United Nations define e-government as utilizing the Internet and the world-wide-web for delivering government information and services to citizens. Also, OECD defines e-government as the use of information and communications technologies (ICTs), and particularly the Internet, to achieve better government.

One of the effective measures against petty corruption is provision of e-services to citizens. State institutions in Azerbaijan have been establishing e-service sections on their websites starting from 2011. Specifically, the Cabinet of Ministers issued a decree (No.191) on 24 November 2011 and approved a list of more than 400 e-services to be provided to citizens and the business sector by more than 40 state institutions. Transparency Azerbaijan has been following the process of starting and developing of e-services in Azerbaijan since 2011. Transparency Azerbaijan also conducted its first monitoring in 2011 on the basis of the list approved by the Cabinet of Ministers. On 23 December 2014, Transparency Azerbaijan published its subsequent report on the assessment of e-government infrastructure and development of e-services. The report assessed 30 basic e-services and summarized the monitoring results of main components of the e-government infrastructure. During the six-month period since the publication of the above-mentioned report, a number of achievements has been attained, but several challenges also continue to persist. The aim of this progress report is to glance at achievements and challenges related to development of e-services in Azerbaijan during the past six months, as well as to test availability of e-services based on observations from daily life and to make recommendations for further development of e-services.
LATEST TRENDS, ACHIEVEMENTS AND CHALLENGES IN THE FIELD OF E-GOVERNMENT AND E-SERVICES

During the past six months (January to June 2015) the following trends, achievements and challenges have been observed in the field of e-government and e-services.

New trends in the field of e-government infrastructure and information systems

1. E-government technology is moving from a distributed model towards a centralised model (cloud computing).

Today e-government in the world is organised on two basic models – a centralised model based on cloud computing and a distributed model based on X-Road technology. Majority of European countries (Germany, France, Spain, etc), as well as some countries in Eastern Asia base their e-government models on cloud computing. E-government models based on cloud computing allow centralised, fast and convenient exchanges of information. Models based on X-Road allow secure exchanges of information between independent information systems of various states institutions. X-Road doesn't contain any data on its own, but provides secure exchanges of information between independent databases. Azerbaijan has decided to build its e-government model on X-Road and created an e-government gateway that provides secure exchanges of information between state institutions. Currently, there are signs of transition from a distributed model to a centralised model based on cloud computing. Main attributes of cloud computing are centralisation of information systems and placement of open data and applications on the Internet. The Ministry of Communication and High Technologies is planning some activities in this direction, namely establishment of a data centre. Open Government Information Portal is already created.

Tier III level regional DATA centre

TIER III data centre has following characteristics:

- Parallel functioning of information systems;
- Reserve cooling system;
- Reserve power supply system;
- Reserve telecommunication infrastructure.

One of the services to be provided by the new data centre is co-location. This means that servers of state institutions and even private businesses can be hosted in the data centre in return for a specific fee. In this case, the data centre becomes a zone providing communication channels, energy supply, cooling and security systems and the client establishes their own data centre within this zone. In case of disruption of energy supply, there is a backup – diesel generators are automatically turned on and the functioning of data
centre is guaranteed. If one of the optical fibre cables is damaged, flow of information is channelled through other optical fibre cables.

**Data.gov.az portal**

Open data are an additional element of e-government and a part of the Open Government Initiative. Through data.gov.az portal, citizens can find, download and use the information created by various state institutions. Currently, information on medicaments and vaccinations, local and international dialling codes, postcodes and street addresses, IMEI code verification, etc are available on data.gov.az. It is possible to prepare new online solutions and application by using this information.

2. **New information systems are being developed with a special focus on vulnerable social groups and people living in rural districts.**

- **VEMTAS information system for targeted social assistance:** The Ministry of Labour and Social Protection is developing the Unified Electronic Application and Awarding Sub-system (VEMTAS) for improving targeted social assistance. The implementation of VEMTAS is envisioned by the Presidential decree dated 23 February 2015. With the implementation of VEMTAS, all applications for will be handled by an automated system. There will be no need to collect necessary documentation from other state institutions for presenting them to the Ministry of Labour and Social Protection. The Ministry will collect the necessary documentation on its own. Citizens will receive an SMS informing them whether targeted social assistance is awarded to them and if yes – its amount.

- **Information system for Medical Social Examination and Rehabilitation of People with Disabilities for determining the disability status:** This information system is also developed by the Ministry of Labour and Social Protection. In order to determine the disability status before, Medical Social Examination Boards issued Direction No.88 to hospitals and hospitals held examinations and issued certificates on disabilities. This procedure was open to abuse. Now a database on results of disability examinations are being created and Medical Social Examination Boards will be able to access this database and receive relevant information on health condition of citizens applying to get disability status and make appropriate decisions based on this information. This information system is still being test-run.

- **Automated Management System on IDP benefits:** This information system is developed by the State Committee for Dealing with Refugees and IDPs. The system will have six functional sections:
  - List of IDPs receiving benefits;
Application of this information system will prevent cases of abuse and increase attention to those refugees and IDPs who are most in need of assistance.

- **Unified electronic information system for public applications to local executive authorities:** A Data Processing Centre of a unified information system for public applications to local executive authorities is being developed in line with the Presidential decree dated 29 April 2015. Through this system of electronic registration of public applications it will be possible to follow in an online regime all public applications to local executive authorities and to conduct relevant analyses. This might also make local executive authorities handle public applications with sensitive approach.

3. New information systems are connected to the e-government portal

Student-Graduate information system developed by the State Commission on Students’ Admission and GOMAP geographical information system developed by the Ministry of Culture and Tourism have been connected to the e-government portal.

**Achievement in the field of e-services**

1. Informative and interactive e-services dealing with some types of social benefits and pensions have been put into use.

**Informative e-services:** The Ministry of Labour and Social Protection has presented an electronic calculator to calculate 19 types of social benefits and pensions, including unemployment benefits. Every citizen can learn amount of benefits and pensions they can be awarded by using this e-calculator.

**Interactive e-services:** The State Social Protection Fund offers e-services on benefits paid from social insurance contributions. These e-services include electronic applications to the Fund for five types of social benefits:

- benefits for temporary loss of ability to work;
- benefits for pregnancy and childbirth;
- benefits for newly born children;
- benefits for childcare;
- benefits for organisation of funerals;

2. Other e-services of social significance have been put into use.
• **Electronic mortgage system:** Users can get relevant information on authorised banks, insurance and appraisal companies through this information system. Users can also use mortgage calculator and send online applications. This information system was developed by the State Mortgage Fund.

• **Electronic Information System for Medical Examination Card:** This information system was developed by the Ministry of Healthcare to improve control over timely medical examination of employees (obligated groups) required to take periodic medical examinations while working or being hired to work in specific areas. Medical examination cards can be ordered in an electronic form. These cards include records of periodic medical examinations and they can be read or changed by special card readers connected to computers.

3. **Electronic certificates have been being issues.**

Nine types of electronic certificates can be issued through the e-government portal:

- Certificate on a higher education diploma;
- Certificate on absence of debts for communication services;
- Certificate on information from ID cards;
- Certificate on personal information of a citizen;
- Certificate on a place of residence;
- Certificate on a place of employment;
- Certificate from Student-Graduate information system;
- Certificate on employment of teaching and technical staff at primary and secondary schools;
- Certificate on education of students at primary and secondary schools;

During the past six months, 130,000 citizens have taken consumer credits with the help of e-certificates on employment issued through the e-government portal.

4. **Several mechanisms have been put into use to increase public participation.**

**Online consultation service:** The e-government portal now has an online consultation section. This section has resulted in timely reception and review of comments and complaints by online users.

**Universal call centre:** A universal call centre has been established on the basis of call centres of the Ministry of Taxation and other state institutions. Currently, the ministries of Taxation, Finances, Economy and Industries, Justice, Labour and Social Protection, as well as State Customs Committee and the State Social Protection Fund are served by the universal call centre. The universal call centre receives on average 1,000 calls a day.
Challenges regarding e-government development and recommendations

1. Strategic and conceptual plan on development of e-services hasn't been fully prepared yet.

We recommend that a clear, step-by-step conceptual development plan with measurable achievement milestones should be prepared and cover the development of e-government until 2020. Also, the draft State Programme on development of e-services should be approved. And the register of services (both online and offline) delivered by all state authorities should be completed.

2. Uncertainty in funding of e-services hasn't been dealt with yet.

Every state institution has been funding their information systems from their administrative funds. This can be beneficial for some "self-funding" institutions, but it's also challenging for other "poor" state institutions to deliver e-services with better quality. We recommend that state institutions should be allocated separate funds for development of e-services when they receive their budgets. Also, we recommend that state institutions should cooperate with international donors for development of their information systems.

3. Some obstacles still remain in development of information systems and resources.

Development of information systems demands a lot of financial and human resources. Thus, we recommend that a list of priority information systems and resources should be prepared and they should receive priority funding from the state budget. We recommend that completion of the real estate and land cadastre, as well as the address register information system should be a priority. State archives, courts, movable property and medical records should also get priority attention.

4. Some obstacles remain in information exchange between information systems.

Information systems that contain private commercial information and affect the quality of e-services in Azerbaijan are developed in some sense, but the real estate database is not developed fully. The main commercial information database – Automated Tax Management System is not used during provision of e-services by most state institutions. Besides, state institutions use the e-government gateway (electronic information exchange function) in limited cases, especially when they provide population with e-services. Therefore, we recommend that:

- development of the real estate and land cadastre should be facilitated and its information should be exchanged with other state institutions;
The Ministry of Labour and Social Protection, the State Committee on Property Issues, the State Procurement Agency should be provided with an access to taxation information (VOEN) of companies and individual businesspeople while providing their respective e-services;

- The e-government gateway should be used more regularly between state institutions as a mean of secure information exchange infrastructure;
- Respective standards of information exchange (i.e., formats and protocols) should be prepared.

5. **E-services with social significance and delivered to ordinary citizens are less developed than e-services delivered to the business sector.**

In order to increase the number of users of e-services, it is planned to introduce new generation ID cards in Azerbaijan. These ID cards will include electronic signatures that can be used in all e-services. We recommend that the new ID cards should be multi-functional (i.e., can be used as health insurance cards, pension cards, driving licenses, as well as bank cards). Introduction of e-services in several other fields, namely, awarding of social benefits and targeted social assistance, determining the disability status, issuing ID cards, passports, taxi licenses and civil status acts, as well as job search, can also boost the number of users of e-services.

**Monitoring of e-services based on observations from daily life**

In order to assess effects of e-services in Azerbaijan, we have compiled a list of potential life events from a birth to a death. Based on the list of 28 life events, we have checked whether adequate e-services are available for each of these events. Three life events aren't covered by any e-services at all. For 15 of these life events, some respective e-services are missing and only 10 life events are covered by e-services. (+) sign indicates the existence of e-services; (-) sign indicates the absence of e-services; and (+-) sign indicates that e-services are not developed fully.

1. **I am pregnant / I have become a mother: (+-)**

   This category consists of three steps: finding relevant hospitals and doctors; registration of a childbirth; getting respective social benefits.

   **a) Finding relevant hospitals and doctors: (+-)** Doctor search service based on the Medical Staff Register and developed by the Ministry of Healthcare is of no use. Relevant doctors should still be searched for via traditional channels. Search for relevant hospital can be done through the Medical Facilities Information Service of the Ministry. The service provides contact numbers of state and private hospitals throughout the country.
b) Registration of childbirth at hospital: (+-) Medical certificate about childbirth can be obtained through an electronic service using the Electronic Register of Childbirth at the Ministry of Healthcare. Sometimes information on childbirth can be delivered in an online regime to the Population Register of the Ministry of Justice.

c) Getting respective social benefits: (+) E-services in this subcategory are provided by the State Social Protection Fund. Employers can use following three e-services provided by the Fund:
   – Submission of accounts on social benefits related to pregnancy and childbirth;
   – Submission of accounts on social benefits related to newly-born children;
   – Submission of accounts on social benefits related to childcare until the children are three years old.

2. I want to get the birth certificate for my child: (+)

   Electronic application for birth certificates is possible through the official website of the Ministry of Justice and the e-government portal.

3. I want to send my child to a kindergarten: (-)

   Unfortunately, any lists of kindergartens and any e-services related to them do not exist in Azerbaijan. The Ministry of Education has developed an e-service for enrolment of children to schools and the same kind of e-service should be applied to kindergartens.

4. I want to send my child to school: (+-)

   Currently, the e-service for enrolment of children to schools is available only in Baku. There are no e-services available for enrolment of children to schools in districts. (Ministry of Education)

5. I want to get an ID card and a passport: (-)

   In Azerbaijan, electronic application for getting ID cards or passports, as well as online queuing is not possible. (Ministry of Internal Affairs)

6. I want to know my military duty station: (+)

   Military conscripts can learn information about their duty stations from the State Service for Mobilisation and Military Conscription. The information can be learned through the official website of the State Service after filling in required data on the special e-service section or can be received as an SMS after sending required ID card information to 9100 short code.
7. I want to apply to university: (+)

Getting certificates for admission into examinations, as well as learning examination results are possible through the official website of the State Commission for Students' Admission (or via mobile operators).

8. I want to get certificates on education and transcripts from university: (-)

Currently, no Azerbaijani universities provide such e-services.

9. I want to pay my tuition fees online: (-)

University tuition fees are paid in a traditional way.

10. I want to order books from libraries through online catalogues: (+/-)

Currently, the National Library has an online catalogue and online library. Most books can be ordered online. However, other public libraries operate in a traditional way.

11. I am looking for a job: (-)

Job search e-service of the State Employment Service does not work.

12. I want to get unemployed status and unemployment benefits: (-)

Electronic application for getting unemployed status and unemployment benefits does not exist. (State Employment Service)

13. I want to be a businessperson: (+)

Everyone can register online as an individual businessperson or create a judicial body through e-services developed by the Ministry of Taxation.

14. I want to get a credit: (+)

Currently, more than 10 banks provide online application opportunities for getting consumer credits. It is possible to get acquainted with mortgage information, as well as to use a mortgage calculator and to send an electronic application through the Electronic Mortgage Information System.

15. I have to pay taxes: (+)
It is possible to fill in tax declarations and pay taxes online both for simplified taxation procedures and also for VAT payers.

16. I want to get married: (+)

Application for registration of a marriage is possible through a respective e-service provided by the Ministry of Justice provides

17. I want to travel: (+)

Air tickets can be booked online through Azerbaijan Airlines (a state company) e-service. It is also possible to book tickets online through the State Railway Company and Baku International Bus Station e-services. However, these services are not available through the e-government portal. Besides, in some cases coach drivers refuse (illegally) to accept tickets that were booked online (or purchased from ticket offices).

18. I want to change my registration address: (-)

There are no e-services in this direction.

19. I want to get a driving license or to renew it: (-)

These e-services haven't been developed by the Ministry of Internal Affairs yet.

20. I want to register my vehicle: (-)

There are no e-services in this direction.

21. I want to get a registration number for my vehicle: (-)

These e-services haven't been developed by the Ministry of Internal Affairs yet.

22. I want to get a taxi license: (-)

These e-services haven't been developed by the Ministry of Transportation yet.

23. I want to get customs clearance for my goods: (-)

The State Customs Committee hasn't developed e-services for customs clearance for goods and vehicles. But customs duties can be paid online.

24. I want to get social benefits: (+-)


The Ministry of Labour and Social Protection has presented an electronic calculator to calculate 19 types of social benefits and pensions, including unemployment benefits. Every citizen can learn the amount of benefits and pensions they can be awarded by using this e-calculator. However, it is not possible to apply online for social benefits. On the other hand, The State Social Protection Fund offers e-services for the following five types of social benefits:
- benefits for temporary loss of ability to work;
- benefits for pregnancy and childbirth;
- benefits for newly born children;
- benefits for childcare;
- benefits for organisation of funerals;

25. I want to get information on my property: (+/-)

Currently, it is possible to apply for encumbrance certificates online, but it is not possible to get those encumbrance certificates online.

26. I want to apply to courts: (-)

Currently, it is not possible to send electronic applications, complaints or other documents to courts. However, the Electronic Court project requires these e-services to be in their place.

27. I want to apply for a pension: (+)

It is possible to apply online for pensions on grounds of old age, disability or the loss of family head, as well as for changing types of pensions through e-services provided by the State Social Protection Fund.

28. My relative has died: (-)

It is not possible to get medical death certificates online. Electronic death certificates are not available from the Ministry of Justice either.

Recommendations:
- E-services regarding pregnancy and maternity should be provided proactively. The state should not wait for employers to submit respective applications in order to award maternity benefits. As the state is informed about childbirth and mothers' rights to benefits in advance, it should act first and guarantee maternal benefits.
- Enrolment to kindergartens should be organised through an electronic application system. A list of all kindergartens in the country should be
compiled and posted online with vacant spaces in each kindergarten indicated.

- Electronic application system for enrolment to schools should also cover schools in districts, not only those in Baku.

- Respective e-services should be developed for online application for ID cards, passports and driving licenses.

- Respective e-services should be developed for online application for registration of vehicles and issuing of state registration numbers.

- Universities should develop their own information systems and issue certificates on education and transcripts to students in an online manner, as well as provide for online payment of university fees.

- Job search service of the State Unemployment Service should be open to all citizens, as well as granting the unemployed status and awarding unemployment benefits should be available online.

- The Ministry of Labour and Social Protection should provide means of online application for 19 types of social benefits and allowances awarded by the Ministry.

- Online application to courts should be ensured.

- Citizens should be provided with means of changing their registration address through e-services.

**Conclusion**

The main challenge in the field of e-government is still the lack of adequate financial resources for development of information systems. However, the improvement of e-services especially in social sphere has been observed during the past six months. Some new informative and interactive e-services regarding social benefits, as well as issuing of several certificates (on residence, work place, university diplomas, lack of utilities debt, etc) should be noted particularly. However, several e-services, especially those regarding targeted social assistance, disability status, job search, most social benefits have not been presented to the public yet. E-services regarding medical death certificates, ID cards, passports, driving licenses, online application for registration number for cars and online application for enrolment to kindergartens haven’t been developed either.
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