help of DEA develops standard specifications for particular data exchange and communication between e-government actors to ensure IOP – therewith following the IOP framework developed in action 3).	Standard specifications for data exchange and communication in dedicated domains.	2014 – 2018 (on-going)	DEA, IOP working group
5	Perform IOP evaluation procedure to ensure that e-Georgia systems are	To ensure that all projects and organisations implemented along e-Georgia strategy meet the expected standards and technical requirements to reach 100 % interconnection between agencies, an IOP evaluation procedure as specified in the IOP framework is triggered for every project. The IOP working group assesses interoperability	Evaluated project conforms to interoperability requirements.	2014 – 2018 (on-going)	IOP working group

	interoperable	and compliance to the IOP framework when a new e-government solution is introduced and thereby assesses whether the Interoperability framework is fully applied.			
6	Frequent reporting of implementation	IOP working group regularly (every six months) reports progress of IOP and status of application of IOP framework in e-Government projects to strategic coordination body.	Half-year progress report of the IOP working group.	2014 – 2018 (on-going)	IOP working group

d. Performance targets

- As of 2014, the Georgian interoperability framework exists and is applied to e-government projects in Georgia.
- By 2018, the Georgian interoperability framework is totally aligned with the EIF (the GIF being a subset of EIF)
- By 2018, 100 % interconnection among the agencies is enabled through the consistent application of the interoperability framework.

3.10.3 Enterprise Architecture frameworks and process alignment

a. Introduction and scope

To ensure interoperability, standards and high quality developments of solutions in achieving the visions of e-Georgia, a systematic and structured development process is recommended to be applied – following an Enterprise Architecture (EA) framework. EA frameworks[35] provide guidelines for how to successfully develop e-Government systems for different stakeholders. They also provide a grid for which aspects need to be systematically planned, conceptualised and implemented from the vision and overall business goals (strategic view) to the concrete system implementations. This includes technical, legal and organisational considerations alike. A crucial part of such EA frameworks is process management and the implementation of the business process management paradigm, i.e. aligning processes in government and with customers of public administration to the strategic goals. Frameworks such as TOGAF[36] or particular government EA frameworks (e.g. OIO in Denmark[37], EA in Australia[38], FEA[39] or DoDAF[40] in USA) help to design e-Government systems along key perspectives (processes and functions, organisational networks, roles and responsibilities, data and information, time and sequence of actions, motivation) and along an iterative cycle of architecture development method therewith agreeing on crucial architecture principles and providing a set of standard methods and instruments for systems analysis, design, implementation and evaluation. EA frameworks also

[35] See http://www.jisc.ac.uk/media/documents/techwatch/jisc_ea_pilot_study.pdf for an overview of EA frameworks
[36] See http://www.opengroup.org/togaf/
[37] see http://arkitekturguiden.digitaliser.dk/introduction-til-national-enterprise-architecture-denmark
[38] See http://agict.gov.au/policy-guides-procurement/australian-government-architecture-aga/aga-rm/1-wog-architecture-program
[39] See http://www.whitehouse.gov/omb/e-gov/fea
[40] See http://dodcio.defense.gov/dodaf20.aspx

provide an architecture repository for sharing architecture artefacts and strongly recommend re-use of specifications and solutions. This way, efforts are streamlined, and lessons and artefacts of EA are shared among the project teams and among different government agencies.

b. Current situation and initiatives

During the Twinning project e-Government Georgia, component 2 addresses the development of an interoperability framework for e-Georgia.

c. Goals and action plans

Stakeholder benefits:
The e-Georgia EA framework is applied in e-Government systems development and therewith ensures interoperability and quality standards as well as reuse of components and conceptual artefacts (i.e. models). Through the systematic application of the e-Georgia EA framework, conceptual models as well as specifications and developments are shared, and a body of knowledge is established that contributes to more effective and more successful e-Government implementations.

The EA framework supports in streamlining business processes for e-Services transactions along with the ICT developments. It provides a systematic change management process. Model artefacts and solutions stored in the EA repository are used by the teams developing e-Georgia solutions. Through the application of the EA framework, resources (costs, human resources, etc.) in systems development are reduced and key architecture principles such as interoperability, security, etc. are ensured. The EA framework is applied across different government agencies (central, regional, and local) and has helped to establish an effective culture of e-Government system development in cross-organisational settings. It also contributes to better reach the objectives of related thematic priorities such as e-Services (see section 3.1), infrastructure (see section 3.7), e-Security (see section 3.8), e-Business (see section 3.5) or e-Participation (see section 3.2).

Actions and expected output:

Table 27: Action plan for Enterprise Architecture frameworks and process alignment

No	Title	Description	Output	Time-line	Res-pon-sibility
1	Define an EA framework for e-Georgia	Study enterprise architecture frameworks (e.g. TOGAF) and define an appropriate EA framework derivate for e-Georgia. The EA framework for e-Georgia comprises: • a systematic and structured development method • a grid of which artefact concepts (models) are to be developed along an EA work (viewpoints and abstraction layers) • a set of EA principles • a set of methods, instruments and templates to analyse, develop and implement e-Georgia solutions	e-Georgia EA framework defined.	2014	DEA, GEO III, other key ministries developing e-Georgia systems

		• an EA repository development and use concept			
2	Publish and commit to the use of the EA framework	Publish the EA framework and make a strategic decision to commit to the application of the EA framework.	Commitment to systematically use e-Georgia EA framework in e-Government projects.	2014	DEA, responsible ministries
3	Train e-Government project teams in EA framework	Train e-Government project teams in the e-Georgia EA framework methods and instruments (see section 3.9.2 Skills).	e-Government project teams have competencies in EA developments.	2014 – 2018 (on-going)	DEA
4	Build up an EA repository	To reuse artefacts and EA solutions, an EA repository is built up, which is accessible and used by e-Government projects	EA repository exists.	2014	DEA
5	Diffuse and apply the EA framework	Ensure that the instruments and methods of the e-Georgia EA framework are known to the e-Government project teams and that the framework is applied, including reuse of existing models and components as well as sharing of models and components of a project in the EA repository (see section 3.11 Awareness).	e-Government project teams across the different government agencies (central and regional / local) know the EA framework and repository, and use the EA framework.	2014 – 2018 (on-going)	DEA, responsible ministries and e-Georgia system development teams

d. Performance targets

- By 2015, the e-Georgia EA framework is agreed and established.
- By 2018, a comprehensive repository exists that covers at least 30 % of EA artefacts developed in the various e-Georgia projects since 2014.
- By 2018, the culture of component reuse and application of the EA framework in systems development has become the standard practice.
- By 2018 the EA framework will be diffused and applied (see section 3.11 Awareness).

3.10.4 Principles of good governance and Open Government

a. Introduction and scope

Many governments in developing countries – but not only in this regard – cost too much, deliver too little, and are not sufficiently responsive or accountable. Good governance reforms aim to address these shortcomings. Yet progress – after many years of effort in implementing such reforms – has been much more limited than

expected. E-Governance offers a new way forward, helping improve government processes, connect citizens, and build interactions with and within civil society.[41]

The OECD argues good governance as the expression of expectations and basic principles of citizens of a state regarding the status of individual rights to property, personal inviolability, equality and redress under the law, participation in collective decision making, and duties and obligations. Good governance has become an essential factor for economic development and social stability, and has in particular also to be ensured in e-Government and e-Services developments. It requests an open and constructive policy dialogue with key partners of governments such as businesses, trade unions, civil society organisations (CSOs) and citizens. These actors need to contribute to achieving good governance, too. The valuable insights to be gained from open and constructive dialogues and the sharing of experiences need to be recognised accordingly.[42]

Principles of good governance not only require that the e-Georgia strategy is implemented, but that policy dialogues and public sector e-Service provision are:[43]

- consistent and coherent with policy formation;
- following the rule of law;
- with clear, transparent and applicable laws and regulations;
- accountable;
- transparent;
- open;
- participatory and consultative;
- effective and efficient;
- equitable and fair; and
- following high standards of ethical behaviour.

Open Government principles fall into a similar strand of governing principles, with the restriction of principles of accountability, transparency and openness. Ensuring these principles in government actions is key in improving democratic performance, and thereby increasing transparency and accountability, strengthening of civil society capacity and participation of citizens in public discourse and government decision making. Likewise, it offers a way for the public sector and governments to improve policy performance by working with citizens, CSOs, businesses and other stakeholders to deliver concrete improvements in policy outcomes and improve the quality of public e-Services.[44]

b. Current situation and initiatives

Georgia has initiated some activities to ensure the implementation of good governance and Open Government principles. For example:

[41] See p. 4 in Richard Heeks, Understanding e-Governance for Development, Institute for Development Policy and Management, University of Manchester, Paper No. 11, URL: http://unpan1.un.org/intradoc/groups/public/documents/NISPAcee/UNPAN015484.pdf
[42] See e.g. Promise and problems of e-Democracy. OECD study, 2003
[43] Ibid.
[44] See e.g. Open Government: Fostering Dialogue with Civil Society. OECD Study, 2003

- an open administrative act is in place;
- procedures for consultation in law-making are open for three months. Options for public discussion on draft laws are published on the web sites, and measures to enable citizen participation are put in place (see also section 3.2 e-Participation);
- an open public discussion regulation exists;
- each policy issue under discussion is presented by the respective agency on their web page; sometimes TV discussions exist.

c. Goals and action plans

Stakeholder benefits:
The implementation of good governance and Open Government principles within the e-Georgia strategy and action plan contribute to the increased transparency of government activities. Not only by increasing citizens and businesses understanding of the decision making process and the results, but by allowing input and feedback to public sector organisations regarding their concerns. Transparency contributes to higher trust of the customers of public administration in their government agencies, and a higher take-up of e-Services results from more (and better) services.

Good governance and Open Government have also led to citizens and companies participating in policy dialogues and in public consultations. The communication and awareness measures on open discussions of policy issues has contributed to establish more trust in governments and in more citizen engagement on policy issues of government and politics. Overall, the cooperation across public and private sector and vice versa is improved, as good governance and Open Government principles have positively contributed to a smarter environment for cooperation. The unique (one-stop) participation platform is accessible through different channels and ensures that everybody can participate in policy dialogues and in public consultations. It is important to ensure communication and awareness of such open discussions on policy issue and to provide an open platform with unique access.

Actions and expected output:

Table 28: Action plan for Principles of good governance and Open Government

No	Title	Description	Output	Time-line	Res-pon-sibility
1	Ensure the implementation of good governance principles	The implementation of good governance and Open Government of e-Georgia strategy needs to be reflected in enterprise architecture principles as well as in a culture of open collaboration and proactive information sharing among key actors (stakeholders) (see section 3.2 e-Participation and Open Government).	Good governance and Open Government principles are part of each e-Government project – reflected in EA principles.	2014 - on-going	responsible ministries and e-Georgia system development teams

2	Evaluate existing projects against fulfilment of good governance principles	Existing and planned projects need to be evaluated in regards to ensuring good governance principles are being followed. If needed, interventions may be carried out to ensure good governance principles are followed.	Evaluation report documenting that e-Georgia project contributes to Open Government and good governance.	2014 - on-going	Independent team
3	Integrate public policy discourses into one unique platform accessible through multiple channels	Develop and agree on an one-stop platform that will in future provide all open policy discourses among government/ politics and the citizens. Therewith, it is to be ensured that everybody can participate in policy dialogues and in public consultations. Hence, the one-stop participation platform is accessible through different channels (Internet, mobile, public (including physical, kiosks) access points, etc.) (see section 3.2 e-Participation and Open Government).	Open government platform with multiple channels and as widely accessible means.	2015	DEA, relevant ministries, parliament
4	Establish routine mechanisms of awareness raising on open policy discourses	Mechanisms of informing citizens and key stakeholders on open policy discourses need to be defined and introduced. The key actors have to agree on which channels will be used to ensure most effective outreach to citizens.	Communication means to frequently inform about current policy deliberations are agreed and in place.	2015	DEA, relevant ministries, parliament
5	Perform a user survey to evaluate good governance and Open Government	To evaluate Open Government and good governance principles are implemented successfully, Georgian's parliament and government agencies perform a regular user survey among platform users. Hypothesis for 2016 would be that the user satisfaction on transparency, openness, participation and trust in government is moderate (using a five-point Likert scale). Hypothesis for 2018 would be that a good satisfaction is reached.	User survey performed.	2016, 2018, every second year	DEA, relevant ministries, parliament

d. Performance targets

- By 2018, the user satisfaction (among citizens and businesses) in regards to transparency, openness, participation and trust in government has increased from moderate to good (using a five-point Likert scale).
- By 2016, the Open Government platform is accessible through different channels (Internet, mobile, public (including physical, kiosks) access points), which enables public policy discourses by citizens.

3.10.5 Coordinating policy governance structure

a. Introduction and scope

Ensuring the effective and efficient implementation of the e-Georgia strategy and action plan, and continued planning and discussion of the future directions of a Digital

Georgia require cooperation and the establishment of a common coordination structure and instrument. Such an instrument demands involvement of key actors and their commitment to the implementation of high-level and target-oriented policy issues and initiatives. Investigating e-Government developments in Europe and elsewhere show that success require a strong, committed and powerful coordination body, a coordination body placed under the auspice of a key government organisation and including the key actors from national, regional and local government. Such a coordination body must take proactive leadership, in planning and in reaching agreement on strategic directions of developments. Similarly, the coordinating body must take ownership and overall responsibility of implementing the strategic objectives of the e-Georgia strategy and action plan. In turn, the coordination body must be given the necessary power to enforce agreed goals, principles or implementations towards e-Georgia. This includes the commitment of individual key players represented in the coordination body, and their commitment to ensure human and financial resources are allocated and made available for realising particular projects.

b. Current situation and initiatives

Currently, an e-Government Commission exists, where ministerial CIOs, the Prime Minister, Deputy Ministers of Justice are members. While the e-Government Commission can form the basis for a cross-governmental e-Government coordination body, it is not clear whether and how this body will continue. Similarly the Commission will need to be reconstituted, reorganised, and it must be ensured to include key stakeholders as members and their commitment. Similarly, the Commission must be given the relevant mandates and the necessary powers for deciding ICT developments and investments as well as for measuring and monitoring progress of such investments towards the achievement of the e-Georgia strategy and action plan. DEA currently functions as the Commissions secretariat and carry out relevant administration tasks. Similarly DEA is by law empowered to coordinate e-Government issues and development within Georgia – thus DEA may continue as operative body to support the implementation of the strategic goals and to support the coordination body in preparing regular meetings and decisions, etc.

In addition to the e-Government Commission a CSO forum is established and shall continue under the coordination of the Analytical Department of the Ministry of Justice of Georgia to involve expertise from private and civil sectors

c. Goals and action plans

Stakeholder benefits:
It is important to involve different bodies in the coordination of the e-Georgia strategy implementation and monitoring, while the implementation of projects resides with the responsibility of individual agencies. Furthermore, adoption of legal frameworks must be ensured.

Planning and approving of e-Georgia strategy and action plan, coordinated by DEA, on regular basis will be a key success factor. The coordination body is equipped with respective power to enforce implementation of e-Georgia strategic projects.

Actions and expected output:

Table 29: Action plan for Coordinating policy governance structure

No	Title	Description	Output	Time-line	Res-pon-sibility
1	Reinforce / establish a coordination body	To ensure effective and successful implementation of the e-Georgia strategy (and other related strategies) and to update and revisit it at a regular basis, a coordination policy governance structure is key. Either the current e-Government Commission is reinforced to make policy decisions for implementation (including allocating sufficient resources, appointing responsible agencies of implementing particular projects, and monitoring the progress of achieving the e-Georgia vision through the set of projects) or such a body is established newly. In establishing / reinforcing such a coordination body, it is to be ensured that all relevant government agencies with a stake on ICT-related developments (i.e. have to take responsibility in implementations or are affected by such developments) are represented in the coordination body. To enable civic and private sector engagement, representatives of such actors should also have a place in such a structure. Examples of such governance structures are e.g. Digital Austria and BLSG of Austria (see also activities 2-5).	Governance structure.	2014	Responsible Ministry/ies / Prime Minister
2	Compliment the coordination body with an operative implementation support unit	Besides the political coordination (see activity 1), operative coordination has to be in place for successful strategy implementation. DEA has already been established for such purposes. Ensure that the operative implementation and support unit is sufficiently staffed (skills, financial resources) and align the coordination body with the support unit tasks and responsibilities (see also activities 1 and 3-5).	Operative Support Unit.	Ongoing	Coordination body / Ministries
3	Ownership of e-Georgia strategy	Ensure that the coordination body takes ownership of the e-Georgia strategy (and other related strategies) and its implementations, and that it takes responsibility for frequently revisiting and updating the e-Georgia strategy (with updating the vision and thematic priorities). The operative support unit (DEA) facilitates the preparations and consolidation of the updated strategy. It also consults CSOs and private sector representatives in the strategy developments (see also activities 1-2 and 4-5).	e-Georgia Strategy is updated.	Every 2-3 years	Coordination body, DEA
4	Ensure financing for the	The coordination governance body and the relevant ministries have to ensure that there is sufficient financing for the implementation	Annual State budget includes funding for e-	Every year,	Coordination body,

	projects under the e-Georgia strategy	of the e-Georgia strategy. Hence, for the annual budgeting, proper financial planning and requests in the annual budgeting process have to be made well ahead of time per year (see also activities 1-3 and 5).	Georgia strategy implementation	for 2014 foresee amendment of the current budget law 2014	Ministry of Finance, Line Ministries
5	Introduce a project monitoring and benchmarking instrument	The operative unit (DEA) introduces an effective benchmarking and monitoring tool for measuring the successful implementation of the e-Georgia strategy and its related projects (see also activities 1-4 and section 0).	Monitoring and benchmarking tool.	2014	DEA

d. Performance targets

- The coordination body has ensured the implementation of the e-Georgia strategy (evidence of successful implementation of e-Georgia strategy provided through proper monitoring and measurement tool) by 2014.
- The coordination body has ensured investment in e-Georgia strategy implementations – both from public as well as from private actors. I.e. all relevant high priority projects are financed sufficiently in the period 2014-2018.
- An effective benchmarking and monitoring tool is implemented and rolled out by 2014.
- All relevant ministries and LEPLs (Legal Entity of Public Law) participate and use (i.e. report their projects in) the benchmarking and monitoring tool by 2014.
- All projects under the e-Georgia strategy are assessed and measured by the benchmarking and monitoring tool as of 2014 on a regular basis (regarding budget, timeline, performance targets, etc.).

3.10.6 Facilitation of community building

a. Introduction and scope

An innovative Georgia benefits from joint engagement and contributions of different sectors (i.e. public, private, civic sector actors) to a common goal as manifested in the vision and mission statement of the e-Georgia strategy. In achieving common goals, the collaboration among public and the other sectors is key in this regards. Government can leverage innovation in the public e-Services and infrastructure provision through engaging the crowds of private and civic sector actors. To leverage real benefit from such initiatives, community building is an important instrument to be facilitated. Communities on particular thematic areas can help in various directions: building up and providing skilled expertise, providing access to expertise, providing services of

various kinds, contributing to future directions of development, providing a reasonably sized set of actors in procurement or outsourcing or joint project endeavours, etc. Communities live from meeting each other, staying tuned, knowing who's-who, knowing who to contact etc. Accordingly, measures are recommended to support and facilitate community building along thematic priorities of the e-Georgia strategy.

b. Current situation and initiatives

A forum of CSOs is established under the coordination of the Analytical Department of the Ministry of Justice of Georgia to involve expertise from private and civil sectors.

c. Goals and action plans

Stakeholder benefits:
Promoting participation and increasing the role of coordinating CSOs facilitates community building. This leads to the empowerment of citizens, businesses and the civic sector to actively engage in shaping an innovative Georgia. Communities play an important role in raising awareness on available solutions. They can also play an important role in promoting outsourcing, which in turn strengthens the private sector by enabling start-ups to offer innovative services.
Communities can further be active actors for implementing particular goals of sub-topics as outlined in this strategy (e.g. on Business registers, ICT professionals network, freelancer platform etc.)

Actions and expected outputs:

Table 30: Action plan for Facilitation of community building

No	Title	Description	Output	Time-line	Res-pon-sibility
1	Establish / maintain communities of relevant thematic areas	To successfully leverage community contributions, efforts need to be taken to establish and maintain relevant communities on particular thematic areas.	Existing communities on particular themes.	Ongoing	CSOs, ICT sector representatives, Government agencies (Coordination body / DEA / others)
2	Run frequent community meetings	To ensure an active community, people need to meet on a regular basis, e.g. once a year at a conference, a few working meetings or seminars over the year on fostering the exchange on particular topics.	One annual conference, a few working meetings.	2014 - 2018	CSOs, private sector
3	Build up yellow pages of relevant community knowledge	Besides regular meetings, online presence and access to information are important instruments for community building. Such access needs to actively be set up.	Active knowledge portals of community (ies).	2014 - 2018	CSOs, private sector

	and information				
4	Engage the communities in relevant tasks such as monitoring of e-Services, vision and strategy development etc.	Foster and support public-private partnerships and community engagement on relevant dedicated tasks such as a customer protection service that monitors e-Services transactions on transparency, trustworthiness or misuse and fraud.	Contributions from community to e-Georgia strategy.	2014 - 2018	CSOs, private sector, DEA

d. Performance targets

- By 2016, communities exist in dedicated areas of the e-Georgia strategy which have contributed with their services of knowledge base and monitoring of the public performance and transparency as well as of fraud and corruption cases.
- During the period 2014-2018, community meetings have contributed to the improvement of better governance and more transparency. They also contributed with ideas and inputs to revised e-Georgia vision and mission statements.
- One conference per year and at least two community building events organised per year have helped to provide better information and awareness of what is going on and where the community can engage by 2018.
- During the period 2014-2018, the knowledge portal of the existing communities has contributed to more effective networking and identification of available skills and resources needed for the implementation of e-Georgia strategic priorities.

3.11 Awareness

To capitalise on the potential of ICT and to optimise the efficiency and effectiveness gains of investments, Georgia must ensure the use (i.e. demand and take-up) of available e-Services (i.e. supply).

This section focuses on activities stimulating the demand and take-up of digital G2C, G2B, G2NGO and G2G services as well as key enablers like e-IDs – that is reaping the benefits of e-Services. Awareness is thus underpinning an effective Georgian public service channel strategy with the aim to move interaction from the analogue realm of physical, telephone and written service requests to the digital world. These efforts are supported by user-friendly, accessible and personal e-Services design (see section 3.1 and section 3.2).

a. Introduction and scope

The awareness of citizens and businesses of public sector e-Services and the benefits they provide is essential to the success of any strategy focusing on ICT. Awareness is an essential underpinning of the successful capitalisation of the e-Georgia and ICT potential. Without the actual take-up and successful use of e-Services by citizens, businesses and other users (such as civil organisations), any return on government investment in infrastructure and back-end systems, let alone on the design and development of the e-Services themselves, will not materialise. Without awareness leading to successful use, potential benefits to users and to wider society of convenience, time savings, money savings, etc., will also be lost. Awareness is thus a requirement if public authorities are to optimise the efficiency and effectiveness gains of ICT investments.

Essentially, an awareness raising strategy is required in relation to a number of elements in the e-Georgia Strategy, including e-Services take-up and increased use of digital services, e-Participation and Open Government initiatives, digital literacy and access to government services under Skills and e-Inclusion and so forth. It collects a number of specific action plan initiatives from previous sections and compliments these with a number of horizontal and joint-government initiatives. The focus will not be on G2G e-Services and back-office initiatives.

The focus of awareness raising will be on increasing citizens and businesses knowledge of and desire to use government e-Services, including the benefits of these e-Services compared to analogue service channels (i.e. in writing, in person and by telephone service requests) – and ultimately the increased take-up of e-Services. That said, fundamental changes are currently taking place in public sector communication. Government institutions at all levels need to respond to the societal shifts and learn navigate multiple communication and service delivery channels. This means:

- Define goals to ensure efficient and effective communication.
- Define multi-channel communication strategies (incl. print, media, web) – and be on message across organisations and communication channels.
- Coordinate, corporate and have a key message across organisations and communication channels.

- Explore new ways to serve and engage citizens and business
- Use internal communication to turn strategy to action.
- Enhance the image of the public sector to secure a workforce for the future.

Figure 1: Citizens behaviour and to public e-Service use incentives to increase e-Service take-up[45]

	Do use e-Services	Don't use e-Services
Are online	c. 5% of population Tools to increase take-up: - awareness campaigns - active channel strategy (i.e. close paper-channel, floor-walkers) - increased incentives (e.g. cost and time saving) - mandatory use (e.g. high-impact, high-volume services) - user-friendly and accessible e-Services	c. 35% of population Tools to increase take-up: - awareness campaigns - active channel strategy (i.e. close paper-channel, floor-walkers) - increased incentives (e.g. cost and time saving) - mandatory use (e.g. high-impact, high-volume services) - user-friendly and accessible e-Services
Want to be online	c. 15% of population Tools to increase take-up: - awareness campaigns - active channel strategy (i.e. close paper-channel, floor-walkers) - increased incentives (e.g. cost and time saving) - user-friendly and accessible e-Services - access (e.g. broadband access and incentives, access via intermediaries) - training and demo-material, courses (e.g. floor-walkers, at Public Service Halls, Community Centres, libraries for digital and e-Service skills)	c. 60% of population Tools to increase take-up: - awareness campaigns - active channel strategy (i.e. close paper-channel, floor-walkers) - increased incentives (e.g. cost and time saving) - user-friendly and accessible e-Services - access (e.g. broadband access and incentives, access via intermediaries) - training and demo-material, courses (e.g. floor-walkers, at Public Service Halls, Community Centres, libraries for digital and e-Service skills)

Figure 2: Business behaviour and to public e-Service use incentives to increase e-Service take-up[46]

	Do use e-Services	Don't use e-Services
Are online	c. 90% of businesses Tools to increase take-up: - awareness campaigns - active channel strategy (i.e. close paper-channel, floor-walkers) - increased incentives (e.g. cost and time saving e-Business tool and service packages) - mandatory use (e.g. high-impact, high-volume services) - user-friendly and accessible e-Services	c. 10% of businesses Tools to increase take-up: - awareness campaigns - trust (technical, data and privacy) - active channel strategy (i.e. close paper-channel, floor-walkers) - increased incentives (e.g. cost and time saving, e-Business tool and service packages) - mandatory use (e.g. high-impact, high-volume services) - user-friendly and accessible e-Services

[45] Figures indicated are estimates provided by workshop participants, as there are no real statistics available at the moment.
[46] Ibid.

Want to/Should be online (or use intermediaries)	c. 5% of businesses Tools to increase take-up: - awareness campaigns - active channel strategy (i.e. close paper-channel, floor-walkers) - increased incentives (e.g. cost and time saving, e-Business tool and service packages) - user-friendly and accessible e-Services - access (e.g. broadband access and incentives, access via intermediaries) - training and demo-material, courses (e.g. floor-walkers, at Public Service Halls, Community Centres, libraries for digital and e-Service skills)	N/A Tools to increase take-up: - awareness campaigns - trust (i.e. technical, data and privacy) - active channel strategy (i.e. close paper-channel, floor-walkers) - increased incentives (e.g. cost and time saving) - user-friendly and accessible e-Services - access (e.g. broadband access and incentives, access via intermediaries) - training and demo-material, courses (e.g. floor-walkers, at Public Service Halls, Community Centres, libraries for digital and e-Service skills)

Working with stakeholders from across Georgian society (such as government, businesses, citizens and non-governmental and interest organisations), the e-Service pillar of the e-Government strategy therefore focuses on the supply, demand, awareness and actual take-up of online services. This included planting the seeds of sophisticated e-Services delivery, while simultaneously reaping the benefits.

In the awareness raising strategy, priority will be given to high-impact e-Services and their availability via the my.gov.ge portal. In addition, however, focus will also be on the increased availability of e-Services across the country through self-service kiosks at Public Service Halls, Community Centres and libraries, as well as via commercial channels such as Payment Kiosks.

Priority will be given to (see figure 1 and 2 above):

- Promoting the increased use of e-IDs to ensure more citizens and businesses use e-Services requiring secure log-in.
- Promoting the increased use of high-impact and high-volume services with the aim of increasing take-up.
- Supporting an effective public service channel strategy with the aim to move service request from the analogue realm of physical, telephone and written service requests to the digital world, thereby saving the public sector, as well as taxpayer, considerable resources.
- Encourage increased registration in government digital literacy courses with the aim of increasing IT-skills and competences (incl. e-Service skills) in the wider population as well as increase the trust in technology and public sector solution online (i.e. technical, data and privacy trust).

b. Current situation and initiatives

No exact statistics exist on the number of Georgians and businesses having access to the Internet. Similarly there is a lack of precise data on the online behaviour of citizens and businesses. It is nonetheless estimated that 40% of the population have access to the Internet, and 30% - or about one million people - use Web 2.0 and social platforms. Similar estimates indicate that 5% of population use online banking, while the use of government e-Services is estimated to be lower (see figure 1 in section a above).

For businesses the situation is somewhat different as a number of e-Services are mandatory and thus require that businesses make use of the Internet. Despite this, the

use of non-mandatory e-Services remains low. It is estimated that 90% of businesses have Internet access and use e-Services (see figure 2 in section a above).

The pattern of low take-up of e-Services in Georgia is three-fold:

- Large areas of the country either have none or low Internet access, coupled with often relatively high connectivity costs.
- e-Services lack user-friendliness, are overtly complex or have some technical challenges. There is a lack of trust in ICT, data storage, access to personalised data, etc.
- Citizens and enterprises are in many cases neither aware of the service government offers online nor the benefits of e-Service use. Similarly they do not have an incentive to use existing e-Services.

c. Goals and action plans

Stakeholder benefits:
Increased user e-Service take-up provides a business case return to government on the investment it has made in the ICT infrastructure and in designing and rolling-out e-Services. It also generates cost savings to government (and therefore to the tax-payer) as it moves citizens and businesses from more expensive physical service channels to much cheaper digital, and typically self-service channels. Users in turn benefit from digital services through 24/7 access, greater convenience and simplicity, as well as time and cost savings. Last but not least it also increases user involvement and trust in government.

This section collects a number of specific action plan initiatives from previous sections and complements these with a number of horizontal and joint-government initiatives.

Actions and expected outputs:
Actions from specific thematic sections.

Table 31: Action plan for thematic Awareness initiatives

No	Title	Description	Output	Time-line	Res-pon-sibility
1	Feasibility study on better digital communication	See initiative 3, Table 1: Action plan for e-Services for citizens (G2C), section 3.1.1.			
2	User awareness and incentives on feedback	See initiative 3, Table 4: Action plan for Feedback on e-Services, section 3.2.1.			
3	Public servants awareness and incentives Social media strategy	See initiative 4, Table 4: Action plan for Feedback on e-Services, section 3.2.1.			

4	Social media strategy	See initiative 5, Table 4: Action plan for Feedback on e-Services, section 3.2.1.
5	User awareness and incentives on transparency and freedom of information (FoI)	See initiative 2, Table 6: Action plan for Transparency and Open Government, section 3.2.3.
6	User awareness and incentives on e-Participation	See initiative 3, Table 8: Action plan for Public Finance Management System, section 3.4.
7	Multi-channel strategy	See initiative 4, Table 16: Action plan for Infrastructure – Broadband access, section 3.7.1.
8	Awareness rising especially for non-governmental organisations (but also government)	See initiative 5, Table 16: Action plan for Infrastructure – Broadband access, section 3.7.1.
9	Awareness rising (also for non-Governmental organisations)	See initiative 1, Table 17: Action plan for Infrastructure – Backoffice e-Government services, section 3.7.2.
10	Awareness rising (especially within governmental organisations) – e-ID	See initiative 1, Table 18: Action plan for Infrastructure – Authentication, section 3.7.3.
11	Awareness raising (especially within business organisations) – e-Stamp development	See initiative 1, Table 18: Action plan for Infrastructure – Authentication, section 3.7.3.
12	Awareness raising for central	See initiative 2, Table 19: Action plan for Infrastructure – One-stop portal my.gov.ge, section 3.7.4.

	access strategy – portal solutions				
13	Launching information campaign, advertising in several media – education	See initiative 5, Table 21: Action plan for Information and cyber security, section 3.8.2.			
14	Raising awareness via Internet and social media	See initiative 2, Table 23: Action plan for Skills, section 3.9.2.			
15	Raising awareness through campaigns for those not yet online	See initiative 2, Table 23: Action plan for Skills, section 3.9.2.			
16	Diffuse and apply the EA framework	See initiative 5, Table 27: Action plan for Enterprise Architecture frameworks and process alignment, section 3.10.3.			
17	GITI – e-Government and CIO Congress	Annual GITI – e-Government and CIO Congress bringing together key stakeholders and decision-makers from civil society, the private and public sector (including Action 19 Awards) (see 3.10.5 Coordinating policy governance structure).	Annual conference.	2014 - 2018	ICT Business Council, DEA
18	SME IT Day	Annual IT and technology day for SMEs promoting the increased use of IT and technology. Includes the promotion of public sector G2B / B2G services and relevant standards. Annual SME IT Day also launch an annual "roadshow" focusing on stills and knowledge transfer on the same topic(s) (see 3.1.2 e-Services for business (G2B and B2G) and civil society organisations (G2NGO) and 3.6 ICT-Hub Georgia).	Annual event.	2014 - 2018	DEA
19	e-Georgia ICT Awards	Annual Awards for the best ICT project. Focus on the thematic priorities of the e-Georgia Strategy, e.g. G2C, G2B and G2G e-Services, user-centricity, efficient and effective service delivery and innovation. Entries evaluated based on qualitative and quantitative criteria. Evaluation by a mix of national, regional and international experts from civil society, academic, private and public sector (see Action 17 GITI).	Awards ceremony.	2014 - 2018	ICT Business Council, DEA

Actions of a horizontal and joint-governmental nature.

Table 32: Action plan for horizontal Awareness initiatives

No	Title	Description	Output	Time-line	Res-pon-sibility
1	National channel strategy for high-impact services	National channel strategy for the rollout of high-impact e-Services (e.g. no life event services and those available in the Community Centres). Focus on incentive-models and primary service delivery channels. Strategy developed in 2014 and adapted at regular intervals. The national channel strategy is implemented in 2014-2018 and underpinned by a national awareness and marketing campaign (see initiative 2) and relevant e-Service teaching and demo-material (see initiative 3).	Launch of national channel strategy.	2014 2015 - 2018	DEA
2	National awareness and marketing campaigns	National awareness and marketing campaigns underpins the national channel strategy for high-impact services (see initiative 1) and reference to relevant e-Service teaching and demo-material (see initiative 3). Focus should be a joint-national campaign of the benefit of, and access to, e-Services. Material should be used on digital and analogue channels specifically targeting the target groups for relevant high-volume and high-impact services. Campaigns should be run at specific “peak-seasons” for the specific services (e.g. for online tax declarations just before deadlines). Based on experiences, the national awareness and marketing campaign strategy and action plan assessed and adjusted annually in the period 2015-2018.	Launch national action plan for campaign strategies. Annual assessment and adjustments, 2014-2018.	2014 2015 - 2018	DEA
3	e-Service teaching and demo-material	Development of teaching material of high-volume, high-impact services including use of my.gov.ge, e-ID/digital signature and high-impact services. Material should focus on citizens, businesses, train-the-trainer material for front-end staff at local and regional authorities, libraries, stakeholder organisations (e.g. for the senior-citizens, secondary and tertiary students) etc. Material must be updated regularly to ensure same-look-and-feel plus functionality as of real life e-Services. Teaching of frontline staff and trainers must be included. The material underpins the national channel strategy (see initiative 1) and marketing campaign (see initiative 2).	Development and launch of teaching and demo-material. Training of relevant call centre and front-office staff at Public Service Halls, Community Centres and libraries	2014 2015 - 2018	DEA

d. Performance targets

The performance targets for reaping the benefits of e-Services are (i.e. demand and take-up):[47]

- Annual GITI – e-Government and CIO Congress organised for the period 2014-2018.
- Annual SME IT Day organised for the period 2014-2018.
- Annual e-Georgia ICT Awards organised and awarded at GITI – e-Government and CIO Congress for the period 2014-2018.
- National channel strategy for high-impact services developed (underpins e-Service take-up targets) in 2014.
- National awareness and marketing campaign strategy and action plan for 2015-2018 developed in 2014.
- Based on experiences, the national awareness and marketing campaign strategy and action plan assessed and adjusted annually in the period 2015-2018.
- National awareness and marketing campaigns launched 2015-2018 as based on developed strategy and action plan (underpins e-Service take-up targets) in 2014.
- e-Service teaching material and demo-material developed (underpins e-Service take-up targets) in 2015.
- 50 call centre and front-office service staff at Public Service Halls, Community Centres and libraries has received training annually 2015-2018 to use the e-Service teaching and demo-material.
- 20% of Individuals using the Internet, which interact with public authorities (tin00079) in 2016, increasing to 40% in 2018 (definition provided by Eurostat)
- 15% of individuals using the Internet for interaction with public authorities, by type of interaction (tin00013), sending filled forms in 2016, increasing to 30% in 2018 (definition provided by Eurostat).
- 15% e-Government usage by individuals (tsdgo330) in 2016, increasing to 30% in 2018. (definition provided by Eurostat).
- 50% of individuals have used e-Government services for at least one of the 19 defined life events in 2016, increasing to 60% in 2018.
- 90% of statistical data from companies are reported online to government in 2018.
- 90% of enterprises using the Internet for interaction with public authorities (tin00107) in 2018 (definition provided by Eurostat).

[47] Note that the following e-Service performance targets are not only relevant for awareness and communication activities, but reflect the overall achievements of the e-Georgia strategy.

4. Benchmarking and measurement approach

4.1 Purpose and rationale

The purpose of the benchmarking and measurement system is to provide a mechanism for evaluating and steering the implementation of the e-Georgia strategy and action plan.

The general principles of such a mechanism, common to international best practice, are that the overall measurement system should be:

a) Feasible, i.e. doable in terms of cost, organisational capability and political/managerial acceptance.
b) Operational, i.e. data/information for the indicators can be captured and analysed using scientifically acceptable and accessible methods and tools.
c) Comparable, as far as possible, with existing and on-going European indicators and measurement systems (these are outlined in section 4.2).
d) Aligned, as far as possible, with indicators and mechanisms already used in Georgia to avoid duplication and wasted effort (these are outlined in section 4.3).

In the earlier part of this strategy, each of the eleven thematic priorities has specified a number of stakeholder benefits which their implementation is designed to achieve. These stakeholder benefits require a series of actions to be taken by Georgian entities if they are to be delivered. Each action, in turn, is described in a table which shows the outputs they should produce, the timeline expected and which entity has responsibility. Finally, the outputs of these actions are articulated in a number of performance targets.

The performance targets for each thematic priority show where relevant:

- The indicators required to benchmark whether or not the target has been achieved.
- The score(s) of each indicator which are necessary to meet the target.
- The date by which the score should be achieved.

4.2 Relevant EU approaches and indicators

The EU currently has three measurement and indicator systems relevant for the e-Georgia strategy and action plan. Where performance targets in each of the thematic priorities correspond to existing European indicators, this is shown in the section in question in the earlier part of the report. It is recommended that, where feasible, the e-Georgia strategy and action plan adopt the same indicator definitions and methodologies in order to align as closely as possible with relevant European policy and implementation frameworks

4.2.1 Eurostat Information Society statistics

The most important EU measurement system for the e-Georgia strategy and action Plan is the set of Eurostat Information Society statistics[48]. This is normally updated annually by Member States' National Statistical Offices based on a common methodology and set of indicators. The main types of Information Society indicators are:

- Policy indicators
    - Benchmarking digital Europe: Key performance indicators
    - Benchmarking digital Europe: 2011-2015 indicators (linked to the Digital Agenda Europe policy, see section 4.2.2)
    - Benchmarking indicator: Public services - e-Government
- Telecommunication services
- Computers and the Internet in households and enterprises
- e-Commerce by individuals and enterprises
- e-Skills of individuals and ICT competence in enterprises
- Regional Information society statistics

The full list of relevant indicators is provided in Annex 1, and the Eurostat website provides their precise definitions and the methods used to collect data on them. Also shown are the data values collected across most EU Member States, as well as other participating countries, on an annual basis, many going back to the early 2000s. Some of the data values are also broken down by a number of characteristics. To give just two examples: for individuals this sometimes includes demographics, age, occupation, education, income and location; whilst for enterprises this sometimes includes enterprise size and sector.

In total, it is suggested that seven indicators are taken from the European e-Government benchmark (see section 4.4).

4.2.2 European e-Government benchmarks

The European e-Government benchmarks have been collected and published by DG CONNECT since 2001 using external consultants. These benchmarks are normally updated annually, although there are some gaps for example between 2010 and 2012. The approach and indicators used between 2001 and 2010 were predominantly supply

[48] http://epp.eurostat.ec.europa.eu/portal/page/portal/information_society/data/main_tables

side measures of e-Government availability and e-Government service sophistication. Because most countries by 2010 were moving close to one hundred per cent of the possible scores on these indicators, the basic methodology and indicators were changed for the 2012 measurement and will probably also be used in subsequent years.[49]

The current 2012 approach consists of two types of indicator:

- User survey using a statistically valid sample of Internet users across Europe which records respondent profiles, their use of and satisfaction with e-Government services, as well as the perceived benefits of and barriers to e-Government services.
- 'Mystery shopping' survey by experts trained and briefed to observe, experience and measure a public service process by acting as a prospective user. The 'mystery shoppers' examined in detail three 'life events', each of which consists of a package of government services which are usually provided by multiple government agencies around a subject that makes sense to the citizen or business. The three 'life events' measured in 2012 were e-Services for entrepreneurs starting up a business, e-Services for the unemployed and job seekers, and e-Services for students and their studies. It is planned that three different 'life events' will be measured in 2013 from a list currently consisting of nineteen 'life events'. In principle a different set of 'life events' will be the subject of measurements in subsequent years. (See Annex 2 for the list of European 'life events').

In total, it is suggested that 21 indicators are taken from Eurostat (see section 4.4).

4.2.3 Digital Agenda Europe (DAE) scoreboard

Third, the Digital Agenda Europe (DAE) publishes a scoreboard and dashboard showing progress on the DAE's pillars and actions[50]. Most of the data used by the DAE are derived from Eurostat statistics (see section 4.2.1), but in the few cases where these are not available to measure progress, the DAE has developed new indicators for which it also collects data.

In total, it is suggested that three indicators are taken from the DAE (see section **Error! Reference source not found.**).

4.2.4 Collection of information indicators

In the eGeorgia strategy, a variety of measurable indicators are introduced in the sections of the thematic priorities in order to get a clear picture of progress as the strategy is implemented. Some of these indicators, especially those based on definitions provided at a European level, are not yet available for Georgia. Therefore the strategy proposes an action to collect these data. The goals are two-fold:

[49] The European e-Government benchmarking surveys are available from: http://ec.europa.eu/digital-agenda/en/ict-enabled-benefits-eu-society-analysis-and-data

[50] http://ec.europa.eu/digital-agenda/en/scoreboard; http://daeimplementation.eu/dashboard2.php.

- To ensure the collection of relevant indicators to monitor and assess Georgian progress in ICT and e-Government;
- To enrich existing data and align these with European statistical and benchmarking indicators, specifically Eurostat, European e-Government benchmarks[51] and the DAE.

No	Title	Description	Output	Time-line	Res-pon-sibility
1	Georgian alignment to European statistics and benchmarking data	Assess the feasibility of introducing the Eurostat, European e-Government benchmarks[52] and DAE indicators in the annual statistics of GeoStat. Based on the potential positive assessment, relevant data will be collected and published by Geostat.	Recommendations on future data collection. Annual collection and publication of data on Geostat.	2014 2015-2018	Geostat, DEA

The strategy recommends collecting all the relevant indicators of the information society published by Eurostat. Especially the following indicators are of importance for the strategy as they are used as indicators in the thematic priorities described above:

- 40% of Individuals using the Internet, which interact with public authorities (tin00079) in 2018 (definition provided by Eurostat).
- 30% e-Government usage by individuals (tsdgo330) in 2018 (definition provided by Eurostat).
- 15% of individuals using the Internet for interaction with public authorities, by type of interaction (tin00013), sending filled forms (definition provided by Eurostat).
- 90 % of enterprises using the Internet for interaction with public authorities (tin00107) in 2018 (definition provided by Eurostat).
- 40% of Individuals using the Internet, which interact with public authorities (tin00079) in 2018 (definition provided by Eurostat).
- 30% of enterprises using automated data exchange with customers or suppliers (tin00124) by 2018 (definition provided by Eurostat).
- 30% of enterprises sending and/or receiving e-Invoices (tin00114) by 2018 (definition provided by Eurostat).
- 90% of enterprises with fixed broadband access (tin00090) in 2016 (definition provided by Eurostat).
- 15% of enterprises' turnover on e-Commerce (tin00110) by 2016 (definition provided by Eurostat).
- 20% of enterprises having purchased online (at least 1%) (tin00112) by 2018 (definition provided by Eurostat).

[51] See European Commission: „Public Services Online 'Digital by Default or by Detour?', Assessing User Centric eGovernment performance in Europe – eGovernment Background Report Benchmark 2012, ISBN 978-92-79-29951-3, https://ec.europa.eu/digital-agenda/sites/digital-agenda/files/eGov_Benchmark_2012%20background%20report%20published%20version%200.1%20.pdf

[52] Ibid.

- 15% of enterprises having received orders online (at least 1%) (tin00111) by 2018 (definition provided by Eurostat).
- 5% of the ICT sector on GDP (tin00074) in 2018 (definition provided by Eurostat).
- 3% of the ICT personnel on total employment (tin00085) in 2018 (definition provided by Eurostat).
- Average of 2% change of value added by ICT sector at current prices (tin00086) in the next 5 years (definition provided by Eurostat).
- Percentage of individuals who have never used the Internet is lower than 25% (tin00093) in 2018 (definition provided by Eurostat).
- Individuals' level of computer skills (tsdsc460): Low level of basic computer skills: 15 % of individuals have carried out 1 or 2 of the 6 computer-related items in 2016 (definition provided by Eurostat).
- Individuals' level of Internet skills (tsdsc470): Low level of basic Internet skills: 30% of individuals have carried out 1 or 2 of the 6 Internet-related items (definition provided by Eurostat).
- Percentage of individuals regularly using the Internet (tin00091) to 75% by 2016 (definition provided by Eurostat).

4.3 Existing Georgian approaches and measurement frameworks

Existing Georgian approaches and measurement frameworks (indicators and data) which are relevant for the eGeorgia strategy and action plan will need to be checked with the line ministries and may in some cases be difficult to obtain.

Georgia is a member of the global OGP and as such has developed an action plan with measurement and evaluation framework to meet its OGP obligations. The OGP has the objective of making member governments more transparent, accountable, innovative and open to citizen participation. Before the OGP was launched in September 2011 these principles were already on the agenda of the Georgian government[53]. Since 2003, all-embracing and successful measures were implemented to fight corruption, completely alter the mindset for public service delivery and increase the professional integrity of civil servants. "From being one of the most corrupt countries in Eastern Europe in 2003, now Georgia has a corruption perception among its citizens of 4%, only 2% have experienced bribery and 77% of Georgians are satisfied with government's actions in fighting corruption[54]. Georgia's existing political system is based on openness, citizen involvement, transparency and cooperation with civil society. The most advanced and sophisticated technologies and innovative tools are used in all fields of governmental activities.

The OGP requires member countries to develop an action plan with concrete commitments on Open Government that address at least one grand challenge, participate in peer consultation on this action plan with participants and the OGP Steering Committee, publish a self-assessment report on progress after 12 months of OGP implementation, and cooperate with the independent reporting mechanism in generating its own report.

The Georgian Action Plan[55] is the result of a thorough consultation process with local and international CSOs, students and academia throughout the country. The Georgian Government has committed itself to take action within the framework of four 'grand challenges':

- Improving Public Services.
- Increasing Public Integrity.
- More Effectively Managing Public Resources.
- Creating Safer Communities.

Commitments have been made to the following actions:

1) Public Service of the Future
   A. Public Service Hall - Hub of Public Services:
      - Timeline: Currently Public Service Halls are operating in four cities. Eight more will be opened in 2012 (including the capital) and the

[53] http://www.opengovpartnership.org/countries/georgia

[54] Life in Transition Survey, EBRD, 2011; Transparency International's Global Corruption Barometer 2010.

[55] http://www.opengovpartnership.org/sites/www.opengovpartnership.org/files/country_action_plans/OGP_AP_Final_eng.pdf

remaining four will follow by 2013. In total this makes 16 Public Service Halls covering all major cities in the country.
- Responsible Agency: Ministry of Justice

B. e-Governance in Local Governments:
- Timeline: Implementation started in 2012 and will continue throughout the next two years.
- Responsible Agency: Civil Registry Agency

C. Citizens' Portal:
- Timeline: my.gov.ge portal will start functioning by 2013
- Responsible Agency: Data Exchange Agency

2) Easily Accessible and Better Healthcare
- Timeline: Implementation is ongoing and will continue throughout the next two years.
- Responsible Agency: Ministry of Health

3) Be informed and advance your country

A. Ichange.ge (Administrative Agency website):
- Timeline: Proactive disclosure will be started in 2012 by several agencies and will cover all of them by 2014. Data.gov.ge and ichange.ge will be launched in 2013.
- Responsible Agency: Ministry of Justice

B. Platform for participating in the legislative process:
- Timeline: Will be implementation in 2012.
- Responsible Agency: Legislative Herald

C. Citizens and Justice:
- Timeline: Implementation is ongoing and will continue throughout the next two years.
- Responsible Agency: Ministry of Justice, Supreme Court.

D. Transparent Party Financing:
- Timeline: Implementation will be started in 2012 and will continue throughout the next two years.
- Responsible Agency: Chamber of Audit.

4) Innovation for efficient spending

A. Home-grown concept of e-procurement:
- Timeline: Implementation is on-going and will continue throughout the next two years.
- Responsible Agency: Competition and State Procurement Agency

B. e-Declarations:
- Timeline: Implementation is on-going and will continue throughout the next two years.
- Responsible Agency: Civil Service Bureau

5) Technology cares for safety: ICCMS, Crime Mapping and *Safety in Your Neighbourhood*
- Timeline: Implementation of the ICCMS is on-going and will continue throughout next two years. Implementation of crime mapping project and "Safety in Your Neighbourhood" will be started in 2012.

- Responsible Agency: Ministries of Justice and Internal Affairs, Supreme Court.

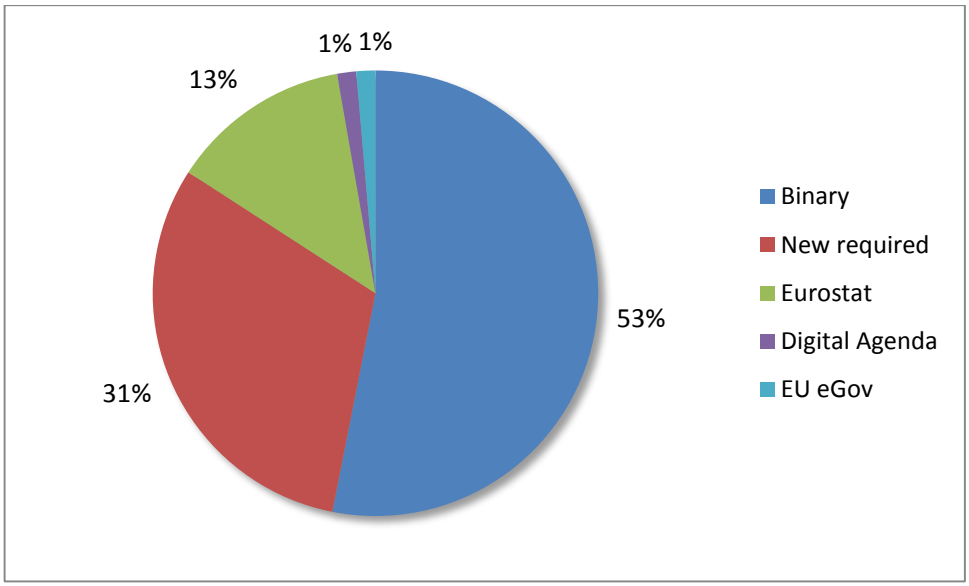
6) CSO Forum
   - Timeline: Meetings of CSO Forum members will be held once in a month.
   - Responsible Agency: Analytical Department of the Ministry of Justice.

4.4 Types of indicators and data to be collected

The table and diagram below show the total number of indicators, the type of data required and where definitions and methods can be found where relevant.

Table and diagram showing the total number of indicators, the type of data required and where definitions and methods can be found where relevant
Note: indicators in the "new required" category do not exist elsewhere so require precise definitions and methods to be developed

Section	Binary data	Numerical data				Total indicators
		New required	Eurostat	DAE	EU eGov benchmark	
3.1.1.	4	2				6
3.1.2.	1	1				2
3.1.3.	1	1				2
3.2.1.	2	3				5
3.2.2.	4	5				9
3.2.3.	3	1				4
3.2.4.	3	3				6
3.4.	3	2				5
3.5.2.	2	1				3
3.5.3.	2		6			8
3.5.4.		1				1
3.6.1.	2	1	3			6
3.6.2.	1	1				2
3.6.3.	3					3
3.7.1.	3		2	1		6
3.7.2.	3	1				4
3.7.3.	3	3				6
3.7.4.	6	3			1	10
3.8.1.	4	1				5
3.8.2.	1	3				4
3.9.1.	3	4				7
3.9.2.			4	1		5
3.9.3.	2	2				4
3.10.1.		2				2
3.10.2.	2	1				3
3.10.3.	2	1				3
3.10.4.	5					5
3.10.5.	4					4
3.11.	8	2	4		1	15
Total	77	45	19	2	2	**145**
%	53%	31%	13%	1%	1%	100%



As can be seen from the table and diagram, there are basically two types of data which need to be collected in Georgia to measure the performance targets listed under each thematic priority:

- 53% of the indicators require binary (yes/no) data. For example, whether or not the responsible agency has prepared a specific set of guidelines or launched an awareness campaign, etc.
- 47% of the indictors require numerical data. For example, the number of e-Services made available, the percentage of citizens or businesses using the e-Services, etc.

There are four indicator types requiring numerical data:

- 15% from the three European sources outline in section 4.2: 13% from Eurostat, 1% from the DAE and 1% from the EU e-Government benchmark-
- 85% other indicators not covered by the European sources which the Georgian entities will need to design.

As mentioned above, the suggested provenance of each specific indicator requiring numerical data is signposted in the section in question in the earlier part of the report.

5. Conclusions and outlook

Georgia has made great efforts in ICT in the last few years, as the most important ICT indices showed Georgia has jumped forward in the rankings year by year. The ICT Development Index conducted by the ITU positioned Georgia amongst the ten most dynamic countries in the world.

The e-Georgia strategy is designed to accelerate progress towards a modern ICT-driven nation. Derived from strategy's visions and mission eleven priority topics are described and for each topic and subtopic concrete projects, action items with timelines and performance targets (or key performance indicators/KPIs) are proposed, from which detailed and measurable goals are defined.

More than 30 organisations participated and contributed to this document. It is important to note that this document is created by all the participants in the workshops and quality has been ensured by those who provided comments.

A strategy is only valuable if it receives broad commitment from all involved stakeholders and reflects their opinions. Therefore each organisation involved in Georgia is encouraged to contribute to the strategy and to support the becoming a reality.

A strategy is an important step to find a common view on the path, but it is only the first step. It is the architectural plan for building an ICT-driven nation. The proposed measurements need to be implemented and become reality. All stakeholders are requested to contribute to achieve this goal. International experts are willing to give advice. Together, there will be discussions and exchanges of opinions, but at the end of the day, the common vision will help lead them to build the wealthy nation of Georgia.

Monitoring progress and governance, as proposed in this document, will be key issues for the successful implementation of the strategy. The measurement instruments needed to this are described in detail to determine ongoing progress. This will also help Georgia to advance in its rankings in international indices. But the most important impact is that the people and enterprises of Georgia profit from the implementation and obtain concrete benefits from the usage of ICT. In relation to the current situation and the goals Georgia wants to achieve, knowledge transfer and international cooperation in certain fields are recommended:

- Implementation of policy coordination department, support of e-Georgia services and implementation in regions and local areas.
- Knowledge transfer about security, data centre / cloud computing facilities, telecommunications policy and infrastructure, etc.
- IT entrepreneurship.
- Training and education (vocational training and e-Learning, train-the-trainer, etc.) – IT / e-Government Academy.
- Research in ICT (security, cyber topics, technologies, business cooperation, etc.).
- ICT strategy development.
- etc.

International experts will work together with Georgia in order to achieve the goals. Implementation means that many builders of a modern strategy will work on the ICT-driven nation and will discuss the details on to achieve this on and on-going basis.

e-Georgia – A Digital Georgia!

Acknowledgements: The following organisations have participated and contributed to the development of the e-Georgia strategy:

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Ministry of Agriculture
Ministry of Corrections and Legal Assistance
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Ministry of Defence
Ministry of Economy and Sustainable Development
Ministry of Education
Shota Rustaveli National Science Foundation
Ministry of Energy
Ministry of Environment Protection of Georgia
Ministry of Finance
Financial Analytical Service
Revenue Service
Ministry of Health, Labour and Social Affairs
Ministry of Internal Affairs
Ministry of Justice
Data Exchange Agency
National Agency for Public Registry
Public Service Development Agency
Public Service Hall
Ministry of Regional Development and Infrastructure
Ministry of Sport and Youth Affairs
Office of the State Minister on European and Euro-Atlantic Integration
Office of the State Minister of Georgia for Diaspora Issues

Parliament of Georgia
Supreme Court of Georgia
National Bank of Georgia

Georgian National Communication Commission
GeoStat
National Intellectual Property Center - Sakpatenti
State Audit Office of Georgia

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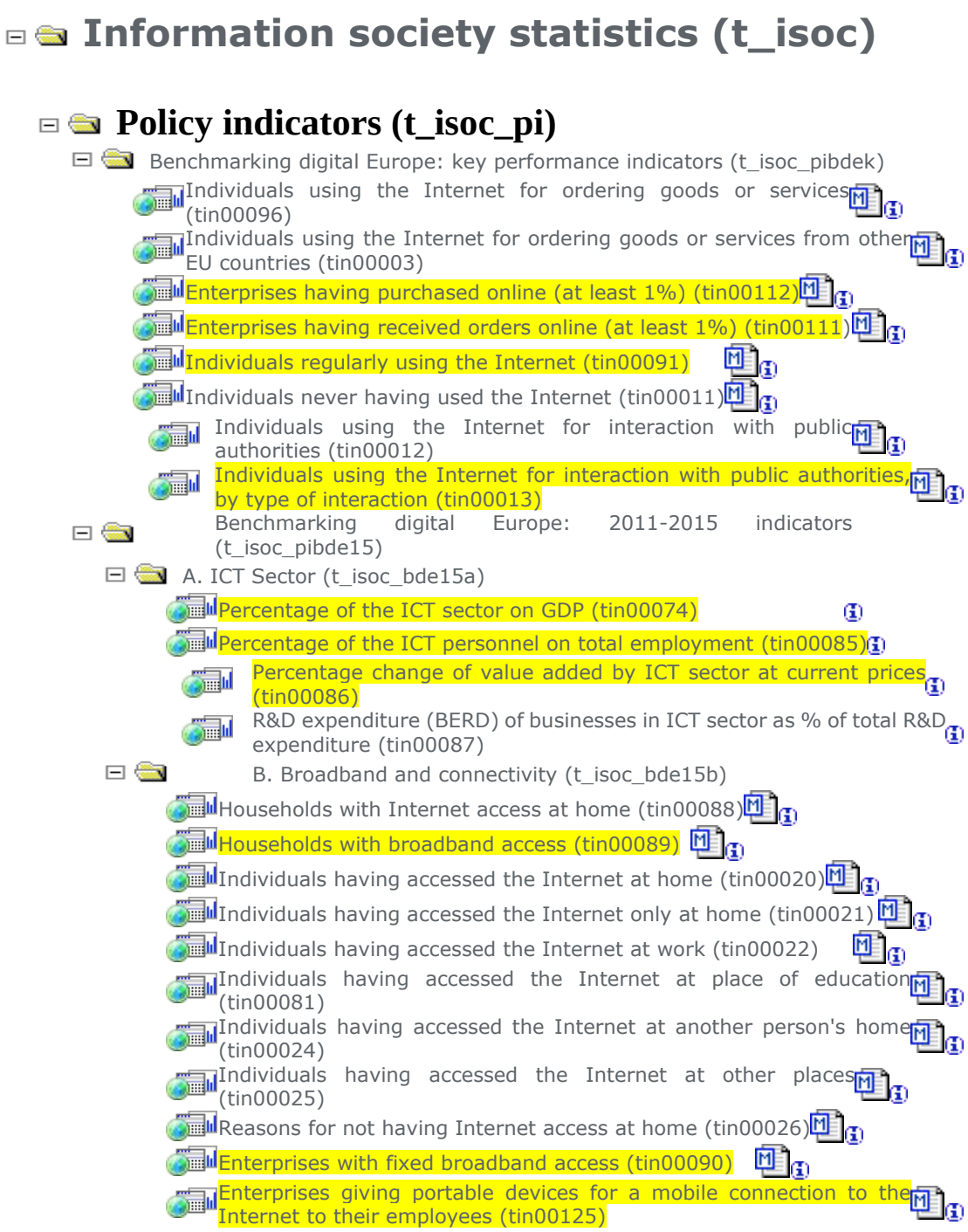
We herewith express our sincere gratitude for the most valuable contributions and feedback received, and in particular for the proactive engagement in the workshops and personal interviews held from February till October 2013.

Annex A: Eurostat indicators

Full list of relevant Eurostat indicators

See the Eurostat website[56] to get precise definitions and the methods used to collect data on the indicators:
http://epp.eurostat.ec.europa.eu/portal/page/portal/information_society/data/main_tables

Extracted 26 August 2013



[56] http://epp.eurostat.ec.europa.eu/portal/page/portal/information_society/data/main_tables

- Individuals using selected mobile devices to access the Internet (tin00083)
- Individuals using a mobile phone via UMTS (3G) to access the Internet (tin00117)
- Individuals using a laptop via wireless connection to access the Internet (tin00118)

C. ICT usage by individuals (t_isoc_bde15c)

- Internet use by individuals (tin00028)
- Individuals frequently using the Internet (tin00092)
- Individuals using the Internet for finding information about goods and services (tin00095)
- Individuals using the Internet for downloading software (tin00029)
- Individuals using the Internet for uploading selfcreated content (tin00030)
- Individuals using the Internet for participating in social networks (tin00127)
- Individuals using the Internet for seeking health information (tin00130)
- Individuals using the Internet for posting messages to social media sites or instant messaging (tin00084)
- Individuals using the Internet for reading/downloading online newspapers / news magazines (tin00097)
- Individuals using the Internet for listening to webradio/watching web television (tin00100)
- Individuals using the Internet for Internet banking (tin00099)
- Individuals using the Internet for selling goods or services (tin00098)
- Individuals using the Internet to buy or order online content (tin00080)
- Individuals using the Internet for playing or downloading games, images, films or music (tin00032)
- Individuals using the Internet for looking for a job or sending a job application (tin00102)
- Individuals using the Internet for consulting wiki (tin00128)
- Individuals using the Internet for doing an online course (tin00103)
- Individuals using the Internet for taking part in online consultations or voting (tin00129)
- Individuals using the Internet for looking for information about education, training or course offers (tin00034)
- Individuals who have carried out 1 or 2 of the computer related activities (tin00070)
- Individuals who have carried out 3 or 4 of the computer related activities (tin00071)
- Individuals who have carried out 5 or 6 of the computer related activities (tin00072)
- Individuals who have carried out 1 or 2 of the Internet related activities (tin00076)
- Individuals who have carried out 3 or 4 of the related Internet activities (tin00077)
- Individuals who have carried out 5 or 6 of the related Internet activities (tin00078)

D. ICT usage by enterprises (t_isoc_bde15d)

- Share of enterprises' turnover on e-commerce (tin00110)
- Enterprises sharing electronically information on sales or on purchases with the software used for any internal function (tin00113)
- Enterprises using automated data exchange with customers or suppliers (tin00124)
- Enterprises sending and/or receiving e-invoices (tin00114)
- Enterprises using radio frequency identification (RFID) instrument (tin00126)
- Enterprises whose business processes are automatically linked to those of their suppliers and/or customers (tin00115)
- Enterprises using software solutions, like CRM to analyse information about clients for marketing purposes (tin00116)

E. E-Public services (t_isoc_bde15e)

- Individuals using the Internet for interaction with public authorities (tin00079)
- Enterprises using the Internet for interaction with public authorities (tin00107)
- Enterprises using the Internet for interaction with public authorities, by interaction (tin00108)
- Enterprises using the Internet for submitting a proposal in a public electronic tender system to public authorities (tin00109)

Benchmarking indicator: public services - e-Government (t_isoc_pibips)

- E-Government usage by individuals (tsdgo330)

Telecommunication services (t_isoc

- Number of mobile phone subscriptions (1 000) (tin00059)
- Mobile phone subscriptions (tin00060)

Computers and the Internet in households and enterprises (t_isoc_ci)

Internet - level of access, use and activities (t_isoc_ci_in)

- Individuals who have never used the Internet (tin00093)
- Individuals using the Internet, by place of use (tin00075)
- Households having access to the Internet, by type of connection (tin00073)
- Level of Internet access - households (tin00134)
- Individuals using the Internet for seeking health-related information (tin00101)
- Enterprises having remote employed persons who connect to the enterprise's IT systems from home (2006) (tin00082)

Special module 2008: individuals - use of advanced services (t_isoc_ci_as)

- Individuals using the Internet for uploading self-created content to any website to be shared (tin00119)
- Individuals using the Internet for downloading computer or video games or their updates (tin00120)
- Individuals using the Internet for downloading/listening to/watching music and/or films (tin00121)
- Individuals paying for online audio-visual content (tin00122)
- Individuals using the Internet for sending/receiving e-mails (tin00094)
- Individuals using the Internet for seeking information with the purpose of learning (tin00104)
- Enterprises using applications for employees to access Human Resources services (tin00123)
- Individuals using the Internet for interaction with public authorities (tin00105)

E-Commerce by individuals and enterprises (t_isoc_ec)

- Individuals having ordered/bought goods or services for private use over the Internet in the l months (tin00067)

E-Skills of individuals and ICT competence in enterprises (t_isoc_sk)

- Individuals' level of computer skills (tsdsc460)
- Individuals' level of Internet skills (tsdsc470)

Regional Information society statistics (t_isoc_reg)

- Households that have Internet access at home by NUTS 2 regions (tgs00047)
- Households that have broadband access by NUTS 2 regions (tgs00048)
- Percentage of households with broadband access in relation to households with Internet access, by NUTS 2 regions (tgs00049)
- Individuals regularly using the Internet by NUTS 2 regions (tgs00050)
- Individuals who have never used a computer by NUTS 2 regions (tgs00051)
- Individuals who ordered goods or services over the Internet for private use in the last year by NUTS 2 regions (tgs00052)

Annex B: 19 Public Services / “Life events” = LE

Full list of European ‘life events’ (which are actually public services) measured as part of the annual European e-Government benchmarking survey[57].

- LE1: Enrolling in higher education and/or applying for a study grant
- LE2: Starting a procedure for a disability allowance
- LE3: Looking for a job
- LE4: Becoming unemployed
- LE5: Retiring
- LE6: Applying for a driver’s licence (or renewing an existing one)
- LE7: Registering a car
- LE8: Buying, building or renovating a house
- LE9: Moving and changing address within one country
- LE10: Moving or preparing to move to another country (excluding to study, work, retire…)
- LE11: Needing a passport to travel to another country
- LE12: Declaring the birth of a child and/or applying for a birth grant
- LE13: Marrying or changing marital status
- LE14: Death of a close relative and/or starting an inheritance procedure
- LE15: Starting a new job
- LE16: Making a doctor’s appointment in a hospital
- LE17: Reporting a crime (smaller offences, e.g. theft, burglary etc.)
- LE18: Declaring income taxes
- LE19: Making use of the public library.

[57] See page 30 in https://ec.europa.eu/digital-agenda/sites/digital-agenda/files/eGov_Benchmark_2012%20background%20report%20published%20version%200.1%20.pdf

Annex C: Glossary

Accessibility

To be understood here as Web accessibility, which means that everyone including people with disabilities can perceive, understand, navigate, and interact with the Internet, and have the opportunity to contribute to society. While accessibility is a broad concept, e-Accessibility aims to ensure that people with disabilities and the elderly can access ICTs on the same basis as others.

Accessibility is a term indicating full and simple access and usage of information and communication technology and service offers on the Internet. Accessibility aims at removing technical, visual and other access barriers to avoid the exclusion of persons or groups of people with special needs. With accessibility, people with such special needs should be encouraged to use ICT and Internet offers for exploiting related advantages and simplifications. An important guideline for the implementation of accessible Internet pages is developed and published by the Web Accessibility Initiative (WAI).

Administrative Burden

The cost of administrative work that businesses conduct solely in order to comply with legal obligations (http://ec.europa.eu/enterprise/policies/better-regulation/glossary/index_en.htm).

Aggregate Public Services

A generic term used in the GIF conceptual model for public services to refer to a set of basic public services accessed in a secure and controlled way before being combined and then delivered as a whole to end users.

Authentication

Authentication is the process of verifying and securing the identity of a user or a program when accessing electronically secured data and systems or when performing communication processes. In the authentication process, a certain attribute of a user or system certifies authorized access to such systems or data, for example, a key (see public key cryptography), a smart card, a password, the user name or even biometrical traits (fingerprint). A higher security level can be achieved by the combination of different traits used for authentication.

Authentic Source

An authentic source is information that is stored only once and which is believed to be correct, so can serve as a basis for reuse.

Back Office

The term Back Office includes processes and workflows of companies and public administrations which are, unlike the front office, running in the internal part of an organization and which are invisible for the customer or citizen. Examples are the processing of applications or the issuing of notifications as well as the general management and accounting. Middleware is used to link up (interoperate) the back office with the front office systems.

Basic Public Services

Basic public services are the most fundamental service components from which Georgian public services can be built. According to the GIF conceptual model, there are three fundamental types of basic public services: base registries, interoperability facilitators, and external services.

Base Registries

Authentic sources of information under the control of a public administration. Examples include registries of persons, vehicles, companies, licences, VAT numbers, locations, buildings, roads, etc.

Best Practice

Best Practices are solutions, practices and products, which are already realized and successfully used in practice. The transfer of such approved practices should reduce costs and preclude mistakes beforehand. Best Practices are determined by benchmarking assessments, in which products and solutions are compared by standardized quality characteristics. Best practice has recently been replaced by the term ‘good practice’.

Building-Block Approach

An approach to building information systems from architecture to implementation in which the information system is designed as an assembly or aggregation of components that encapsulate data and functionalities in groups that can also be reused as ‘building blocks’ to build other public services or information systems.

Business Process

A business process is a sequence of linked activities that creates value by turning inputs into a more valuable output. This can be performed by human participants or ICT systems, or both.

Business Process Reengineering (BPR)

Business Process Reengineering is an approach to modernize and restructure main business processes in companies or in public organizations based on a radical change. BPR requires a profound reconsideration of functions and a radical redesign of business processes. The aim is to react rapidly to market changes and to changing customer needs thereby saving costs and improving productivity while at the same time exploiting the potentials of modern ICT.

Business to Business (B2B)

In general, the term Business to Business stands for business relations between private companies. Yet, it is mostly used for the communication and the transaction of business processes between companies with the use of information and communication technology.

Business to Government (B2G)

Business to Government describes business processes between private companies and public administrations with the use of information and communication technology.

Certificate

In practical terms, a certificate is a digital identity card or a digital certification provided with a digital signature. A digital certificate from a certificate authority enables a person to prove his or her authenticity and to verify the belonging of a public key to its owner. Certificates are not only issued to identify and authenticate persons but also organizations, server, application programs etc. in a network. A certificate has a given validity and can be revoked or disabled by a certificate authority.

Chip Card

The term Chip Card describes different forms of plastic cards with an embedded microchip. Two types of chip cards can be distinguished: cards which simply store Information (memory card) and cards which are able to store and process data (smart card or integrated circuit card (ICC)). The latter are used e.g. for authentication (see signature card) or for electronic payment.

Client

A Client is a computer or a program that uses different services and resources in a network provided by a server. A browser, for example, is a client to access data (web sites) on a web server over the Internet.

Cloud Computing

Cloud computing, or the cloud, is a colloquial expression used to describe a variety of different types of computing concepts that involve a large number of computers connected through a real-time communication network such as the Internet. In science, cloud computing is a synonym for distributed computing over a network and means the ability to run a program on many connected computers at the same time. Cloud computing providers offer their services according to several fundamental models:

infrastructure as a service (IaaS), platform as a service (PaaS), and software as a service (SaaS) where IaaS is the most basic and each higher model abstracts from the details of the lower models.

Collaborative Platform

A set of specific services and facilities for the use of a specific community and their interactions. The goal is to facilitate cooperation to achieve shared objectives. Typically, the services are communication-related, and incorporate a repository for exchanged objects, information, materials, etc. A notable example is the ePractice.eu platform, designed to enable members of public administrations involved in providing public services to benefit from each other's work, knowledge and experience. Other examples are OSOR.eu and SEMIC.eu (now merged to Joinup.eu).

Controlling

The term Controlling describes systems, concepts and instruments for the controlling and the coordination of the operative and strategic management in an organization. Controlling supports the management unit with delivering relevant management information to control and steer an organization. Consequently, it supports decision-making processes.

Custom-made software

Specific software either developed internally within an organisation (for the GIF, a public administration) or developed for this organisation by a contractor to meet the specific requirements of that organisation. In most cases, the custom-made software is paid in full by the organisation which is consequently the owner of the software, holding all rights related to the further use of this software.

Data Center

A data centre is a facility used to house computer systems and associated components, such as telecommunications and storage systems. It generally includes redundant or backup power supplies, redundant data communications connections, environmental controls (e.g., air conditioning, fire suppression) and security devices.

Data Representation

The manner in which data are expressed symbolically by binary digits in a computer.

Data Protection

Data protection is imposed by law in order to protect personnel data against unauthorized access and abuse. Thereby, also the handling (analysis, processing, use) of data is regulated. Thus, data protection secures personal rights to self-determining the computation and sharing of personal data. This means that everyone can decide in person when, how and to whom his or her personnel data is accessible.

Data Repository

Any collection of data meant for use (processing, storage, querying, etc.) by an information system. Typically, a data repository contains additional structural and semantic information about the data in question, designed to aid the use of the data (data model, relationships between data elements, metadata, etc.). It may provide specific functionalities closely tied to the data stored in the repository (searching, indexing, etc.).

Database

A database is an electronic memory for saving and managing a big amount of data. It is concertedly used by different programs and users and provides a fast access to stored data.

Digital Divide

The term Digital Divide describes the increasing gap of the Have's and the Have-not's within the population due to the influence and the use of information and communication technology. There are people who are not able or not capable of using ICT because of their social background, because they

do not have access to it, etc. Thus these people are excluded and disadvantaged. Consequently, unequal social and economic chances and development potentials do exist for different people.

Digital Rights Management (DRM)

Digital Rights Management covers technologies and legal mechanisms to protect the copyrights of digital data (audio, video, documents, and software) and the access to it.

Digital Signature

The digital signature describes an asymmetric encryption process to warranty the authenticity and the integrity of electronic data and to check the identity of a user. In most cases, it confers to a handwritten signature or can be compared with the possibility to prove one's identity clearly (identity card). The legal effect of a digital signature in Germany is regulated by the Digital Signature Act

Document Management System (DMS)

A document management system is a software system for storing, tracking, editing, managing and publishing electronic documents. Unlike traditional archival storage systems they provide additional functions for the handling of documents. Other terms for document management are enterprise document management or compound document management.

e-Business

e-Business (Electronic Business) deals with all forms of electronic transactions of business processes by the use of information and communication technology.

e-Commerce

e-Commerce (Electronic Commerce) as a part of e-Business deals with business transaction of goods, information and services over electronic systems in the commercial sector.

e-Democracy

e-Democracy includes different approaches of improving democratic communication and participation structures by the use of information and communication technology. E-Voting and e-Participation, for example, are part of e-Democracy.

.

e-Government

e-Government refers to the simplification and the transaction of business processes by the use of information and communication technology in the context of governance and public administration.

e-Government is about using the tools and systems made possible by information and communication technologies (ICTs) to provide better public services to citizens and businesses.

e-Inclusion

e-Inclusion aims to prevent the risks of ‘digital exclusion’, i.e. to ensure that disadvantaged people are not left behind and to avoid new forms of exclusion due to lack of digital literacy or Internet access.

e-Learning

The term Electronic Learning encompasses all forms of teaching and learning with the use of information and communication technology and thus it extends traditional methods of knowledge transfer. e-Learning allows interactive, multimedia-based, cooperative and individual learning without spatiotemporal restrictions.

e-Participation

By the use of information and communication technology, Electronic Participation develops and implements new forms of participation in decision and policy making processes for citizen. These processes are beyond providing just information; they should encourage the direct communication and discussion between public authorities, elected representatives, politicians, citizens and governance. e-

Participation is an offer to take part in the process of forming opinions up to the point of decision making with electronic systems. Aims of e-Participation are to improve public responsiveness and to reach citizen satisfaction.

e-Payment

Electronic Payment is the generic term for accepted systems and processes for the electronic transmission of required data for payment over a network (Internet, UMTS etc.). These processes ensure secure accounting and payment for users and provider.

e-Procurement

Electronic Procurement is the transaction of procurement processes of goods and services of an organization with the use of information and communication technology. Order processes are optimized, procurement costs are reduced and procurement quality is improved by the use of e-Procurement.

e-Tendering

Electronic Tendering, as a part of e-Procurement, describes the process of drawing up a tender till the contracting of a bidder. Thereby, the tendering steps are executed fully electronically using e-Tendering platforms in the Internet. The overall aim is to perform faster, cheaper and more transparent public tender processes.

e-Voting

The term Electronic Voting, as a part of e-Democracy, stands for electronic election as well as online elections. It describes different ways of electing and voting over networks (e.g. the Internet) by the use of information and communication technology independently of the location of a person. Beyond the democratic participation of the citizens the term e-Voting covers simple forms of electing, for example a common voting on a web page.

Electronic Certification

Electronic certification is the application of an electronic signature, by a specifically authorised person or entity, in a specific context for a specific purpose. It is mostly used to indicate that a certain validation process has been executed and that a given result is being attested by the signer. In the simplest case, it can merely represent the assertion of a given fact by an authorised person.

Electronic Records

A record in electronic form (see MOREQ specifications at http://ec.europa.eu/transparency/archival_policy/moreq/doc/moreq2_spec.pdf).

Electronic Signature

According to Directive 1999/93/EC, ‘electronic signature’ means data in electronic form which are attached to or logically associated with other electronic data and which serve as a method of authentication.

EPS establishment process

The activities needed to establish a Georgian public service (EPS), making it available for use.

European Interoperability Strategy (EIS)

The European Interoperability Strategy (EIS) provides the basis for defining the organisational, financial and operational framework (including governance) needed to ensure ongoing support for cross-border and cross-sector interoperability, as well as the exchange of information among European public administrations.

European public service (EPS)

A cross-border public sector service supplied by public administrations, either to one another or to European businesses and citizens.

Formalised Specifications

Formalised specifications are either standards pursuant to EU Directive 98/34 or specifications established by ICT industry fora or consortia.

Front Office

Front office refers to a set of application programs und organizations that enable the direct contact to customers. These are, for example, web portals, offices for citizens and call centres, where customers (citizens) can inform themselves about services and make use of them directly.

G3 – Georgian Governmental Gateway

Data Exchange infrastructure tier that enables e-ID management (registration, authentication and authorisation), security, applications interoperability and e-services integration, using web-based workflow for interconnection of back-office systems, providing a single integrated view of the Government by standardising the process for submitting transactions and documents and providing a single registration and single-sign on experience.

GIF - Georgian Interoperability Framework

An interoperability framework based on open standards that promotes best practice for use of XML and scheme creation for interoperability purposes.

Good Governance

Good Governance is a concept that describes principles, approaches and guidelines for good governance and public administration to promote the interaction and formation of political will in regards to societal and technological changes. The European Commission has formulated five principles for "good governance": openness, participation, accountability, effectiveness and coherence.

Government to Citizen (G2C)

Government to Citizen describes business relationships between public administrations and citizens (as a customer) with the use of information and communication technology.

Government to Government (G2G)

Government to Government describes business relationships between public authorities with the use of information and communication technology.

GovernmentGateway

The GovernmentGateway is a technical infrastructure (Middleware), which enables customers of public administration to enact electronic public information and transaction services via a centralized web based e-Government portal.

HTTPS

The Hypertext Transfer Protocol Secure (HTTPS) is a SSL encrypted HTTP Protocol. HTTPS is based on X.509 certificates and is used for the encryption and authentication during the communication between client and server over the Internet.

Identity Management

Identity Management is the management, supply and use of different user profiles and digital access data. It enables a user to use different identities and control the forwarding of required personnel data during electronic communication. The user decides which personal attributes are forwarded, for example, to protect his or her privacy or to identify him or herself clearly. Systems used for identity management provide processes for the authentication, password management, access management and the management of rights and resources of single users.

Information

Information is semantically enriched data, i.e. collections of data that have been given relevance and purpose.

Information Society

The term Information Society describes an economic system and a form of society that is influenced by information and communication technologies and where attaining, storing, processing, spreading and use of information and knowledge plays an essential role in all areas of life.

Information and Communication Technology (ICT)

Information and Communication Technology is the collective term for all technical processes and devices for electronic data processing and for the support of communication over electronic media. ICT extends the term Information Technology (IT) with the aspect of electronic communication.
Technology, e.g. electronic computers, computer software and communications technology, used to convert, store, protect, process, transmit and retrieve information.

Information Technology (IT)

Information Technology is the collective term for all technical processes and devices for automatic electronic data processing. It was formerly termed as data processing or electronic data processing (EDP).

Interface

An interface is a conceptual or physical boundary where two (or more) independent legal systems, organisations, processes, communicators, IT systems, or any variation/combination thereof interact.

Interoperability

Interoperability The ability of disparate and diverse organisations to interact towards mutually beneficial and agreed common goals, involving the sharing of information and knowledge between the organisations, through the business processes they support, by means of the exchange of data between their respective ICT systems.

Interoperability describes the ability and the instruments for the direct communication and cooperation between different systems and organizational units based upon common standards, technologies and concepts. Furthermore, interoperability needs a shared understanding of information and an adjustment of data structure. This means, for example, on a technical level that devices with different hardware can communicate in a network based on a common protocol. An example is the connection between a mobile phone and a computer over Bluetooth.

Interoperability Agreements

Written interoperability agreements are concrete and binding documents which set out the precise obligations of two parties cooperating across an ‘interface’ to achieve interoperability.
Interoperability Framework An interoperability framework is an agreed approach to interoperability for organisations that wish to work together towards the joint delivery of public services. Within its scope of applicability, it specifies a set of common elements such as vocabulary, concepts, principles, policies, guidelines, recommendations, standards, specifications and practices.

Interoperability Governance

Interoperability governance covers the ownership, definition, development, maintenance, monitoring, promoting and implementing of interoperability frameworks in the context of multiple organisations working together to provide (public) services. It is a high-level function providing leadership, organisational structures and processes to ensure that the interoperability frameworks sustain and extend the organisations’ strategies and objectives.

Interoperability Levels

The interoperability levels classify interoperability concerns according to who/what is concerned and cover, within a given political context, legal, organisational, semantic and technical interoperability.

Knowledge Management

Knowledge Management refers to a range of technical systems, of the organization and management of explicit and implicit knowledge in companies and public authorities with the aim of efficient identification, storage, processing, spreading and use of knowledge.

Knowledge Society

Knowledge society is a nowadays rather used name for the term and the characteristics of information society.

Legacy System

Generally refers to older systems that still perform essential functions or host/provide access to essential data, but which use older technology, pose difficulties for integrating with newer systems, and for which reimplementation is seen to be difficult or expensive. Strictly speaking, however, any IT system, of whatever vintage, including one that has recently been implemented, but which has not been designed with reuse or integration with other systems in mind, can also be classified as such.

Legal Entity of Public Law (LEPL)

A legal entity of public law is an organization separated from governing bodies of the state, created by the relevant law, decree of the President of Georgia or by the administrative act of state bodies adopted on the basis of law, which conducts political, state, social, educational, cultural and other public activity (Art. 2 of the Law on of Georgia on Legal Entity of Public Law).

Loose coupling

Loose coupling refers to communications between systems that operate more or less independently of one another (asynchronously) and whose internal states are not strongly interdependent. The coupling takes the form of messages passed between the systems in question, typically implemented using some type of middleware layer or queuing system, so that the target system deals with requests as and when it can. Thus, the target system may not even be available at the time of the request, which is simply queued for later action.

Memorandum of Understanding

A bilateral or multilateral written agreement between two organisations which sets out a number of areas and means by which they will cooperate, collaborate or otherwise assist one another. The exact nature of these activities depends on the nature of the two organisations, the domain of activity in question, and the scope of the cooperation envisaged.

Metadata

Metadata are structured data which contains information about other data and thereby describes data. For example, the attributes of electronic data are detailed by author, right of access, date of the last processing, format and keywords. This makes the retrieval, administration and management of electronic resources substantially easier.

m-Government

Mobile Government is the intensive use of mobile technologies and devices in connection with e-Government. The term also includes the transaction of business processes over wireless networks and mobile devices like Laptops, mobile phones or PDAs. The goal is to provide location-independent access to existing and new services, applications and information for the citizens, companies and public authorities. Thereby, a more flexible and faster service completion and new ways of communication shall be realised.

Middleware

Middleware is a technical infrastructure (software), which enables different applications to access resources on shared systems. Middleware solutions are e.g. required to interoperate front office and back office applications and systems.

Monitoring

The generic term monitoring covers any form of monitoring and controlling of situations, activities, processes or systems. It is often implemented with the use of technical support. Monitoring is also used for managing processes that diverge.

Multichannel Delivery

A channel is a means used by an administration to interact with and deliver services to its users, and for users to contact public administrations with the aim of acquiring public services. The term 'user' includes citizens, businesses and organisations as consumers of public services. The set of different possible 'means' for electronic delivery constantly changes, and currently includes the use of web-based technologies, telephony, paper media, face-to-face contacts and many others, applications of these technologies such as the Internet, e-Mail, SMS, call centres or service counters, and devices to access these applications such as personal computers, mobile phones, kiosks or digital TV. Multichannel delivery refers to the provision of public services simultaneously and independently via two or more such channels, selectable by the user according to needs.

National Interoperability Framework (NIF)

NIFs are interoperability frameworks defined by individual Member States to govern national IT systems and infrastructure within their own countries.

New Public Management (NPM)

New Public management is the generic term for internationally discussed reform and modernization approaches for public authorities. The focus of these models is the adoption of management concepts, theories and instruments, which are used in the private sector, to increase the effectiveness, efficiency, profitability and orientation towards the citizen. The New Steering Model (NSM) is based on NPM and was developed in Germany for the implementation at regional level.

One-stop Government

One-stop Government provides information and services of public authorities on one shared platform with the access over a consistent user interface. This enables the customer to use a broad range of products and services of different authorities via a central access point independent from their location. It enables every citizen e.g. to find all relevant information for specific life events at one place, like contact details of the responsible authority, required forms or applications. This increases the service-orientation and saves time and costs for the customers in processing his or her transactions.

Online Application

Possibility to use a secure and legally compliant electronic application over the Internet.

Online Services

Online Services is the collective term for all kinds of service offers, which can be used over the Internet. It also includes basic (or trivial) services which only provide the access to the Internet and to the available content.

OpenGLAM

OpenGLAM (Galleries, Libraries, Archives and Museums) promotes free and open access to digital cultural heritage held by Galleries, Libraries, Archives and Museums. Main benefits for cultural institutions in Georgia are greater public awareness of their collections via popular open content portals such as Wikimedia Commons and the Internet Archive, increased discoverability of their holdings through portals like Europeana and Google as well as improved opportunities for their audiences to participate in the curation and enrichment of their collections. See http://openglam.org

OpenAccess

OpenAccess is the practice of providing unrestricted access via the Internet to peer-reviewed scholarly journal articles. OpenAccess is also increasingly being provided to theses, scholarly monographs and book chapters. In an ICT-Hub Georgia, Georgian universities should be in the forefront of OpenAccess initiatives of the region.

Open Source

Open Source or Open Source Software (OSS) is software which is freely available. It is allowed to arbitrarily copy, use and pass on the software. Furthermore, the source code is freely accessible and visible for users and can be changed, passed on and published by other developers. See the 10 criteria that define Open Source Software (OSS) at the Open Source Initiative web site: http://www.opensource.org/docs/osd. An alternative definition (of Free Software) can be found at: http://www.gnu.org/philosophy/free-sw.html.

Open Source Observatory and Repository (OSOR)

The Open Source Observatory and Repository for European public administrations (OSOR) is a platform for exchanging information, experiences and OSS-based code for use in public administrations (see http://www.joinup.eu/).

Orchestration

The aggregation and sequenced execution of sets of transactions involving use of other services and functionalities, according to business rules embodied in one or more documented business processes, with the ultimate goal of performing or providing some other value-added function or service. Orchestration is closely related to the concept of workflow. Usually orchestration involves executing a set of processes, described in a standard language, by an 'orchestration engine', which is configurable and capable of executing all the requisite service calls and routing the inputs and outputs of processes according to rules described in that language.

Outsourcing

Outsourcing is a strategy for the delegation of fields of work and services of an organization to an external contractor. The motivators for outsourcing are to lower costs, to increase the effectiveness and to concentrate on the core business of an organization. Another driver for outsourcing is when the fulfilment of (non-core) operations is cheaper and effectuated more efficiently from a service provider.

Point of Single Contact (PoSC)

Single institutional interlocutor for a given service provider through which the latter can collect all relevant information and easily complete at a distance and by electronic means all procedures and formalities to access a service activity and to the exercise thereof (see Article 8 of the Services Directive — OJ L376 of 27.12.2006).

Project Management

Project Management refers to the planning, orchestration, organization and controlling of all activities relevant for a successful project implementation, including the coordination and leadership of the project team.

Proprietary Software

Software that, generally for a fee, can be used on a limited number of computers and/or by a limited number of users. The internal working of the software (the source code) is not available for study and/or modification by the user.

Proprietary Specifications

Generally refers to specifications that are either partially or totally unpublished, or are only available from a single vendor for a substantial fee, and/or under restrictive terms, thus making the implementation and use by third parties of products that conform to the given specifications subject to control.

Protocol

A set of conventions that govern the interaction of processes, devices and other components within and across systems.

Public Key

The Public Key Cryptography is an asymmetric encryption process for data which uses a pair of cryptographic keys to encrypt a message (one for the encryption and one for the decryption). The private key is only known by the owner. For example, it allows the encryption of an eMail with the public key of a person which only can be decrypted with the corresponding private key of this person.

Public Private Partnership

Public Private Partnership (PPP) is a sustainable way of cooperation between private and public Institutions to attain corporate objectives. With this form of collaboration, public duties are performed using synergies and balancing competencies among public and private bodies. This may result in partial or full privatization of public duties.

Qualified Electronic Signature

A qualified electronic signature fulfils certain security requirements of the Digital Signature Act and the Ordinance on Electronic Signatures. Actually, it represents the highest security level for electronic signatures. Thus it is also suitable for the use in communications among jurisdictions and in electronic legal relations.

Record

Document(s) produced or received by a person or organisation in the course of business, and retained by that person or organisation (see MOREQ specifications at http://ec.europa.eu/transparency/archival_policy/moreq/doc/moreq2_spec.pdf).
Note: a record may incorporate one or several documents (e.g. when one document has attachments), and may be on any medium in any format. In addition to the content of the document(s), it should include contextual information and, if applicable, structural information (i.e. information which describes the components of the record). A key feature of a record is that it cannot be changed.

Registry of Registers (RoR)

Unified State Registry of Information (Registry of Registers) - a single catalogue of registers, databases, services and information systems of the registry subjects, aiming at description of information resources available within the Georgian public sector, establishment of uniform standards for information processing, facilitation of coordination and coherent development of information systems, promotion of uniform information policy and efficient use of public resources (Art. 3 of the Law on Unified State Registry of Information).

Reusability

The degree to which a software module or other work product can be used in contexts other than its original, intended or main purpose.

RSA

RSA is probably the best known asymmetric encryption algorithm for data. The RSA algorithm calculates the keys from two large prime numbers. The process was named after the initials of the inventors Rivest, Shamir and Adleman (RSA).

S/MIME

The Secure Multipurpose Internet Mail Extensions Standard (S/MIME) is a process for the encryption and digital signature of messages (e-Mails).

Secure Data Exchange

This is a component of the conceptual model for European public services. Its aim is to ensure that all cross-border data exchanges are done in a secure and controlled way.

Semantic Interoperability Centre Europe (SEMIC.EU)

Semantic Interoperability Centre Europe is a collaborative platform and service offered by the European Commission to support the sharing of interoperability assets to be used in public administrations and e-Government (http://www.joinup.eu).

Semantic Interoperability Assets

Semantic interoperability assets are a subset of interoperability assets and include any element of the semantic layer, such as nomenclatures, thesauri, multilingual dictionaries, ontologies, mapping-tables, mapping-rules, service descriptions, categories, and web services.

Service Level Agreement (SLA)

A Service Level Agreement is an agreement or rather a contract between a service provider and a customer. The agreement contains specifications about the purpose, the scale of operations and the quality of a service on defined conditions.
A formalised agreement between two cooperating entities; typically, a service provider and a user. The agreement is expressed in the form of a written, negotiated contract. Typically, such agreements define specific metrics (Key Performance Indicators — KPIs) for measuring the performance of the service provider (which in total define the 'service level'), and document binding commitments defined as the attainment of specific targets for certain KPIs, plus associated actions such as corrective measures. SLAs can also cover commitments by the user, for example to meet certain notification deadlines, provide facilities or other resources needed by the service provider in the course of service provision, problem solving, or to process inputs given by the service provider to the user.

Service Orientation

Service orientation means creating and using business processes packaged as services.

Service Oriented Architecture (SOA)

Service oriented architecture is a paradigm for organising and utilising distributed capabilities that may be under the control of different ownership domains. It provides a uniform means to offer, discover, interact with and use capabilities to produce desired effects consistent with measurable preconditions and expectations (from OASIS Reference Model for SOA: http://www.oasis-open.org/committees/download.php/19679/soa-rm-cs.pdf).

Shared Service Centre (SSC)

A Shared Service centre is an independent organisational unit within an organization, which provides in-house services for several organisational units working almost independently. Thus shall allow the efficient use of shared resources, the bundling of services and the simultaneous support of different organisational units. The concept of Shared Service Centres has become of big interest in the e-Government sector as well.

Signature Card

The signature card is a chip card which includes, among other things, an electronic signature and required certificates for an easy and secure authentication process. Thereby a legally binding electronic signature is enabled. Such signatures are used for example for secure e-Mail communication, online transactions and for the encryption of documents and data.

Single Sign-on (SSO)

Single sign-on is the one-time authentication of a user at a system, which enables access to different services and systems outside the initial system without renewing authentication at each subsystem.

Secure Socket Layer (SSL)

A protocol for encrypting messages during the data transfer on the Internet. SSL enables encrypted connections and the authentication of certificates in real time by the X.509 standard. The public key cryptography is used to encrypt the messages.

Standard

The term standard is mostly used for common, well-known and generally approved rules for engineering approaches and solutions in specific contexts. When used as synonym for norms, the expression refers to a set of legally approved rules, which have undergone an official evaluation procedure at an (international) standardizations organisation (ISO, ITU, W3C, etc.).

As defined in European legislation (Article 1, paragraph 6, of Directive 98/34/EC), a standard is a technical specification approved by a recognised standardisation body for repeated or continuous application, with which compliance is not compulsory and which is one of the following:

- international standard: a standard adopted by an international standardisation organisation and made available to the public,
- European standard: a standard adopted by a European standardisation body and made available to the public,
- national standard: a standard adopted by a national standardisation body and made available to the public.

Standards developing organisation

A chartered organisation tasked with producing standards and specifications, according to specific, strictly defined requirements, procedures and rules.
Standards developing organisations include:

- recognised standardisation bodies such as international standardisation committees such as the International Organisation for Standardisation (ISO), the three European Standard Organisations: the European Committee for Standardisation (CEN), the European Committee for Electrotechnical Standardisation (CENELEC) or the European Telecommunications Standards Institute (ETSI);
- fora and consortia initiatives for standardisation such as the Organisation for the Advancement of Structured Information Standards (OASIS), the World Wide Web Consortium (W3C) or the Internet Engineering Task Force (IETF).

Taxonomy

A taxonomy represents a classification of the standardised terminology for all terms used within a knowledge domain. In a taxonomy, all elements are grouped and categorised in a strict hierarchical way, and are usually represented by a tree structure. In a taxonomy, the individual elements are required to reside in the same semantic scope, so all elements are semantically related with one another to one degree or another.

Transaction

A transaction describes the exchange of services (goods and services) or data, and the transfer of rights of disposal.

Trust Centre

A trust centre is an independent institution for issuing certificates and assigning electronic signatures. The trust centre is responsible for the issuing, renewal, verification and management of certificates and it ensures authenticity and an efficient processing. Only trust centres accredited by the Federal Network Agency may issue qualified electronic signatures.

Vocabulary

A vocabulary is a set of terms (words or phrases) that describe information in a particular domain.

Workflow

The organisation of a process into a sequence of tasks that are performed by duly designated sets of actors fulfilling given roles in order to complete the process.

Annex D: List of Acronyms

B2B	Business to Business
B2C	Business to Citizens
B2G	Business to Government
BPR	Business Process Reengineering
CA	Certification Authority
CDLR	European Committee on Local and Regional Democracy
CDMA	Code Division Multiple Access
CEN	European Committee for Standardisation
CENELEC	European Committee for Electrotechnical Standardisation
CERT	Computer Emergency Response Team
CIO	Chief Information Office(r)
CIS	Commonwealth of Independent States
CORS	Continuously Operating Reference Stations
CSO	Civil Society Organisations
DAE	Digital Agenda Europe
DCFTA	Deep and Comprehensive Free Trade Area
DEA	Data Exchange Agency
DG	Directorate General (of the EU)
DMS	Document Management System
DoDAF	Department of Defence Architecture Framework
DSL	Digital Subscriber Line
e-	electronic
EA	Enterprise Architecture
EC	European Commission
ECDL	European Computer Driving License
EIFL	Electronic Information for Libraries
EIS	European Interoperability Strategy
EPS	European Public Service
ETSI	European Telecommunications Standards Institute
EU	European Union
Eurostat	Statistical office of the European Union
EVDO	Enhanced Voice-Data Optimized
FEA	Federal Enterprise Architecture

FoI	Freedom of Information
G2B	Government to Business
G2C	Government to Citizens
G2G	Government to Government
G2NGO	Government to NGO
G3	Georgian Governmental Gateway
GDP	Gross Domestic Product
GEO	Georgia
GIF	Georgian Interoperability Framework
GILISC	Georgian Integrated Library & Information System Consortium
GIS	Geographical Information System
GiTi	Georgian IT Innovations Conference (Annual Georgian ICT Development and Cyber Security Event)
GLAM	Galleries, Libraries, Archives, Museums
GNCC	Georgian National Communication Commission
GNSS	Global Navigation Satellite System
HRMS	Human Resources Management System
HTML	Hypertext Markup Language
HTTPS	Hypertext Transfer Protocol Secure
IaaS	Infrastructure as a Service,
ICCMS	Integrated Criminal Case Management System
ICT	Information and Communication Technology
ID	Identification
IDFI	Institute for Development of Freedom of Information
IOP	Interoperability
IPR	Intellectual Property Rights
ISP	Internet Service Provider
ISO	International Organization for Standardization
IT	Information Technology
ITRF	International Terrestrial Reference Frame
ITU	International Telecommunication Union
LE	Life Event
LEPL	Legal Enterprise of Public Law
LOD	Linked Open Data
LTE	Long Term EvolutionLTE
MCLA	Ministry of Corrections and Legal Assistance

MEPNR	Ministry of Environment Protection and Natural Resources
MES	Ministry of Education and Science
MFA	Ministry of Foreign Affairs
MIA	Ministry of internal Affairs
MoA	Ministry of Agriculture
MoD	Ministry of Defence
MoE	Ministry of Economy and Sustainable Development
MoF	Ministry of Finance
MoH	Ministry of Labour, Health and Social Affairs
MoJ	Ministry of Justice
MRA	Ministry of Internally Displaced Persons from the Occupied Territories, Accommodation and Refugees of Georgia
MRDI	Ministry of Regional Development and Infrastructure
MSY	Minister of Sports and Youth Affairs
NALAG	National Association of Local Authorities of Georgia
NAPR	National Agency for Public Registry
NATO	North Atlantic Treaty Organization
NBG	National Bank of Georgia
NGO	Non-Governmental Organisation
NIF	National Interoperability Framework
NIPC	Georgian National Intellectual Property Center SAKPATENTI
NPO	Non-Profit Organisation
NPM	New Public Management
NRMS	National Resource Management System
NSC	National Security Council
OASIS	Organization for the Advancement of Structured Information Standards
OECD	Organisation for Economic Co-operation and Development
OG	Open Government
OGD	Open Government Data
OGP	Open Government Partnership
OIO	Offentlig Information Online (public information online)
OSOR	Open Source Observatory and Repository
OSS	Open Source Software
PaaS	Platform as a Service,
PFMS	Public Finance Management System

POG	Prosecutor's Office of Georgia
PoSC	Point of Single Contact
PPP	Public Private Partnership
PSDA	Public Services Development Agency
RS.GE	Revenue Service Georgia
RSA	Rivest, Shamir and Adleman (encryption algorithm)
RoR	Register of Registries
SaaS	Software as a Service,
Sakpatenti	Georgian National Intellectual Property Center (SAKPATENTI)
SC	Service Catalogue
SME	Small and Medium sized Enterprise
SMR	(Office of the) State Minister of Georgia for Reintegration
SLA	Service Level Agreement
SOA	Service Oriented Architecture
SOE	State-Owned Entities
SSL	Secure Socket Layer
SSO	Single Sign-On
TOGAF	The Open Group Architecture Framework
TPDNC	Teacher’s Professional Development Center
TV	Television
UK	United Kingdom
UN	United Nations
UNESCO	United Nations Educational, Scientific and Cultural Organization
USA	United States of America
W3C	World Wide Web Consortium
WAI	Web Accessibility Initiative
WWW	World Wide Web
xGEA	Cross-Government Enterprise Architecture